10 Household Plants That Are Dangerous to Cats

- Over 700 indoor/outdoor plants contain toxic substances that may harm dogs and cats.
- If these plants are ingested, signs of poisoning can be mild to severe, sometimes even causing death.
- Most houseplants have multiple names, so it is important to confirm that the houseplants you currently own or may purchase are not toxic to your pet.

**Asparagus Fern**

Asparagus fern (also called *emerald feather*, *emerald fern*, *sprengeri fern*, *plumosa fern*, and *lace fern*) is toxic to dogs and cats. The toxic agent in this plant is sapogenin—a steroid found in a variety of plants. If a dog or cat ingests the berries of this plant, vomiting, diarrhea, and/or abdominal pain can occur. Allergic dermatitis (skin inflammation) can occur if an animal is repeatedly exposed to this plant.

**Corn Plant**

Corn plant (also known as *cornstalk plant*, *dracaena*, *dragon tree*, and *ribbon plant*) is toxic to dogs and cats. Saponin is the toxic chemical compound in this plant. If this plant is ingested, vomiting (with or without blood), appetite loss, depression, and/or increased salivation can occur. Affected cats may also have dilated pupils.

**Dieffenbachia**

Dieffenbachia (commonly known as *dumb cane*, *tropic snow*, and *exotica*) is toxic to dogs and cats. Dieffenbachia contains a chemical that is a poisonous deterrent to animals. If this plant is ingested, oral irritation can occur, especially on the tongue and lips. This irritation can lead to increased salivation, difficulty swallowing, and vomiting.

**Elephant Ear**

Elephant ear (also known as *caladium*, *taro*, *pai*, *ape*, *cape*, *via*, *via sori*, and *malanga*) contains a chemical similar to the one in dieffenbachia, so an animal’s toxic reaction to elephant ear is similar: oral irritation, increased salivation, difficulty swallowing, and vomiting.

**Lilies**

Many plants of the lily family are considered toxic to cats, and some are considered toxic to dogs. Cats are the only animals in which the Easter and stargazer lilies are known to be toxic. Generally, a cat’s first toxic reaction to this plant includes vomiting, lethargy, and a lack of appetite, but severe kidney failure, and even death, can quickly follow if a cat is untreated. The peace lily (also known as *Mauna Loa*) is toxic to dogs and cats. Ingestion of the peace lily or calla lily can cause irritation of the tongue and lips, increased salivation, difficulty swallowing, and vomiting.
Cyclamen

Cyclamen (also known as sowbread) is a pretty, flowering plant that is toxic to dogs and cats. If ingested, this plant can cause increased salivation, vomiting and diarrhea. If an animal ingests a large amount of the plant’s tubers—which are found at the root, generally below the soil—heart rhythm abnormalities, seizures, and even death can occur.

Heartleaf Philodendron

Heartleaf philodendron (also known as horsehead philodendron, cordatum, fiddle-leaf, panda plant, split-leaf philodendron, fruit salad plant, red emerald, red princess, and saddle leaf) is a common, easy-to-grow houseplant that is toxic to dogs and cats. This philodendron contains a chemical that can irritate the mouth, tongue, and lips of animals. An affected pet may also experience increased salivation, vomiting, and difficulty swallowing.

Jade Plant

Jade plant (also known as baby jade, dwarf rubber plant, jade tree, Chinese rubber plant, Japanese rubber plant, and friendship tree) is toxic to cats and dogs. The toxic property in this plant is unknown, but ingestion of it can cause vomiting, depression, ataxia (incoordination), and bradycardia (slow heart rate; this is rare).

Aloe Plant

Aloe plant (also known as medicine plant and Barbados aloe) is a common, succulent plant that is toxic to dogs and cats. Aloin is considered the toxic agent in this plant. This bitter, yellow substance is found in most aloe species and may cause vomiting and/or the urine to become reddish.

Satin Pothos

Satin pothos (also known as silk pothos) is toxic to dogs and cats. If ingested by a cat or dog, this plant may irritate the mouth, lips, and tongue. The pet may also experience an increase in salivation, vomiting, and/or difficulty swallowing.

Learn More

For a full list of toxic and non-toxic indoor and outdoor plants, visit the American Society for the Prevention of Cruelty to Animals (ASPCA) website at www.aspca.org or The Humane Society of the United States website at www.humanesociety.org.
A Pet Owner's Guide to Flea Control

- Adult fleas are only part of the problem. Immature fleas (eggs and larvae) contribute to flea infestation, too.
- Your pet does not have to go outside to get fleas.
- Your veterinarian is a reliable source of information on safe and effective flea control products for your pet and home.

What Are Fleas?

Fleas are blood-feeding parasites that can infest many species of birds and mammals. Although fleas on dogs and cats don't infest people, fleas may bite people if an area is heavily infested. Flea infestation is one of the most common medical problems veterinarians see, and pets suffer greatly from this condition. Flea bites can trigger severe allergic reactions in some pets. The intense itching caused by flea infestation causes pets to scratch and bite themselves. This can lead to skin wounds, skin infections, and general misery for your pet. Even if your pet is not allergic to flea bites, fleas can transmit serious diseases, such as bartonellosis (the bacteria that causes “cat scratch disease” in people), and other parasites, like tapeworms.

How Do Animals Become Infested With Fleas?

Fleas are very successful parasites. Temperature and humidity extremes can kill them, but they can survive for long periods of time under a surprising range of conditions. Developing fleas can even become dormant for many months if there are no hosts available.

If your pet spends time outside, in kennels, or around other animals, the risk of picking up fleas increases. However, even a completely indoor pet can become infested with fleas. Because the temperature and humidity conditions inside your home are fairly stable, fleas can live there with relative ease. In this way, fleas can live in colder regions of the country, surviving climate conditions that would otherwise be intolerable. Once they have entered a house, fleas can multiply very well under favorable year-round conditions, adding to the challenge of controlling them in a home environment.

You can bring fleas into your home on your clothing, and any people or animals that come into your home can also bring fleas with them. Once fleas find a host, they begin to feed almost immediately. They lay large numbers of eggs, which eventually mature into new fleas that continue the infestation. Adult fleas may remain on an animal, but the eggs and larvae fall off the animal and remain in the environment. Flea larvae are mobile, and they can hide in places such as carpeting, bedding, furniture, and baseboards. Once they mature, they take the first opportunity to jump onto an animal or person and begin to feed, continuing their life cycle.

How Can I Tell If My Pet Has Fleas?

Fleas may not be easily visible on your pet. If an infestation is heavy, you may see fleas on the animal’s skin, or you may find them by combing your pet with a flea comb. Adult fleas are the easiest stage of the parasite to find, but they account for less than 5% of an infestation. The other
stages (eggs, larvae, and pupae), which make up the other 95%, are smaller and more difficult to find.

You may also find small black/brown specks on your pet’s skin or bedding. These specks look like tiny coffee grounds and are commonly called “flea dirt.” Flea dirt is the feces of adult fleas and is actually the digested blood of the host. When the dark particles get wet, the red color returns, which may help with identification.

Some pets are allergic to fleas and can become intensely itchy from a single flea bite, whereas other pets may experience mild itching or none at all. Just because your pet isn’t scratching doesn’t mean there are no fleas. When in doubt, check it out!

**How Can I Treat the Problem?**

Because flea infestations involve multiple life stages, an effective treatment strategy targets as many stages as possible. If you believe your pet is infested with fleas, begin with a trip to your veterinarian. Your pet may have a skin infection or other problem that needs attention. Once your pet has been examined, your veterinarian can recommend a safe and effective product that you can use to kill the fleas. Some products specifically target adult fleas, while others also target the immature stages, like eggs and larvae. Regardless of what product is used, multiple treatments are generally required to completely eliminate an infestation. If you have multiple pets in your home, each animal should be treated with an appropriate product. In some cases, the house may also need to be treated to exterminate fleas. Products are also available for treating the yard and outdoors. Care must be taken, however, as these products may seep into the soil over time and affect groundwater. A “greener” strategy may be to focus on targeting fleas on your pets and in the home.

Although fleas have been around for a long time, many products are available today that can safely and effectively eliminate them. Ask your veterinarian about the best way to control fleas and keep them from endangering your pets!
Abdominal Radiography

- Abdominal radiography is painless, very safe, and noninvasive, and it can sometimes be performed during an outpatient visit while you wait.
- Abdominal radiography is useful for evaluating the size, shape, and position of abdominal organs.
- Sedation is sometimes recommended for patients undergoing radiography.
- Radiography can help your veterinarian diagnose numerous medical conditions involving the intestines, bladder, and other abdominal organs.

What Is a Radiograph?

A radiograph (sometimes called an x-ray) is a type of photograph that reveals the body’s internal organs. The procedure for obtaining a radiograph is called radiography. Radiography is a very useful diagnostic tool for veterinarians because it can help obtain information about almost any organ in the body, including the heart, lungs, and abdominal organs, as well as the bones.

How Does Radiography Work?

Traditional radiography machines use very low doses of radiation delivered in a focused beam (an x-ray) that is aimed at a photographic plate containing specialized photographic film. The patient is positioned between the x-ray beam and the photographic plate. When the x-ray beam passes through the patient, an image is created on the specialized film. Structures that are very thick or dense, such as bone, do not allow much of the beam to penetrate and expose the film. These structures look very bright or white on a radiograph (see the x-ray image). In contrast, structures that are not dense (such as gas in the intestines) allow the beam to penetrate more completely and expose the film. As a result, these structures appear relatively dark when the radiograph is viewed. Structures that are of medium density, such as fluid, appear in various shades of gray on the film.

Digital radiograph machines use a very similar principle, but the final image can be much sharper and can show greater detail than images obtained from traditional radiography machines.

How Is Abdominal Radiography Performed?

Abdominal radiography is painless, safe, and completely noninvasive. Your pet will be positioned on the x-ray table, and the width of the abdomen will be measured. This is necessary for precisely adjusting the intensity of the x-ray beam to capture the most accurate information. Once the measurements are complete, the x-ray tube (which will generate a beam of low-level radiation) is aligned over the abdomen, and a button is pushed on the radiograph machine to take the “photograph.” This part of the procedure is very much like taking a photograph with a camera. In most cases, at least two “pictures” are taken from different angles to create a three-dimensional image of the abdominal organs.
Your veterinarian may recommend that your pet receives sedation before undergoing radiography. When an animal is sedated, positioning is much easier because the patient is completely relaxed. Sedation may also be recommended if the patient is in pain.

What Are Abdominal Radiographs Used For?

Abdominal radiography may be recommended to investigate a variety of clinical signs, including the following:

- Abdominal pain
- Vomiting
- Diarrhea
- Appetite loss
- Weight loss
- Abnormal urination or defecation
- Lethargy

Radiographs are used to examine the size, shape, and position of the abdominal organs. The size of organs is important because some medical conditions can cause enlargement of the kidneys, liver, spleen, or other abdominal organs. Some chronic conditions, such as chronic kidney disease or chronic liver disease, can cause these organs to appear smaller than normal on a radiograph. The shape and position of organs can be altered or distorted by certain medical conditions, including intestinal blockages or cancer. Radiography is sometimes used to detect pregnancy and determine the number and position of the fetuses. Tumors, depending on their size and position, can be detected using radiography. Fluid or gas in the abdomen can also be detected through radiography. Conditions such as internal bleeding or intestinal perforation (holes) can cause fluid or gas to collect in the abdomen.

Radiography can be used to diagnose many other conditions involving abdominal organs, including bladder stones, kidney stones, and intestinal foreign bodies.

What Are the Benefits and Risks of Abdominal Radiography?

Radiography has many benefits and very minimal risks. It is very safe, completely painless, and non-invasive. It is available in most veterinary practices and can sometimes be performed during an outpatient visit while you wait. Depending on the type of radiographic study being performed, the procedure may take only a few minutes.

The risks of radiography are minimal. Because the level of radiation exposure needed to perform radiography is very low, even pregnant females and very young pets can undergo radiography. If a pet is very unstable, such as a pet with severe breathing difficulties, the stress of performing radiography may be a concern. In these cases, it may be necessary to stabilize the pet (with oxygen or other therapy) before attempting to perform radiography. In the vast majority of cases, the benefits of performing radiography far outweigh the possible risks. Radiography is a valuable tool for your veterinarian because it can provide critical information about many different illnesses and medical conditions.
This abdominal radiograph shows several organs that your veterinarian will examine: the stomach (A), intestines (B), bladder (C), and colon (D). Gas in the colon and stomach appears very dark on the radiograph; however, fluid in the bladder is gray, and the bones of the spine (E) appear closer to white.
Acetaminophen Toxicity

- Acetaminophen can be toxic to dogs and cats, but cats are 7 to 10 times more susceptible to acetaminophen toxicity than dogs are.
- Once swallowed, acetaminophen reaches the blood stream within 30 minutes; toxic effects are rapid and damage the liver and red blood cells.
- Never give a medication intended for people to your pet unless instructed to do so by your veterinarian.

What Is Acetaminophen Toxicity?

Acetaminophen is the active ingredient in Tylenol and some other related medications that are used to treat pain and fever in people. Unfortunately, this drug can be extremely toxic (poisonous) to cats and dogs. Acetaminophen toxicity occurs when a cat or dog swallows enough of the drug to cause damaging effects in the body.

Acetaminophen is mostly metabolized (broken down and eliminated from the body) by the liver. Some of the substances that are created during this process can have harmful effects on cats and dogs. Cats are at much greater risk of toxicity than dogs because they lack certain proteins necessary for the liver to safely metabolize acetaminophen.

How Does Acetaminophen Toxicity Occur?

Many cases of acetaminophen toxicity in dogs and cats are accidental. A pet may find and chew on a bottle of pills or eat a pill that has fallen on the floor. Sadly, some cases occur because pet owners give medication intended for people to their pets without being instructed to do so by a veterinarian.

Acetaminophen is a drug meant for people. However, there are situations in which your veterinarian may prescribe a specific dosage of acetaminophen for your dog. Be sure to follow your veterinarian’s dosage directions very carefully and report any vomiting or other problems right away. Cats are 7 to 10 times more susceptible to acetaminophen toxicity than dogs are. Because cats are extremely sensitive to the drug’s toxic effects, acetaminophen is not given to cats.

What Are the Clinical Signs of Acetaminophen Toxicity?

Once swallowed, acetaminophen is rapidly absorbed from the stomach and intestines and can achieve significant levels in the blood within 30 minutes. The main toxic effects take two forms:

- **Liver damage:** One of the substances produced by the breakdown of acetaminophen binds to liver cells, damaging them. Severe damage can lead to liver failure.
- **Damage to red blood cells:** One of the substances produced by the breakdown of acetaminophen binds to red blood cells. Once bound, this substance changes hemoglobin (the protein in red blood cells that enables them to carry oxygen) into a molecule that is no longer able to carry oxygen. This means that the blood can no longer supply adequate
amounts of oxygen to the body’s vital organs. The altered hemoglobin molecule is called methemoglobin; its lack of oxygen-carrying ability changes the color of blood from red to brown.

Cats and dogs can develop both forms of acetaminophen toxicity. However, cats are more likely to suffer hemoglobin damage while dogs are more likely to suffer liver damage. The main clinical signs associated with acetaminophen toxicity that result from liver injury and an inability of the blood to carry oxygen include:

- Vomiting
- Decreased appetite
- Lethargy (tiredness)
- Difficult or rapid breathing
- Abdominal pain
- Brown discoloration of the gums (a result of methemoglobin)
- Brown urine
- Blue gums (known as cyanosis, indicates inadequate oxygen supply)
- Swelling of the face or paws
- Shock, collapse, death

How Is Acetaminophen Toxicity Diagnosed?

Diagnosis of acetaminophen toxicity is commonly based on a history of recently chewing or swallowing pills. Your veterinarian may recommend diagnostic testing, such as a chemistry panel and complete blood cell count (CBC), to assess the extent of the damage.

What Are the Treatment and Outcome for Pets Suffering From Acetaminophen Toxicity?

Acetaminophen is absorbed and metabolized very quickly. If you realize right away that your pet has swallowed acetaminophen, vomiting can be induced to remove the drug from your pet’s stomach before the body can absorb it. Another option may be to anesthetize your pet in order to flush out the contents of the stomach. Your veterinarian may also administer a special preparation of liquid-activated charcoal to slow absorption of toxic material from the stomach and intestines.

There is a specific antidote for acetaminophen toxicity. This medication, N-acetylcysteine, limits formation of the toxic substance that damages the liver and red blood cells. Additional treatments may include blood transfusions, intravenous fluid therapy, and other medications to help support and stabilize the patient.

Acetaminophen toxicity can be fatal. However, pets can survive if the condition is recognized, diagnosed, and treated quickly.

Most cases of acetaminophen toxicity are preventable. Never give medications meant for people to your pet unless instructed to do so by your veterinarian, and keep all medications in the home secured to help prevent accidental swallowing.
ACTH Stimulation Test

- ACTH (adrenocorticotropic hormone) is a hormone produced by the brain that stimulates the adrenal glands to release cortisol and other hormones.
- Two medical conditions, Cushing’s disease and Addison’s disease, occur when the body’s regulation of adrenal gland hormones is altered.
- The ACTH stimulation test can help your veterinarian diagnose Cushing’s disease or Addison’s disease.

What Is ACTH?

Glucocorticoids (primarily cortisol) and mineralocorticoids are two important types of hormones produced by the body’s adrenal glands. Glucocorticoids and mineralocorticoids help regulate numerous complex processes in the body and participate in critically important functions, including the following:

- Maintaining fluid balance
- Maintaining sodium and potassium balance
- Maintaining the integrity and function of blood vessels
- Regulating blood pressure and blood flow to vital organs, like the kidneys
- Supporting cardiac function
- Controlling blood sugar levels and carbohydrate metabolism
- Helping to counteract the effects of stress
- Helping to maintain immune system function

Under normal conditions, the brain releases a hormone called adrenocorticotropic hormone (ACTH) that stimulates the adrenal glands to release their hormones. The body has highly developed systems called feedback mechanisms that control, based on the body’s needs, how much of these hormones the adrenal glands produce and release. For example, during times of physical or emotional stress, the body tends to increase the production and release of glucocorticoids (cortisol) to help it deal with the stressful episode. In contrast, when the body is receiving cortisol from an outside source (like a cortisone pill or injection), it reduces the amount of cortisol that the adrenal glands produce.

Two medical conditions, Cushing’s disease and Addison’s disease, occur when the body’s regulation of these hormones is altered; such alterations can cause significant illness in affected pets. Cushing’s disease occurs when the body produces and releases excessive amounts of cortisol. The clinical term for Cushing’s disease is hyperadrenocorticism. Addison’s disease occurs when the brain doesn’t release adequate amounts of ACTH, or the adrenal glands fail to release their hormones in response to ACTH. The medical term for Addison’s disease is hypoadrenocorticism.

Cushing’s disease occurs when a change in the body causes the adrenal glands to ignore the normal feedback mechanisms that regulate cortisol, leading to excessive production and release of the hormone. Sometimes Cushing’s disease is caused by a tumor on one of the adrenal glands, which continues to make cortisol despite signals from the body telling it to stop. Sometimes, the
adrenal glands are “tricked” by the pituitary gland in the brain into continuing to produce too much cortisol. Either way, the sustained overproduction and release of cortisol eventually results in negative effects on the body.

In most cases, the cause of Addison’s disease is not determined. Sometimes, the body’s immune system can damage the adrenal glands’ cells so extensively that they can’t release hormones when necessary. In other cases, such as a brain tumor, the part of the brain that should release ACTH is unable to. However, Addison’s disease can also occur if a pet that is receiving cortisol medication suddenly stops getting it. In this case, the body has reduced its own cortisol production and can’t increase it quickly enough to compensate when the medication is discontinued. This is why steroid medications, such as prednisone, should not be discontinued suddenly, but must instead be gradually reduced and then discontinued.

Cushing’s disease and Addison’s disease are most commonly diagnosed in dogs, although they occur rarely in cats.

**What Is an ACTH Stimulation Test?**

If your veterinarian suspects your pet may have Cushing’s disease or Addison’s disease, an ACTH stimulation test may be recommended. The ACTH stimulation test involves administering a small amount of ACTH by injection and then measuring the levels of cortisol produced over a period of a few hours. In dogs with Cushing’s disease, the injection of ACTH causes the adrenal glands to release unusually high amounts of cortisol. In a dog with Addison's disease, the adrenal glands may be unable to respond adequately to ACTH, so the injection of ACTH does not result in a significant increase in cortisol levels. These responses can help your veterinarian diagnose Addison’s disease or Cushing’s disease in your pet. However, additional tests are recommended in many cases to confirm a diagnosis.

**How Is an ACTH Stimulation Test Performed?**

Your veterinarian will begin the test by drawing a small amount of blood from your pet to check the baseline (“starting”) cortisol level. Afterward, a very small amount of ACTH is given by injection. A repeat blood sample is taken 1 to 2 hours after the injection to measure the cortisol level and determine if the body’s response is appropriate. The blood samples are submitted to a diagnostic laboratory, and results are generally available within a few days.

Your veterinarian will likely recommend that your pet remain in the hospital for the few hours that are needed to complete the ACTH stimulation test. This is to avoid stress or excitement (for example, from a car ride), which can affect your pet’s cortisol level and reduce the accuracy of the final test result. Generally, pets undergoing an ACTH stimulation test are temporarily kept in a very quiet area of the hospital to reduce stress and excitement as the test is being performed. Your veterinarian may ask you to withhold food on the day of the test. You should mention any medications or supplements that your pet may be receiving, as some chemicals can affect the accuracy of the test. Be sure to address any questions or concerns with your veterinarian.

**What Is an ACTH Stimulation Test Used For?**
Cushing’s disease and Addison’s disease are complicated medical conditions, and confirming a diagnosis can be challenging. Your pet’s response on this test can provide valuable information to help your veterinarian reach a diagnosis. In many cases, additional tests (including blood tests, x-rays, abdominal ultrasound examinations, and urine tests) are recommended to confirm a diagnosis.

Once a pet has been diagnosed with Cushing’s disease and is undergoing treatment, many veterinarians periodically perform ACTH stimulation tests to assess how well the pet is responding to treatment.

**Are There Risks Associated with Performing an ACTH Stimulation Test?**

There are very few risks associated with ACTH stimulation testing. The ACTH injection is very safe and side effects are exceptionally rare. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Your veterinarian will also take steps to ensure that your pet is safe and comfortable while being hospitalized for the test. Once blood is obtained, all further processing is performed at your veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.

Diagnosing Cushing’s disease and Addison’s disease can be complicated, but an early diagnosis can mean early treatment and a better chance at a normal life for your pet.
Addison's Disease

- Addison’s disease occurs when the body cannot produce adequate amounts of certain hormones, including a hormone called cortisol.
- Addison’s disease tends to affect young to middle-aged dogs, and females are more commonly affected than males. It is rare in cats.
- Diagnosis can be complicated, but most dogs respond well to appropriate treatment and can live normal lifespans.

What Is Addison’s Disease?

Glucocorticoids (primarily cortisol) and mineralocorticoids are two important types of hormones produced by the body’s adrenal glands. Under normal conditions, the brain releases a hormone called adrenocorticotropic hormone (ACTH) that stimulates the adrenal glands to release their hormones. Addison’s disease occurs when the brain doesn’t release adequate amounts of ACTH, or the adrenal glands fail to release their hormones in response to ACTH. The medical term for Addison’s disease is hypoadrenocorticism.

Glucocorticoids and mineralocorticoids help regulate numerous complex processes in the body and participate in critical functions such as the following:

- Maintaining the body’s fluid balance
- Maintaining the body’s balance of sodium and potassium
- Maintaining the integrity and functioning of blood vessels
- Regulating blood pressure and blood flow to vital organs, like the kidneys
- Supporting cardiac function
- Controlling blood sugar levels and carbohydrate metabolism
- Helping to counteract the effects of stress
- Helping to maintain immune system function

The body has highly developed systems called feedback mechanisms that control how much of these hormones the adrenal glands produce and release, based on the body’s needs. During times of physical or emotional stress, the body tends to increase the production and release of glucocorticoids (cortisol) to help it deal with the stressful episode. In contrast, when the body is receiving cortisol from an outside source (like a cortisone pill or injection), it reduces the amount of cortisol that the adrenal glands produce.

In most cases, the cause of Addison’s disease is not determined. Sometimes, the body’s immune system can damage the adrenal glands’ cells so extensively that they can’t release hormones when they need to. In other cases, such as a brain tumor, the part of the brain that should release ACTH is unable to. However, Addison’s disease can also occur if a pet that is receiving cortisol medication suddenly stops getting it. In this case, the body has reduced its own cortisol production and can’t increase it quickly enough to compensate when the medication is discontinued. This is why steroid medications (such as prednisone) should not be discontinued suddenly, but must instead be gradually reduced and then discontinued.
Addison’s disease is most commonly diagnosed in dogs, although it does occur rarely in cats. Young to middle-aged dogs are generally affected, and females are more commonly affected than males.

What Are the Clinical Signs of Addison’s Disease?

The clinical signs associated with Addison’s disease can vary greatly and can resemble those of other diseases. They include the following:

- Vomiting and diarrhea
- Decreased appetite
- Increased drinking and urination
- Dehydration
- Weakness and collapsing episodes
- Abdominal pain
- Weight loss
- Weak pulse and slow heart rate

These clinical signs can vary in severity, and many owners report that the problems seem to “wax and wane”—sometimes seeming to resolve on their own and sometimes responding temporarily to very nonspecific treatment. Because dogs with Addison’s disease have a reduced ability to handle stress, the emotional stress of visiting a boarding kennel or the excitement of a family gathering can cause clinical signs to resurface.

How Is Addison’s Disease Diagnosed?

Diagnosis of Addison’s disease may require several steps. Your veterinarian will likely begin by reviewing your pet’s medical history. A complete physical examination may be followed by recommendations to perform diagnostic tests. Results of these tests can support a diagnosis of Addison’s disease:

- Blood tests, including a chemistry panel and complete blood cell count (CBC)
- Urinalysis
- Abdominal radiographs (x-rays)
- Abdominal ultrasonography

If your veterinarian suspects Addison’s disease, an additional test called an ACTH stimulation test may be recommended. As described above, ACTH is the hormone the brain produces that stimulates the adrenal glands to release glucocorticoids and mineralocorticoids. In a dog with Addison’s disease, ACTH may be absent or the adrenal glands may be unable to respond adequately to it. The ACTH stimulation test involves administering a small amount of ACTH by injection and then measuring the levels of cortisol produced over a period of a few hours. In dogs with Addison’s disease, the injection of ACTH does not result in a significant increase in cortisol levels. This response can be used to confirm a diagnosis.
The ACTH stimulation test requires a few hours of hospitalization so that blood can be drawn to check the body’s response to the injection.

**What Are the Treatment and Outcome for Addison’s Disease?**

Some dogs with Addison’s disease arrive at the veterinary office in a state of life-threatening crisis. Low blood pressure, shock, dehydration, impaired heart function, and other complications of the disease can be fatal if not treated immediately and aggressively. In such a case, hospitalization for emergency intravenous fluid therapy and other stabilization is necessary.

In other cases, the clinical signs of Addison’s disease are more subtle. As long as the dog is stable, treatment can begin on an outpatient basis.

The primary treatment for Addison’s disease consists of giving the body the adrenal gland hormones it is unable to produce on its own. Glucocorticoid supplementation commonly involves administering prednisone or hydrocortisone pills. Most dogs also need mineralocorticoid supplementation; these are available in pill and injectable formulations. A popular mineralocorticoid formulation is injectable deoxycorticosterone pivalate (DOCP); this medication can be given as an injection every 21 to 30 days.

Medications for Addison’s disease only replace missing hormones; they don’t cure the disease. Therefore, dogs with Addison’s disease need to receive medications for the rest of their lives. Periodic veterinary examinations and repeat blood testing are required for the life of the pet, and sometimes medication dosages need to be adjusted. Your veterinarian may also want to discuss modifying your pet’s medication during times of stress, when the body’s need for these hormones may increase. Fortunately, dogs that receive proper treatment for Addison’s disease can have a normal lifespan and enjoy a good quality of life.
Administering Injectable Medication To Your Cat

- Most injectable medications given at home are administered by injection directly under the skin (known as subcutaneous injection).
- Do not risk being bitten, scratched, or otherwise injured trying to medicate your pet. If you are unable to administer medication, your veterinarian may be able to offer other options.
- Your veterinary health care team will work with you to make sure you know how to give injectable medication without injuring yourself or your cat.

Why Does My Cat Need Injectable Medication?

Certain medications, such as insulin, can only be administered by injection. Depending on the formulation and the type of medication, injectable medications can be given by several routes. They can be given through direct injection into a vein (known as intravenous, or IV injection), injection into a muscle (known as intramuscular, or IM injection), or injection directly under the skin – a procedure known as subcutaneous (SC or SQ) injection. It is very important that you understand how your pet’s injectable medication needs to be given; for example, if you accidentally give a medication intravenously instead of subcutaneously, complications can result. Most injectable medications given at home are intended to be given subcutaneously.

Getting Started

Before you start, ask your veterinary health care team for training and advice so you know how to give injectable medication without injuring yourself or your cat. If you aren’t comfortable or need additional training sessions, don’t be afraid to ask!

Here are a few things to consider:

- **Be sure you can handle your cat without being injured.** This may not be an issue if your cat is very relaxed and is used to being handled. However, if you have had problems in the past trying to trim nails or perform other procedures on your cat, you may need help giving medication by injection. Talk to your veterinary care team about tips for properly restraining your cat for medication injections before attempting your first session. In some cases, you may need another person to help hold your cat so you can safely give the injection.
- **Don’t be afraid to ask questions.** Your team of veterinary professionals will be glad to answer any questions you may have about safely administering medication injections to your cat.
- **Record your cat’s medication schedule on the calendar.** Include the date and time that the medication needs to be administered. This will help you to avoid forgetting to give a dose to your cat and to remember when the course of treatment is completed.
- **If you can’t do it, ask about other options.** Giving medication injections to a cat requires skill, patience, and confidence. If you aren’t comfortable trying to give injections at
For long-term therapy (such as insulin), this may require a prolonged time commitment. For short-term medication, however, outpatient injections can be a very practical option.

### Basic Equipment

The “syringe” is the clear (usually plastic) cylinder that holds the medication to be injected. The “needle” is the sharp, metal tip that is injected into the skin. The “plunger” is a stem that moves inside the syringe. Pull the plunger backward to fill the syringe and push it forward to empty the syringe. A new needle/plunger and syringe are sterile until they are opened. The bottle of injectable medication is also sterile. It is important to handle these items properly to avoid contaminating them. Your veterinary care team will show you how to properly open a syringe and draw up injectable medication without breaking sterility. Be sure to use a new syringe, plunger, and needle for each injection. Reusing syringes and needles can cause infection. Additionally, a used needle is dull and therefore more painful than a new needle.

### Proper Restraint

Some cats are happy lying or sitting on your lap while you administer the medication injection. However, you should place a towel or blanket across your lap (to avoid getting scratched) in case your cat tries to jump down. Some cats do better on a smooth surface, such as a table; the surface of a washing machine can simulate the smooth metal table at your veterinarian’s office and encourage your cat to remain still during the procedure. Additionally, some cats do better with two people administering the injection – one person to hold the cat and the other one to give the injection.

### Giving a Subcutaneous Injection

Your veterinary care team will show you how to administer an injection before you have to try it alone at home:

- Maintaining sterility, load the syringe with medication and set it close by.
- Find an area of loose skin. The skin over the middle of the back or just behind the shoulders generally works well. If the injection will be given frequently (as with insulin), try to alternate injection sites so you are not using the same location each time.
- Gently pinch a section of loose skin between your thumb and forefinger. When you pull the loose skin gently upwards, you should see a small indentation of skin between your fingers.
- Holding the syringe in the opposite hand, insert the sterile needle directly into the indentation. Keep the needle level (or parallel) with the surface of the skin on the back. If you angle the needle too much, you may enter a muscle, go through the skin to the opposite side, or stick your own finger.
- Once the needle has been inserted, pull back on the plunger only. If you see blood, remove the needle and try a different location. If not, push the plunger forward to empty the syringe.
• When the syringe is empty, remove the needle (backing out along the same path that was used to enter the skin).
• If there is no bleeding or leakage of medication, release the cat after giving him or her a big hug for being a good patient!
• Be sure to dispose of used needles and syringes properly.

**Giving an Intramuscular Injection**

There are a few precise areas on the body that are commonly used for giving intramuscular injections. You will need to find “landmarks” on your cat so that you know where to give the injection. Your veterinary care team will show you how to find an appropriate injection site and administer an intramuscular injection before you have to try it alone at home:

• Maintaining sterility, load the syringe with medication and set it close by.
• Find the injection site, using the techniques your veterinarian demonstrated for you. If the injection will be given frequently, try to alternate injection sites so you are not using the same location each time.
• Holding the syringe in one hand, insert the sterile needle directly through the skin and into the underlying muscle. The angle of the needle should be between 45° and 90°, depending on the injection site. If your angle is too shallow, you may not inject deeply enough to enter a muscle.
• Once the needle has been inserted, pull back on the plunger only. If you see blood, remove the needle and try a different location. If not, push the plunger forward to empty the syringe.
• When the syringe is empty, remove the needle (backing out along the same path that was used to enter the skin).
• If there is no bleeding or leakage of medication, release the cat after giving him or her a big hug for being a good patient!
• Be sure to dispose of used needles and syringes properly.

Ask your veterinary team to teach you how to administer medication injections safely. If you aren’t comfortable giving injections, ask about scheduling outpatient visits for the injections to be given.
Administering Medications to Your Cat

- Before you leave your veterinarian’s office with a new medication, be sure to address any concerns or questions with your veterinary team.
- It is very important to follow all label directions carefully.
- Do not risk being bitten, scratched, or otherwise injured while trying to medicate your cat. If you are unable to administer medication, your veterinarian may be able to offer other options.

Understanding the Medication Instructions

The first part of successfully administering medication to your cat is to ensure that you understand the instructions for giving the medication. These instructions include route of administration (for example, by mouth, into the ears, or into the eyes), dosing frequency (for example, once daily, every 12 hours, or every 8 hours), duration of treatment (for example, 7 days, until gone), and other special considerations (for example, give with food, follow with water).

Sometimes there is flexibility with medication instructions; for example, some medications can be given “as needed,” or a twice-daily dosing schedule may be adaptable to once-daily dosing. However, for other medications, the recommended dosing instructions need to be followed closely. Before you leave your veterinarian’s office with a new medication, be sure to address any concerns or questions regarding the medication with your veterinary team. For example, if your work schedule does not permit dosing every 8 hours, your veterinarian may be able to recommend a different medication that can be given less frequently. Ask about your pet’s expected response to the treatment.

It is very helpful to write a medication schedule for your pet on a calendar, including the date and time that the medication needs to be administered. This will help you to (1) avoid forgetting to give a dose and (2) remember when the course of treatment is completed. It is also very important to follow all label directions carefully. Improper storage (for example, keeping a refrigerated medication at room temperature) can affect the safety and effectiveness of medication. Additionally, it is important to give the medication for the correct length of time. Complications can occur if antibiotics are not given for the full duration of recommended treatment; in addition, some medications (such as corticosteroids) cannot be discontinued without causing illness, so it is very important to give medications as directed. If your pet experiences any medication-related side effects, contact your veterinarian promptly for advice before adjusting a dosage or discontinuing the medication.

Administering Pills

If you’ve never given a cat medication before, it can be difficult to know what method will work best. Some cats take pills very readily if the pill is hidden inside a treat or given with a small amount of canned cat food. Another option is canned tuna or salmon for people. Pills can also be crushed (or capsules broken and emptied) and mixed with a small amount of canned food. However, your cat must eat all of the food right away to ensure receiving the full medication.
dose. Also, some coated pills and capsules have a bitter taste if the capsule or coating is removed. If the medication makes the food taste badly, your cat may refuse to eat it. Before choosing one of these options, ask your veterinarian if the medication can be given with food. You will probably know after the first or second dosing if this method will work.

If you must give your cat a pill directly by mouth, here’s a method that usually works. This technique takes practice and may require more than one attempt to get your cat to swallow the pill. If your cat is not used to having your hands around his or her mouth (as with toothbrushing, for example), gradually introduce your cat to this by stroking your cat’s face and neck for a few moments. This should calm your cat. If you think that your cat may try to bite or scratch, do not attempt this technique; ask your veterinarian for alternative medication options:

- **Restraint:** If your cat is well-behaved, place a towel across your lap and hold your cat gently on your lap. If you think your cat may try to scratch you or get away, you may want to wrap his body, feet, and legs in a towel; leave the head out so that you can give the medication.
- **Hold the pill between the thumb and index finger of your right hand (if you are right-handed).**
- **Using your left hand, reach over the top of your cat’s head and squeeze your thumb and middle finger between your cat’s upper and lower teeth.** Try to stay close to the back of the mouth (near the molars) and away from the canines (the long, pointy teeth near the front of the mouth). If you’re doing this properly, the sides of the upper lip will curl in as your fingers curl in.
- **Once your fingers are inside your cat’s mouth, gently tilt your cat’s head back to encourage your cat to open his or her mouth.**
- **Once the mouth is open, use your right index finger and thumb to place the pill near the base of the tongue.** Then remove your hands quickly so your cat can swallow.
- **Rub your cat’s throat lightly to encourage swallowing.** Offering a small amount of water can also help.

**Administering Liquid Medication**

Some pet owners prefer liquid medication because administration does not require placing your fingers inside of your cat’s mouth. However, if your cat refuses to swallow the liquid, this method may not be ideal. Here are some tips for administering liquid medication:

- **Restraint:** If your cat is well-behaved, place a towel across your lap and hold your cat gently on your lap. If you think your cat may try to scratch or get away, you may want to wrap his or her body, feet, and legs in a towel; leave the head out so that you can give the medication.
- **Draw the medication into the dropper or syringe, and hold it in your right hand (if you are right-handed).**
- **Place your left hand behind your cat’s head to stabilize it.** You can gently stroke the back of the head and speak softly to your cat to distract and comfort him or her.
- **Using your right hand, insert the tip of the dropper or syringe into the side of your cat’s mouth.** Try to stay close to the molars and away from the canine teeth.
• Once the tip is inside, empty the medication into the mouth and release your cat’s head.
• Rub the throat lightly to encourage swallowing.

Troubleshooting Tips

If you are unable to administer medications to your cat, here are some suggestions that may help:

• **You may need help:** If your cat won’t cooperate with receiving medication, ask someone to help you restrain your cat while you control the head and give the medication.
• **Do not risk injury:** Do not risk being bitten, scratched, or otherwise injured while trying to medicate your pet. If you are unable to administer medication, call your veterinarian and request advice or assistance.
• **Ask your veterinarian if a different formulation is available:** Some medications are available in several forms, including pills, liquid given by mouth with an eye dropper or syringe, chewable flavored treats, and transdermal gels (the gel is absorbed into the bloodstream after being applied to the skin). If one formulation doesn’t work for you, ask your veterinarian if there is another option for the medication your pet is receiving.
• **Consider asking the pros:** Some veterinarians can arrange daily outpatient appointments for a technician or assistant to administer your cat’s medication. If your schedule doesn’t permit this, some veterinarians may be able to board your cat so that medication can be given until the course of treatment is completed.
Administering Subcutaneous Fluids to Your Cat

- The procedure of injecting a sterile fluid solution directly under the skin is referred to as subcutaneous fluid administration.
- The advantages of the subcutaneous fluid route include a lower cost (compared with the intravenous route) and ease of administration.
- Your veterinary health team will work with you to make sure you know how to give subcutaneous fluid injections without injuring yourself or your cat.

What Are Subcutaneous Fluids?

Fluid administration is a regular part of veterinary medical care. Any time that a patient is dehydrated or needs fluids, your veterinarian determines the best way to provide them. Fluids can be given by mouth, injection into a vein (known as intravenous fluids or IV fluids), or injection directly under the skin – a procedure known as subcutaneous fluid administration.

If a pet is able to eat and drink, giving fluids by mouth may be an option. However, if the pet is vomiting, unwilling to drink, or unable to obtain enough fluids through drinking, other methods of fluid administration must be considered. To receive intravenous fluids, pets generally need to be hospitalized because only a small amount can be given at a time and the IV catheter (through which the fluids are given) requires special care and maintenance. However, subcutaneous fluids can be given in larger amounts over a relatively short period of time, so hospitalization is frequently not required. The injection of sterile fluid is given under the skin and absorbed slowly over the next several hours. Advantages of the subcutaneous route include a lower cost (no catheter is required, and hospitalization is often not necessary) and ease of administration.

When Are Subcutaneous Fluids Necessary?

Cats being treated for chronic kidney disease are the most likely to receive subcutaneous fluids on a regular basis. Your veterinarian may also recommend subcutaneous fluids for pets that are vomiting or unable (or unwilling) to drink adequate amounts of water. Examples may include cats receiving chemotherapy, cats with liver disease, or cats with a high fever.

Depending on the medical condition being treated, your veterinarian may recommend fluid injections daily, every other day, or a few times a week. The frequency of injections and the amount of fluids given at each injection may change over time, so be sure to keep a notebook detailing when fluids are given and how much.

Getting Started

Before you get started, your veterinary health team will work with you to make sure you know how to give the subcutaneous fluid injections without injuring yourself or your cat. If you aren’t comfortable or need additional training sessions, don’t be afraid to ask!

Here are a few things to consider:
• **Be sure you can handle your cat without being injured.** This may not be an issue if your cat is very compliant and is used to being handled. However, if you have had problems in the past trying to trim nails, give a pill, or perform other procedures on your cat, you may need help giving fluid injections. Talk to your veterinary care team about tips for properly restraining your cat for fluid injections before attempting your first session. In some cases, you may need another person to help hold your cat so that you can safely give the injection.

• **Don’t be afraid to ask questions.** Your team of veterinary professionals will be glad to answer any questions you may have about safely administering fluid injections to your cat.

• **Record your cat’s fluid schedule on the calendar.** Include the date and time that the fluids need to be administered. This will help you to avoid forgetting to give fluids to your cat and to remember when the course of treatment is completed.

• **It’s okay to leave fluid injections to the professionals.** Giving fluid injections to a cat requires skill, patience, and confidence. If you aren’t comfortable trying to give injections at home, ask your veterinary team if the injections can be done at your veterinarian’s office.

The new fluid bag, fluid line, and needles are sterile until they are opened. It is important to handle these items properly to avoid contaminating them. Your veterinary care team will show you how to assemble the fluid line and bag and to attach a fresh needle without breaking sterility. Be sure to change the needle after each injection; the fluid line can be changed when each bag of fluids is completed.

For the fluids to flow from the bag and into your pet, the fluid bag must be suspended over the area where your pet is sitting. Many pet owners use a bent wire coat hanger to hang the fluid bag over the top of a door; you can then sit in a nearby chair and hold the cat while fluids are being given.

**Proper Restraint**

Your cat may be happy lying or sitting on your lap while you administer the fluid injection. However, you should place a towel or blanket across your lap (to avoid getting scratched) in case your cat tries to jump down. Some cats do better on a smooth surface, such as a table; the top surface of a washing machine can simulate the smooth metal table at your veterinarian’s office, which might encourage your cat to remain still during the procedure. Additionally, some cats do better with two people administering the injection – one person to hold the cat, and the other one to give the injection.

**Giving the Fluid Injection**

Your veterinary care team will show you how to administer fluids before you have to try it alone at home:

• Find an area of loose skin; the skin over the middle of the back or just behind the shoulder blades generally works well.
• Gently pinch a section of loose skin between your thumb and forefinger. When you pull
the loose skin gently upward, you should see a small indentation of skin between your
fingers.
• Insert the sterile needle directly into the indentation. Keep the needle level (or parallel) to
the surface of the skin on the back. If your angle of injection is too sharp, you may enter a
muscle, go through the skin, or stick your own finger.
• Once the needle has been inserted, open the dial on the fluid line to begin administering
fluids. The procedure should take only a few minutes.
• When the desired amount of fluid has been given, remove the needle (backing out along
the same path that was used to enter the skin) and gently pinch the skin for a few seconds
to help prevent the fluid from flowing back out.
• If there is no bleeding or leakage of fluid, release your cat after giving him or her praise
and a big hug for being a good patient!

Ask your veterinary team to teach you how to administer fluid injections safely. If you
aren’t comfortable giving injections, ask about scheduling outpatient visits for the fluid
injections to be given.
Adopting Instead of Buying a Pet

- While estimates vary, approximately three to four million dogs and cats are euthanized (“put to sleep”) each year in the United States because too few people spay or neuter the pets they have, too few adopt their new pets, and too many give up their pets.
- By adopting a pet from an animal shelter or rescue group, you'll help save the lives of two animals—the pet you adopt and a homeless animal that can be rescued because of space you make available.
- Animal shelters and rescue groups have plenty of healthy, well-behaved animals waiting for a home.
- Adopting a pet from an animal shelter is much less expensive than buying a pet.
- Although many shelters and rescue groups have purebred animals, an adopted mixed-breed pet may be healthier than a purebred pet and, therefore, cost less overall.
- If you’re thinking of adding a pet to your household, there are many good reasons to adopt instead of buy one.

You'll Save Lives

While the estimates vary, approximately three to four million dogs and cats are euthanized (“put to sleep”) each year in the United States because too few people spay or neuter the pets they have, too few adopt their new pets, and too many give up their pets. Because space at shelters is limited, staff members must make the difficult decision to euthanize healthy animals that aren’t adopted within a certain amount of time.

The number of euthanized animals could be reduced greatly if more people adopted pets instead of buying them. By adopting from an animal shelter or rescue group, you'll help save the lives of two animals—the pet you adopt and a homeless animal that can be rescued because of space you make available.

You'll Get a Great Pet

Animal shelters and rescue groups have plenty of healthy, well-behaved animals waiting for a home. Most shelters examine and vaccinate animals when they arrive, and many shelters spay or neuter them before adoption. In addition to providing medical care, more and more shelters and rescue groups screen animals for specific temperaments (“personality” characteristics) and behaviors to match pets with prospective owners.

It is a common belief that animals end up in shelters because they were abused or behaved badly. In truth, most animals in shelters are there because of “people reasons”: divorce, moving, lack of time, and financial constraints are among the most common reasons why pets lose their homes. Adopted pets are just as loving, intelligent, and loyal as purchased pets.

You'll Save Money

Adopting a pet from an animal shelter is much less expensive than buying a pet at a pet store or through other sources. Buying a pet can easily cost $500 to $1000 or more; adoption costs range
from $50 to $200. In addition, animals from many shelters are already spayed or neutered and vaccinated, which makes the shelter’s fee a bargain.

Although many shelters and rescue groups have purebred animals, an adopted mixed-breed pet may be healthier than a purebred pet (purebred pets are more likely to have genetic problems) and, therefore, cost less overall.

**You Won’t Support Puppy or Kitten Mills**

Puppy and kitten mills are factory-style breeding facilities that put profit above the welfare of animals. Most animals raised in these mills are housed in poor conditions with improper medical care. They are often in poor health and have ongoing behavior and health problems due to lack of human companionship and inbreeding. Mill animals are sold to unsuspecting consumers in pet stores, over the Internet, and through newspaper classified advertisements.

By adopting instead of buying a pet, you can be certain that you aren't supporting puppy or kitten mills.

**You Can Choose a Pet of Any Age**

Although puppies and kittens are cute, they can require a lot of work to train. An adult or older pet that is already trained may be a better fit for your lifestyle. For example, adopting an adult dog that is already housetrained and knows basic commands is often much easier than adopting a puppy.

**You’re Likely to Have a Support System**

Most pet stores don’t provide any support if you have questions or problems with your new pet. However, rescue groups do provide support for new owners because keeping pets in good homes is in the best interest of these groups.

*Search for adoptable pets on Web sites like Petfinder.com and theshelterpetproject.org or contact your local shelter for adoptable pets in your area.*
Alkaline Phosphatase Level

- Although alkaline phosphatase is considered a “liver enzyme,” it is produced by other cells, too.
- Alkaline phosphatase levels can be affected by many things, including certain medications and a variety of illnesses.
- If your pet’s alkaline phosphatase level is abnormal, additional tests may be recommended to determine the cause.

What Is Alkaline Phosphatase?

Alkaline phosphatase (ALKP) is an enzyme that is produced by many cell types. Although it is considered a “liver enzyme,” it is mostly made by the liver and bones.

The ALKP level is an important part of a blood screening test (known as a chemistry panel), so it is often evaluated during routine wellness checkups or pre-surgery screening in healthy pets.

Because a variety of illnesses can affect the ALKP level, your veterinarian may recommend testing your pet’s ALKP level if your pet has any of the following signs of illness:

- Vomiting
- Diarrhea
- Appetite loss
- Lethargy (tiredness)
- Increased drinking and/or urination
- Weight loss or weight gain
- Abdominal pain or enlargement

How Is the Alkaline Phosphatase Level Measured?

To test your pet’s ALKP level, your veterinary team must obtain a small blood sample. This procedure is usually very quick; it may take only a few seconds if the patient is well behaved. For patients that are very frightened or not well behaved, your veterinary team may want to use a muzzle, towel, or other gentle restraint device. In some cases, such as in patients with very thick fur, it may be necessary to shave the hair from the area where blood will be drawn. The hair will grow back, and this is often a good way to find the vein quickly.

Sometimes, blood can be drawn in the examination room because some pets are comforted and well behaved when their owners are present. However, some pets are more excited and unruly when their owners are present, so your veterinarian may recommend that your pet be taken into a separate treatment area for blood to be drawn.

Some veterinary offices have in-house blood analysis equipment, so they can perform the test for ALKP in the office and have results the same day. Other offices send blood samples to an outside laboratory for the test to be performed. If an outside laboratory is used, results are generally available within 1 to 2 days.
Because a recent meal changes the blood and may affect the ALKP level, your veterinarian may recommend that your pet not eat for 12 hours before drawing blood to perform the test. In most cases, you can still give your pet water. Please let your veterinarian know if this temporary fast will be a problem for you or for your pet.

Be sure to tell your veterinarian about any medications or supplements your pet may be receiving, as some products can alter the ALKP level.

**What Does the Alkaline Phosphatase Level Tell Your Veterinarian?**

Many factors can affect the ALKP level. Certain medications, such as steroids, can cause this level to increase. Additionally, a variety of medical conditions can affect the ALKP level.

There are no significant medical conditions that cause the ALKP level to be too low. Most of the conditions that affect this enzyme cause the blood level to become elevated. The following are a few conditions that cause an elevated ALKP level:

- Rapid growth (young animals)
- Pancreatitis (inflammation of the pancreas)
- Gall bladder disease
- Hepatitis (inflammation of the liver)
- Liver failure
- Cancer affecting the liver or bones
- Hyperadrenocorticism (Cushing’s disease)
- Diabetes
- Toxic injury to the liver

If your pet has an abnormal ALKP level, your veterinarian will combine that information with other vital information about your pet to decide if further diagnostic testing is recommended to investigate the abnormal result. Depending on your pet’s overall condition, your veterinarian may recommend medications, diet therapy, or other management.

If your pet has a history of having an elevated ALKP level (with or without signs of illness), your veterinarian may recommend rechecking the level at some point to monitor whether it is changing. Additional testing may be advised if the level does not return to normal.

**Are There Risks Associated With Testing the Alkaline Phosphatase Level?**

There are very few risks associated with testing the ALKP level. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.
Allergy Testing

- Allergy testing is most commonly performed to determine if a pet has atopy, also known as atopic dermatitis or allergic inhalant dermatitis.
- Allergy tests can help identify the specific allergens causing a pet’s allergy problem. Once a list of “problem” allergens is identified, a specialized serum containing small quantities of these allergens can be formulated specifically for your pet.
- Allergy testing poses minimal risk for your pet, and in many cases the information your veterinarian gains from this testing is invaluable.

What Allergies Can Pets Have?

The most common types of allergies in pets are flea allergy, food allergy, and a condition called atopy. Atopy is sometimes called atopic dermatitis or allergic inhalant dermatitis, and it occurs when allergens that are inhaled or that contact the skin cause an allergic reaction in the body. In dogs (and, less commonly, cats), this allergic reaction is focused largely in the skin. Animals with atopy become very itchy; the resultant scratching can lead to skin injuries and subsequent skin infections. Atopy is usually first noticed in dogs younger than 3 years of age, although older pets can also be affected. Unfortunately, some pets that develop atopy continue to have problems throughout their lives.

Many types of allergens can cause a pet to develop atopy. A wide variety of pollens, grasses, dander, insect proteins (such as in cockroaches), molds, and even house dust can cause animals to develop atopy. Animals can even develop allergies to multiple allergens at the same time. Once an animal develops atopy, the condition will continue as long as the animal is exposed to the allergen that is the source of the problem.

How Is Allergy Testing Performed?

Allergy testing is most commonly performed to determine if a pet has atopy. Allergy testing can also help diagnose flea allergy dermatitis. Most veterinarians do not use allergy testing to diagnose food allergies.

The two most common types of allergy tests used in pets are intradermal skin testing and serum allergy testing:

*Intradermal skin testing:* Intradermal skin testing can sometimes be performed at your veterinarian’s office. However, because the allergens used for this test are very specific (they vary depending on where you live), your veterinarian may refer you to a veterinary dermatologist for this test to be performed. Usually, an area of fur is shaved from your pet’s side or abdomen to expose enough skin to perform the test. Using very small needles, tiny amounts of each test allergen are injected just under your pet’s skin in different areas. After a brief waiting period, the injection sites are examined to measure the degree of local allergic response, such as redness or a small hive. Allergens that your pet is not allergic to will not cause a reaction, while allergens that your pet is allergic to will cause a reaction
that corresponds to the severity of the allergy. Pets are monitored carefully during the procedure in case a serious reaction occurs and treatment is required.

_Serum allergy testing:_ Serum allergy testing is performed at a laboratory using a small blood sample taken from your pet. Your veterinarian does not need to shave your pet or have special allergens on hand to perform this test. As with intradermal skin testing, the results of serum allergy testing can reveal which allergens are not causing an allergic reaction in your pet, which ones are causing a mild reaction, and which ones are causing a more serious reaction.

Depending on which type of allergy test is performed, you may need to discontinue your pet’s allergy medications for a period of time before the test. Otherwise, the test results may be affected. Your veterinarian will tell you which medications can be used and which ones may need to be discontinued.

**What Does Allergy Testing Tell Your Veterinarian?**

Allergy tests can help identify the specific allergens that may be at the root of a pet’s atopic dermatitis. Once a list of “problem” allergens is identified, a specialized serum containing small quantities of these allergens can be formulated specifically for your pet. Through injection of small amounts of the allergy serum over time, many pets experience a reduced response to the allergens. This treatment, called _immunotherapy_, generally must be continued for several months to years to achieve results. With immunotherapy, the pet owner usually administers the allergy serum injections at home. If you are uncomfortable giving the injections, ask your veterinary care team if the injections can be given at your veterinarian’s office. The first injections are more diluted, containing only tiny amounts of the problem allergens; each subsequent injection solution contains a slightly higher concentration of the allergens. Your veterinarian will schedule the injections according to specific guidelines—more frequently in the beginning, and eventually tapering to one injection every few weeks. Many pets respond to this program. Others may not, especially if they have other underlying conditions.

**Is Allergy Testing Safe?**

Very few risks are associated with performing allergy testing. If serum allergy testing is performed, drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.

If intradermal skin testing is performed, there is a slight risk of an allergic reaction if your pet responds seriously to some of the allergens being tested. However, pets are monitored very closely during the testing procedure, and if a reaction occurs, medications can quickly be administered to treat the problem.

In general, allergy testing poses minimal risks for your pet, and in many cases, the information your veterinarian gains from this testing is very valuable.
Alopecia

- Alopecia (hair loss) can occur when hair fails to grow at a normal rate or when hair is lost more quickly than it can grow back.
- Alopecia can result from a variety of medical conditions, including skin infections, hormonal diseases, and infestations with fleas or mites.
- Many causes of alopecia are treatable. If the hair follicle has not been permanently damaged or destroyed, the hair will grow back over time.

What Is Alopecia?

Alopecia is the medical term used to describe hair loss. Alopecia can occur when hair fails to grow at a normal rate, or when hair is lost more quickly than it can grow back. Alopecia should not be confused with increased shedding. Shedding (even year-round shedding in some pets) is a normal process and is not an illness. Shedding should only be a cause for concern if it is heavy enough to create areas of thinning hair or baldness consistent with alopecia.

What Causes Alopecia?

Hair growth occurs in a cycle and depends on a healthy, functioning hair follicle. Once a hair grows, it is maintained within a hair follicle until a new hair grows to replace it. When this occurs, the old hair is shed and the new hair is held within the hair follicle until it is shed and replaced in its turn. If hair follicles are damaged, destroyed, or affected by inflammation or infection, hair loss can occur and hair regrowth can be hindered. When this happens over a large enough area, alopecia or baldness can be observed. Alopecia can be caused by a variety of conditions. Conditions that can affect the hair follicle directly include the following:

- Demodectic mange (caused by microscopic Demodex mites living in the hair follicle)
- Ringworm (a fungal infection that causes skin flakes/cells and fungal organisms to clog the hair follicle)
- Pyoderma (a bacterial skin infection in which skin debris, bacteria, and inflammatory cells clog and damage the hair follicle)
- Seborrhea (a skin condition in which excessive flaking of skin cells causes clogging of the hair follicle)
- Glandular or hormonal diseases (such as thyroid disease and adrenal gland disease, in which the hair growth cycle is disrupted because of hormonal changes; secondary skin infections or seborrhea can also occur)

Alopecia can result when a pet damages its skin or pulls out its hair. Fleas, for example, can cause itchy pets to pull out their hair and create bald patches. Pets that are allergic to fleas experience even more intense itching and can remove their hair, create wounds on their skin, and develop secondary bacterial infections from repetitive scratching and biting.

Cats can experience psychogenic alopecia, which is a compulsive grooming behavior often caused by stress or changes in the household. Cats with this condition may groom the hair on their flanks and back limbs until bald areas are created.
There are rare cases of congenital alopecia (meaning the pet was born with abnormally functioning hair follicles), and some breeds, such as dachshunds, can develop pattern baldness on their ears or elsewhere on the body.

**What Are the Clinical Signs of Alopecia?**

The most obvious clinical sign of alopecia is thinning of an area of hair, or hair loss significant enough to create bald spots. Other changes on the skin may help your veterinarian determine the cause of the alopecia. These include scabs, redness of the skin, excessive crusting or discharge, dandruff, or wounds. In some cases, such as with thyroid disease or other glandular conditions, the skin may look relatively normal except for hair thinning or hair loss.

Pets with alopecia may or may not have itching. In some cases, the hair may pull out very easily when the pet is touched.

**How Is Alopecia Diagnosed?**

A medical history and physical examination findings can provide valuable information for your veterinarian. The medical history may include trying to determine how long the hair loss has been going on and whether any other signs of illness have been observed. Physical examination findings may reveal evidence of underlying illness. For example, a dog with thyroid disease may be overweight and have a slower than normal heart rate, or your veterinarian may find fleas or “flea dirt” (flea feces) on a pet that has a flea infestation.

A diagnosis of alopecia means trying to identify an underlying cause. Your veterinarian may recommend specific tests to obtain more information about the condition of your pet’s skin:

- **Fungal culture**: If ringworm is suspected, your veterinarian can pluck a few hairs from several areas on your pet’s skin and place the hair samples on a culture medium (a substance that is used to grow microscopic organisms). This can be tested to confirm a diagnosis of ringworm.
- **Skin scraping**: If your veterinarian suspects demodectic mange, samples of skin associated with the hair follicle can be tested. This involves using a scalpel blade to gently scrape several hairless areas of skin. Because these mites live deep inside the hair follicle, the skin scraping must be deep enough to cause minor bleeding in order to capture samples that contain mites. These samples can be examined under a microscope to check for mites.
- **Cytology**: Using a swab, or by gently touching the flat surface of microscope slide to the skin, samples of skin flakes and debris can be obtained for examination under a microscope to determine what types of inflammatory cells, skin cells, or bacteria may be present.
- **Bacterial culture**: If the skin is infected or wounds are present, your veterinarian may collect some of this material to identify specific bacteria.
- **Skin biopsy**: Using local anesthesia (or possibly sedation or general anesthesia) your veterinarian may want to obtain a small sample of skin tissue. This can be submitted to a
diagnostic laboratory for examination of the skin cells, hair follicles, and other structures within the skin.

If your veterinarian suspects that alopecia may be caused by skin allergies, he or she may recommend a test to determine what the pet may be allergic to. Similarly, if an illness such as thyroid disease is suspected, blood testing or other specific diagnostic tests may be recommended.

**How Is Alopecia Treated?**

Treatment for alopecia should involve treating the underlying cause. Fortunately, flea infestation, mange, pyoderma, and many other causes of alopecia are treatable conditions. Medications given by mouth (such as antibiotics or antifungal medications), medicated shampoos, and products to control fleas may be recommended.

Once the underlying problem has been addressed, the hair follicles recover over time. If the hair follicles have not been permanently damaged or destroyed, the hair will grow back. However, if a skin infection or other skin trauma has been severe enough to damage or destroy hair follicles, areas of baldness may remain.
Anal Sac Disease

- All dogs and cats have two anal glands located beside their anus. These glands are often called anal sacs.
- Most animals express their anal sacs when they defecate.
- Some animals experience a build up of fluid in their anal sacs, which can lead to discomfort and itching.
- Anal sacs can become infected or abscessed (pus-filled and inflamed), which can require medical treatment or surgery.

What Are Anal Sacs?

Anal sacs are a set of glands that are just under the skin near your pet’s anus. The two glands are located at the 4:00 and 8:00 o’clock positions from the anus. The anal sacs fill with a foul-smelling fluid that is normally expressed through a tiny duct when animals defecate. Animals may use their anal glands to mark territory or repel aggressors, although a nervous dog or cat may accidentally express these glands when frightened.

If an animal cannot naturally empty an anal sac during defecation, the sac fills with fluid, becoming increasingly swollen. This is called an impacted anal sac, which can become painful and irritating to the animal. Some pets drag or “scoot” on their rear end to try to relieve pain and empty the glands. Pets may also lick the area to relieve discomfort.

If impacted anal sacs are not emptied, they continue to swell with fluid, leading to inflammation. Eventually, the area becomes infected, and an abscess (pus-filled inflammation) can form. In some cases, the abscess can rupture through the skin. This condition can be extremely painful to the pet and requires immediate medical treatment. In some cases, particularly if the problem happens several times to the same animal, surgical treatment may be recommended.

Anal sacs can also develop tumors that can be malignant (cancerous), which means that the cancer can spread to other areas of the body.

Signs of Disease

- Scooting on the rear end
- Licking, chewing, or “chasing” the anal area
- A foul odor around the anal area
- Swelling or bleeding around the anus
- Straining to defecate
- Pain during defecation

Diagnosis

Your veterinarian can diagnose many anal gland issues by examining the area and feeling the glands. For pets that are in a lot of pain, sedation may be recommended so that a thorough examination can be performed. During the examination, your veterinarian will look for redness,
signs of pain, swelling, or the presence of pus, which indicates infection. If a thickening, lump, or growth is present, your veterinarian may recommend a biopsy (collecting and testing a small sample of tissue) to help determine whether the tissue is cancerous.

**Treatment**

*Expressing the anal sacs* describes the manual removal of fluid that has accumulated in the anal glands. This can be performed at the veterinary hospital or even at home by a pet owner after careful instruction. Some groomers routinely express anal sacs before bathing pets. If a pet is having any type of problem with the anal sacs, it is best to let a veterinarian examine the pet and express the sacs if necessary.

Examination gloves should be worn when attempting to express anal sacs. The technique involves placing a paper towel over the anal area and gently squeezing with the thumb and index finger to remove the fluid. Care must be taken to avoid rupturing the sac or otherwise injuring the pet’s rectum or anus. If you are unsure of whether or how to express your pet’s anal sacs, ask your veterinarian to perform this procedure on your pet.

If the anal glands are infected or abscessed, your veterinarian will empty the glands to remove the fluid. Your veterinarian may also flush out the sacs with antiseptic solution and insert ointment to relieve pain and inflammation. Antibiotics, pain medication, and medication to relieve inflammation may also be prescribed.

Surgical removal of the anal glands may be recommended for animals that have had repeated anal gland issues or infections. Your veterinarian will talk to you about the benefits and risks of this procedure and whether it may be a good option for your pet.

**Prevention**

The best way to prevent anal sac issues is to frequently express the anal sacs if they are not emptying on their own. This helps prevent the sacs from filling with fluid. Some experts recommend adding fiber to the pet's diet, which helps naturally express fluid from the anal sacs.
Anemia in Cats

- Anemia in cats has many possible causes, and it can range in severity from mild to severe. Severe anemia is life threatening and requires immediate veterinary care.
- Anemia results from a loss or destruction of red blood cells or from a failure of the body to produce enough red blood cells. Red blood cells carry oxygen throughout the body; therefore, anemia can cause lethargy (tiredness) and exercise intolerance (difficulty exercising).
- Anemia is not contagious. However, anemia can be caused by infectious diseases that can be transmitted from cat to cat either through fighting and bites or sharing water and food bowls.
- Immediate treatment for severe anemia may require a blood transfusion to replace lost red blood cells. Prognosis and treatment are based on the cause of the anemia.
- Certain causes of anemia may be preventable. For example, to reduce the risk of infectious diseases, keep your cat indoors. If your cat does go outdoors, ask your veterinarian what vaccines are recommended.

What Is Anemia?

Anemia develops when the number of red blood cells in the bloodstream is reduced. Red blood cells carry oxygen throughout the body.

There are many different causes and types of anemia. Anemia may result from blood loss, the destruction of red blood cells within the body, or the inability of the body to produce enough red blood cells. The type of anemia depends on its cause. For instance, a severe injury that causes bleeding externally or internally can result in blood loss that causes anemia. Other causes of anemia include:

- Infection with a virus, such as feline leukemia virus (FeLV) or feline immunodeficiency virus (FIV), or with a parasite (*Mycoplasma haemophilus*)
- Blood loss from severe flea infestations (especially in kittens)
- Immune-mediated disease (a condition in which the body’s immune system attacks its own red blood cells)
- Bleeding into the gastrointestinal tract as a result of disease or severe inflammation
- Reaction to certain drugs
- Exposure to certain toxins
- Cancer (may decrease red blood cell production or lead to bleeding from a tumor)
- Kidney disease (may lead to a decrease in red blood cell production)

Signs of Anemia in Cats

- Lethargy (tiredness)
- Decreased appetite
- Exercise intolerance (difficulty exercising)
- Pale mucous membranes (gums, inner eyelids)

**How Is Anemia Diagnosed and Treated?**

A simple blood test can diagnose anemia. Most veterinarians can perform a quick blood test called a *packed cell volume* (PCV) in the hospital. The PCV indicates the volume of red blood cells in the bloodstream. If your cat’s PCV is lower than the normal range, anemia is diagnosed. Your veterinarian will also take a complete history and consider physical exam findings, including whether your cat has a fever.

Other blood tests can offer more detailed information regarding the anemia, such as whether the body is producing new red blood cells to replace the lost or destroyed red blood cells. Another test looks at the structure of the red blood cells to help determine suspected causes of the anemia. A CBC (complete blood cell count) is also an important test when evaluating a cat for anemia. This test looks at red blood cells, white blood cells (which fight infection and contribute to inflammation), and platelets (which help with proper blood clotting.)

It is extremely important to identify the cause of the anemia so that proper and effective treatment may be given. Therefore, your veterinarian may recommend other diagnostic tests, including blood tests to check liver and kidney function and to determine exposure to FeLV, FIV, *Mycoplasma haemophilus*, and certain diseases. Taking radiographs (x-rays) of the chest and abdomen can help check for tumors that may be bleeding, and an ultrasound of the abdomen can help check for fluid (blood), signs of cancer, or liver, kidney, intestinal, or pancreatic disease.

In cases of anemia resulting from sudden loss of a large amount of blood, or severe anemia from blood loss over time, a blood transfusion may be recommended (or required) for survival. Severe anemia results in a significantly reduced ability of the blood to deliver oxygen throughout the body and, most importantly, to vital organs such as the brain. Therefore, a blood transfusion is necessary to help deliver oxygen and nutrients to major organs and other parts of the body. Occasionally, multiple transfusions are required before the cat’s body can produce enough red blood cells on its own.

Other treatments for anemia are determined based on the diagnosis of the underlying cause.

**How Can I Prevent Anemia?**

Prevention of certain causes of anemia may be aided by basic care and maintenance. You can decrease your cat’s risk of exposure to FeLV and FIV by keeping him or her indoors and away from stray or unknown cats. If your cat does go outside, ask your veterinarian what vaccines are recommended. Avoid leaving cat food outside, as this often attracts other cats and wildlife that may transmit disease. If your cat lives inside only, ask your veterinarian what he or she recommends regarding the FeLV vaccine.
You can reduce the risk of diseases transmitted by fleas with the regular use of veterinarian-approved flea and tick control products. Discuss with your veterinarian the best plan for flea and tick prevention. Flea prevention is very important for indoor cats as well.

Monitor your cat’s daily habits, including food and water intake and litterbox use. If you notice changes such as a marked increase in water consumption or urination, unexpected weight loss, or blood in the stool or urine, have your cat evaluated by your veterinarian and discuss the changes you have observed. These signs may be indicators of diseases that may lead to anemia or other problems.
Antibiotic Therapy for Ear Infections

- Any pet can develop an ear infection; underlying allergies or other illnesses are often the cause.
- Bacterial infection generally occurs secondary to the inflammation and unhealthy environment in the ear.
- A typical course of antibiotics can be as brief as 5 to 7 days, or as long as several months. It is best to give all medications as directed for the full course of treatment, even if the ears look better right away.

What Is an Ear Infection?

The medical term for an ear infection is *otitis*. Ear infections generally begin as inflammation of the skin inside the outer ear canal (the tube-shaped part of the ear visible under the ear flap). Once inflammation is present, discharge, redness, and other characteristics of an ear infection become established. Inflammation of the canal leads to the overgrowth of normal bacteria and yeast that live in the ear; other “opportunistic” bacteria can also take advantage of the inflammation and unhealthy environment inside the ear to establish infection. The overgrowth of these organisms causes more inflammation and other unhealthy changes inside the ear. In some cases, ear infections that start in the outer ear canal can progress to involve the middle ear and inner ear. Deep infections can lead to deafness and other complications.

What Causes Ear Infections?

Any pet can develop otitis regardless of ear shape, exposure to water (swimming), or the amount of hair inside the ear canal. Ear infections in dogs and cats are most often the result of an underlying problem. Many conditions can predispose a pet to developing an ear infection, including the following:

- Allergies (food allergy or inhalant allergy)
- Ear mites
- Polyps or other growths in the ear canal
- Systemic illnesses such as thyroid disease and adrenal gland disease (in dogs)
- Foreign material in the ears, including dirt, sand, or plant material

Ear infections are painful. Some pets with this condition may even try to bite people who try to touch their ears or head (including their owners). The clinical signs of otitis can vary depending on the severity of the inflammation, but can include the following:

- Shaking the head or rubbing the head and ears on the floor or on furniture
- Scratching the ears
- Discharge from the ears (can sometimes have a very bad odor)
- Redness of the ear canal and ear flap; the ears may also feel warm when touched

Some pets with severe otitis may cry or groan as they rub and scratch their ears. Some pets scratch so severely that their nails create wounds on the skin around their face, neck, and ears. If
the otitis is severe or chronic, the outer ear canal can begin to thicken and become deformed. This thickening can make the ear opening very narrow, so cleaning the ears becomes more difficult. Ulcerations on the inside of the ear canal can also result from infection and trauma.

If a chronic or severe otitis progresses to involve the middle or inner ear, more severe clinical signs can occur, including development of a head tilt, incoordination, inability to stand or walk, and increased pain.

**Why Are Antibiotics Necessary to Treat Ear Infections?**

Once the inflammation associated with an ear infection is established, bacteria (and yeast) can create secondary infections. These infections can be relatively straightforward to diagnose and treat with antibiotics or antifungal medications. Still, the underlying reason for the inflammation must be addressed, or the secondary infections are likely to recur. Diagnosing the underlying cause can be challenging and may require additional testing.

During a physical examination, your veterinarian may use a cotton swab to collect some debris from your pet’s ear. This material can be placed on a slide and examined under a microscope to determine if the infection is due to yeast, bacteria, or mites. Your veterinarian may also recommend bacterial culture and sensitivity testing of the debris found inside your pet’s ear. This information can help determine the best medications to treat the infection.

Your veterinarian will also likely clean your pet’s ears to remove as much debris as possible before treatment begins. Cleaning begins creating a healthier environment inside the ear—an environment that will not continue to support bacterial overgrowth.

**How Are Antibiotics Given?**

In many cases, antibiotic medication for an ear infection can be applied (usually as an ointment or drops) directly into your pet’s ear. Sometimes, oral antibiotics or antifungal medication (for yeast) may also be recommended. Your veterinarian may also administer an injection of antibiotics in the office to start treating the infection quickly (while oral or topical medication is taking effect). Oral or topical steroids may also be prescribed to help reduce swelling and inflammation and to make your pet more comfortable with having his or her ears handled.

Antibiotics for ear infections are available in many formulations, so notify your veterinarian if you are having problems medicating your pet, because there may be other options available. You should also notify your veterinarian right away if your pet seems to be experiencing any side effects from medication.

A typical course of antibiotics for treating an ear infection can be as brief as 5 to 7 days or as long as several months. In many cases, the ears may start looking better after only a few applications of medication or after only a few doses of oral medication. However, it is advised to give all medications as directed for the full course of treatment. Your veterinarian may recommend recheck exams during the course of treatment, to monitor how well the condition is responding to therapy. Notify your veterinarian right away if your pet’s ears begin to look worse,
if the problem seems to return after treatment is completed, or if other signs of illness are observed.

**How Can Future Ear Infections Be Prevented?**

Once an infection has resolved, regular cleaning helps prevent recurrence by promoting a healthy environment inside the outer ear canal. Never insert a cotton swab into your pet’s ear canal; these swabs can rupture the eardrum, which could lead to additional complications. If you are uncomfortable cleaning your pet’s ears, ask your veterinary team to review ear cleaning procedures with you.

Underlying conditions, such as allergies, should also be addressed to help prevent recurrence of ear infections.

Returning for regular check-ups with your veterinarian is also an important way to track your pet’s progress and catch ear infections early before they have a chance to get firmly reestablished.
Antifreeze Toxicosis

- Antifreeze poisoning occurs when pets drink antifreeze containing ethylene glycol.
- The liver quickly breaks down ethylene glycol into toxic products that can lead to kidney failure and death.
- Even a small amount of antifreeze can be fatal to dogs and cats.
- Antifreeze poisoning is a medical emergency, and early treatment is crucial.
- Signs include: staggering, vomiting, increased drinking and urination, and seizures.
- Diagnosis is generally based on the results of blood and urine tests.
- Treatment may include the induction of vomiting, medications to prevent the absorption and metabolism of ethylene glycol, and fluid therapy.

What Is Antifreeze Poisoning?

Most antifreeze solutions contain high levels of ethylene glycol, an ingredient that, once metabolized, is extremely toxic to dogs and cats. Pets are often attracted to the liquid because of its sweet taste. Even small amounts can be lethal to animals. A cat that walks through spilled antifreeze and then licks its paws may ingest enough to be fatal. As little as 2.5 tablespoons of antifreeze could kill a 20-pound dog.

Once ingested, ethylene glycol is quickly broken down in the liver to other substances that can lead to kidney failure and death within 12 hours to a few days. That’s why antifreeze ingestion is a medical emergency. If you suspect that your pet has consumed antifreeze, contact your veterinarian immediately.

What Are The Signs Of Antifreeze Poisoning?

The signs of antifreeze poisoning vary, depending on the amount of antifreeze the pet drank and length of time since ingestion. Initially, pets may stagger or walk like they are drunk. Other signs include:

- Lethargy (tiredness), depression
- Nausea, salivation (drooling)
- Vomiting (often the fluorescent green color of antifreeze)
- Increased drinking
- Increased urination

As time progresses, signs may include:

- Rapid breathing
- Seizures
- Little or no urination
- Coma
**How Is Antifreeze Poisoning Diagnosed?**

Antifreeze poisoning is generally diagnosed based on the results of blood and urine tests. However, as kidney failure sets in, these tests may be less accurate. Free-roaming pets that have signs consistent with antifreeze ingestion should be treated as soon as possible.

**How Is This Condition Treated?**

To be effective, treatment needs to be initiated as soon as possible after antifreeze ingestion. If your pet is seen within an hour of consuming antifreeze, the veterinarian may induce vomiting and possibly anesthetize the animal to flush out the contents of the stomach. They may also administer a liquid solution of activated charcoal to help prevent further absorption of the ethylene glycol.

If it has been longer than an hour since ingestion, the veterinarian will most likely give your pet a medication to help prevent the liver from metabolizing the ethylene glycol. The pet may also be placed on intravenous fluids and other medications to encourage excretion of the toxic substances produced during metabolism of ethylene glycol.

Once kidney failure has begun, it may be difficult to save the animal because the damage from antifreeze is often irreversible.

**How Can I Protect My Pet From Antifreeze Poisoning?**

There are a number of steps you can take to prevent your pet from drinking antifreeze:

- Do not allow your pet to roam the neighborhood freely.
- Use antifreeze containing propylene glycol, which is less toxic than ethylene glycol.
- Do not allow your pet access to the area when you are draining radiator fluid.
- Clean up all antifreeze spills immediately.
- Store antifreeze containers out of the reach of pets.
- Check your car for antifreeze leaks frequently.
Aspirin Toxicosis

- High doses of aspirin can be poisonous (toxic) to dogs and cats; cats are more susceptible to aspirin toxicosis than dogs are.
- Toxic effects can occur within hours of the pet swallowing aspirin or may take a few days.
- Never administer a medication intended for humans to your pet unless instructed to do so by your veterinarian.

What Is Aspirin Toxicosis?

Aspirin has been considered a safe and reliable over-the-counter fever and pain medication for decades. Because aspirin is considered very safe, some pet owners give aspirin to their pets. There are also aspirin formulations specifically for dogs. However, high doses of aspirin can be dangerous for dogs and even more hazardous for cats. Aspirin toxicosis occurs when a cat or dog swallows enough of the drug to cause damaging effects in the body.

Aspirin is broken down primarily by the liver, and some of the resulting substances are later eliminated by the kidneys through urine. Because cats lack certain proteins that are needed for the liver to safely break aspirin down, aspirin’s effects last longer in cats than in dogs (5 to 6 times longer). The risk of aspirin toxicosis is also higher in cats.

How Does Aspirin Toxicosis Occur?

Many cases of aspirin toxicosis in dogs and cats are accidental. A pet may find and chew on a bottle of pills or eat a pill that has fallen on the floor. Sadly, some cases occur because pet owners give medication intended for humans to their pet without being instructed to do so by a veterinarian. Some medications meant for humans, like Pepto-Bismol and oil of wintergreen, are related to aspirin and can cause aspirin-like side effects in pets.

There are situations in which your veterinarian may prescribe a specific dosage of aspirin for your dog or cat. Be sure to follow your veterinarian’s dosage directions very carefully, and report any vomiting or other problems right away.

What Are the Clinical Signs of Aspirin Toxicosis?

Signs of aspirin toxicosis can occur within a few hours; however, some signs can take a few days to appear. The most common side effect of aspirin toxicosis is stomach irritation. In mild cases, this may cause vomiting. In severe cases, it can cause the pet to vomit blood. The irritation can also be severe enough to cause stomach ulcers and stomach perforations (punctures in the stomach wall that allow stomach acid to leak into the abdomen). Aspirin also affects platelets—blood cells that help the body form blood clots and prevent bleeding. Aspirin toxicosis can cause such severe bleeding that blood transfusions can be necessary to save the patient. Aspirin toxicosis can also inhibit blood flow to the kidneys, which can cause kidney failure. Clinical signs associated with aspirin toxicosis can include the following:
- Vomiting (sometimes with blood)
- Diarrhea or black stools
- Dehydration
- Abdominal pain
- Increased respiratory rate
- Pale gums (secondary to blood loss)

Cats can develop anemia because of aspirin’s effects on their bone marrow. Severe liver damage can also occur in cats as a result of aspirin toxicosis.

**How Is Aspirin Toxicosis Diagnosed?**

Diagnosis of aspirin toxicosis is commonly based on a history of recently chewing or swallowing pills. Your veterinarian may recommend diagnostic testing, such as a chemistry panel and complete blood cell count (CBC), to assess the extent of the damage. If stomach perforation, liver damage, or kidney failure are suspected, additional diagnostic testing is warranted.

**What Is the Treatment and Outcome for Aspirin Toxicosis?**

If aspirin toxicosis is recognized right away, vomiting can be induced to remove the drug from the stomach before the body can absorb it. Another option may be to anesthetize the pet to flush out the contents of the stomach. Your veterinarian may also administer a special preparation of liquid activated charcoal to slow absorption of the drug from the stomach and intestines.

There is no specific antidote for aspirin toxicosis. Treatment may include blood transfusions, intravenous fluid therapy, medications to help protect or heal stomach damage, and other medications to help support and stabilize the patient.

Aspirin toxicosis can be fatal. However, pets can survive if the condition is recognized, diagnosed, and treated quickly.

Most cases of aspirin toxicosis are preventable. Never administer medications intended for humans to your pet unless instructed to do so by your veterinarian, and keep all medications in the home secured to help prevent accidental swallowing.
Atopy

- Atopy is a common cause of skin problems in dogs, but it is less common in cats.
- Atopy usually develops in animals younger than 3 years, but older pets can also be affected.
- Depending on the underlying cause, clinical signs may occur seasonally or year-round.
- Atopy may respond to medical management, but long-term treatment is often required.

What Is Atopy?

Atopy, or atopic dermatitis, is sometimes called *allergic inhalant dermatitis*. Atopy occurs when allergens that are inhaled or that contact the skin cause an allergic reaction in the body. In dogs (and less commonly, cats), this allergic reaction is focused largely in the skin. Animals with atopy become very itchy; the resultant scratching leads to skin injuries and secondary (subsequent) skin infections. Atopy is usually first noticed in dogs younger than 3 years, although older pets can also be affected. Unfortunately, pets that develop atopy are usually plagued by skin problems throughout their lives.

Many types of allergens can cause a pet to develop atopy. A wide variety of pollens, grasses, danders, insect proteins (such as in cockroaches), molds, and even house dust can cause animals to develop atopy. Animals can even develop allergies to multiple allergens at the same time. Once an animal develops atopy, the condition will continue as long as the animal is exposed to the allergen that is the source of the problem.

Signs of Atopy

Although atopy technically involves the entire body, clinical signs tend to involve the skin. Affected areas commonly include the face, armpits, groin, ears, and feet. Persistent itching causes the pet to lick, chew, scratch, and/or rub the skin, causing injury. Secondary bacterial or yeast skin infections are also common in pets with atopy. Clinical signs of atopy can include the following:

- Generalized scratching and rubbing
- Redness of the skin
- Hair loss from repeated biting, licking, chewing, and/or scratching
- Skin rash, infections, and irritation
- Scabs and bleeding
- Unusual odor
- Skin thickening and color changes
- Ear infections
- Scales and crusts on the skin

Some animals may have several of these clinical signs, whereas others may have only one—perhaps an ear infection.

Diagnosis and Treatment
Diagnosing atopy can be complicated, partly because other skin problems (such as flea allergy dermatitis) can look very similar. Your veterinarian will likely ask you questions about your pet’s medical history to try to determine how long the problem has been going on and whether the problem seems to be seasonal or year-round. Your veterinarian may also want to discuss your pet’s diet and any products that you may be using on your pet or in your home that could be involved. By considering your pet’s medical history, physical examination findings, and medical test results to help rule out other skin conditions (such as skin mites or flea allergy), your veterinarian may be able to make a tentative diagnosis of atopy.

**Allergy Testing and Immunotherapy**

Allergy tests can help identify the specific allergens that may be at the root of a pet’s atopic dermatitis. The two types of tests are an intradermal skin test and a serum allergy test.

**Intradermal Skin Testing**

Intradermal skin testing can sometimes be performed at your veterinarian’s office. However, because the allergens used for this test are very specific (they vary depending on your region of the country), your veterinarian may refer you to a veterinary dermatologist for this test to be performed. Usually, an area of fur is shaved from your pet to expose enough skin to perform the test. Tiny amounts of each test allergen are injected using very small needles just under your pet’s skin in different areas. After a brief waiting period, your veterinarian will examine the injection sites to measure the degree of local allergic response (redness or a small hive). Allergens that your pet is not allergic to will not cause a reaction, and allergens that your pet is allergic to will cause a reaction that corresponds to the severity of the allergy. Pets are monitored carefully during the procedure in case a serious reaction occurs and treatment is required.

**Serum Allergy Testing**

The other type of allergy testing, serum allergy testing, is becoming more popular. The test is performed at a laboratory using a small blood sample taken from your pet so that your veterinarian does not need to shave your pet or have special allergens on hand. As with intradermal skin testing, the results of serum allergy testing can reveal which allergens are not causing an allergic reaction in your pet, which ones are causing a mild reaction, and which ones are causing a more serious reaction.

Depending on which type of allergy test is performed, you may need to discontinue your pet’s allergy medications for a period of time before the test. Otherwise, the test results may be affected. Your veterinarian will tell you which medications can be used and which ones may need to be discontinued.

Once a list of “problem” allergens is identified, a specialized serum containing small quantities of these allergens can be formulated specifically for your pet. Through injection of small amounts of the allergy serum over time, many pets experience a reduced response to the allergens. This treatment, called *immunotherapy*, generally must be continued for several months to years to achieve results. With immunotherapy, the pet owner generally administers the allergy
serum injections at home. If you are uncomfortable with giving the injections, ask your veterinary care team if the injections can be given at your veterinarian’s office. The first injections are more diluted, and each following injection has a slightly higher concentration of the allergens. Your veterinarian will schedule the injections according to specific guidelines—more frequently in the beginning, and eventually tapering to one injection every few weeks. Many pets respond to this program. Others may not, especially if they have other underlying conditions.

Other Treatments

Atopic dermatitis tends to be a long-term condition. Often, a combination of therapies is needed to provide comfort for pets with this condition.

Removing Allergens From the Environment

Ideally, if your pet is allergic to a specific item, such as wool, removing this item from your pet’s environment may be enough to resolve the allergy. Unfortunately, this is not always possible or practical, as some grasses and trees may be so common where you live that there is no way to reduce or eliminate your pet’s exposure to them. However, in many cases, helpful steps can be taken. For example, if your pet has a dust mite allergy, you should make your home environment as clean and dust free as possible. Some air filters can also help remove dust, pollens, and other airborne allergens from the home. Controlling other factors that can aggravate allergies is also recommended, such as consistent use of flea control products to reduce your pet’s exposure to flea bites.

Treating the Symptoms

For pets with atopic dermatitis, the itching can be relentless. Immunotherapy and other management options take time to work, so pets need relief in the meantime. Your veterinarian may want to discuss using the following medications to help control your pet’s itching:

- **Steroids**—Drugs like prednisone or dexamethasone, which are called *corticosteroids*, are often used as the first line of defense to relieve itchy skin because they tend to be very effective and safe for short-term use. These medications can be given by injection, by mouth, or as topical ointments or shampoos. Corticosteroids can provide immediate relief but may have undesirable side effects, such as increased appetite, thirst, and urination. In some cases, repeated or long-term use of steroids can be associated with an increased risk of medical problems such as liver problems, adrenal gland problems, and diabetes. For pets with atopy, steroids can often provide excellent short-term relief, but be sure to speak with your veterinarian about long-term options for your pet.
- **Antihistamines**—Drugs like diphenhydramine (Benadryl, Johnson & Johnson) have few side effects compared with corticosteroids. However, some pets will not respond to Antihistamines alone.
- **Fatty acid supplements**—Special fatty acid supplements may help reduce skin inflammation and are often used in combination with other medications.
• **Topical treatments**—Medicated shampoos, leave-on conditioners, and ointments can relieve your pet’s itching or help with secondary conditions such as fungal infections, bacterial infections, and scaling. Treatment should be repeated frequently for best results, but be sure to follow all label directions carefully. Avoid the use of human products on pets unless they are recommended by your veterinarian.

**Specific Treatment**

Cyclosporine can be used to control atopic dermatitis in dogs and allergic dermatitis (including atopy) in cats. The medication is given once a day for 4 weeks (4 to 6 weeks in cats, based on response). After that, the dose can be tapered to every other day or twice weekly, as needed to maintain effectiveness. Researchers estimate that over 70% of dogs and cats respond to this treatment; however, cyclosporine can be costly, and its side effects may include stomach upset and diarrhea. Ask your veterinarian if cyclosporine may be a good choice for your pet.
Avoiding Injury: Tips for Interpreting Signs of Aggression in Dogs

- Occasionally dogs will become fractious during handling; however, steps can be taken to minimize this potential problem.
- Minimizing dogs’ exposure to sudden changes in the environment and acclimating them slowly to changes is important.
- Proper restraint of your dog is crucial to avoid injury when handling dogs.
- Wear protective clothing such as sturdy shoes.
- Always have an exit strategy when working with dogs; occasionally, dogs will not tolerate handling and should be placed in a secure environment until they adjust to a new situation and calm down.

The Basics

While dogs have been domesticated by people for a long time, it is important to remember that they are still animals with a very strong instinct for “fight or flight” when danger is present. When presented with a threat, many dogs will try to escape; however, some dogs will choose to fight against the danger and may bite in response to the threat. It is important to follow certain safety guidelines when working with dogs to avoid injury for you and your dog. Remember, an adult large breed dog may weigh as much as a person, and all sizes of dogs have sharp teeth that can easily injure a person with minimal effort. In fact, small breed dogs weighing less than 25 pounds are more likely to bite than larger breed dogs.

Common steps to avoid injury include using proper restraint. This can vary depending on the dog, but at minimum, a strong collar and leash in good condition should be used when handling dogs. It is vital to have the dog in a secure environment (e.g. a room with a closed door or a fenced yard) and ensure that the dog’s collar is secure or the dog may be able to remove the collar and run away. In some cases, additional restraint such as a muzzle may be necessary.

Separating certain dogs such as non-neutered males and females or female dogs with puppies from other dogs on the property and using separate housing or crates is important. This will avoid exposing male dogs to female dogs in heat and the potential problems associated with their interaction. Female dogs with puppies are often very protective and may injure a person trying to interact with their puppies. In addition, only experienced people should handle non-neutered males or females with puppies. It also is important to approach dogs carefully and slowly, not staring at them because some dogs may bite when they feel threatened by someone approaching. It also is imperative to wear protective clothing around dogs, such as sturdy shoes, and avoid loose-fitting clothing that they can bite.

What to Do

Introduce dogs slowly to a new situation or to new dogs to avoid agitating them. However, it is not always possible to avoid new situations, so it is important to recognize the signs of an agitated dog, which can include barking, growling, a tail held in an erect position and waving
back and forth, pacing and erect hair around their shoulders. The dog’s ears may be erect or flattened against his/her head. An agitated dog may try to bite other dogs nearby, and if you approach, the dog may try to bite you.

Some dogs will show signs of fear such as avoiding your gaze, backing up as you approach, and hunching their back in a submissive position, but then lunge to bite you as you approach. This is called “fear biting” or “fear aggression.” If you notice this behavior, back slowly away from the dog to avoid escalating the situation. Then, try to determine what stimulus is causing the dog to appear fractious or agitated. Once you are able to identify the stimulus (e.g. a new dog in the area), remove the stimulus or wait a few minutes to see if the dog calms down. Most dogs will calm down once they adjust to the change in the environment, if given a few minutes to adjust. If the stimulus can’t be removed, it may help to distract the dog with dog food or a treat. Sometimes the dog needs to be walked away to another location. Do not stand in front of the dog; stand to the side if possible, out of the way of the dog’s head. If the dog is confined, it may help to leave him/her alone for a few minutes; many dogs will calm down after they adjust.

Prevention

Preventing dangerous situations is much easier than handling a dangerous situation, especially if you are a novice dog owner or handler. Working with an experienced dog owner or handler to learn precautions that are necessary for handling dogs is invaluable. Also, ask your veterinarian for tips. He/she is accustomed to handling dogs in difficult situations, such as when a dog is in pain. Many dogs will adapt to a new situation if given time; however, if your dog is highly fractious or dangerous to handle, it is important to contact your veterinarian for aid. Sometimes dogs can have diseases or pain that is causing the dangerous behavior.

Tips To Remember When Working With Dogs

- Introduce dogs slowly to a new situation or to other dogs to avoid agitating them.
- When introducing dogs to new people or to other dogs, all of the dogs should be kept on leashes. This facilitates separating them if they try to fight or attack.
- Recognize signs of an agitated dog (e.g. frequent barking or growling, tail held in an erect position and waving back and forth, pacing and erect hair around their shoulders, erect or flattened ears). Back away if possible; then identify the stimulus, and either remove it if possible or wait a few minutes to see if the dog acclimates to the stimulus.
- Ask your veterinarian for tips and work with an experienced dog owner or handler to learn precautions that are necessary for handling dogs; keep certain groups of dogs such as non-neutered males and females or female dogs with puppies separated.
- It is important to contact your veterinarian if your dog is highly fractious or dangerous to handle. There may be an underlying disease that is causing this behavior.
Avoiding Injury: Tips for Interpreting Signs of Aggression in Cats

• Most cats exhibit outward signs when they are unhappy or angry about something. Understanding those behaviors may save you from injury.
• Show children how to play gently with cats, and discourage them from chasing or restraining a cat.
• Never approach a strange cat. If you must interact with one, let it approach you.

Despite centuries of sharing our lives and homes with cats, many pet owners know very little about interpreting signs of anger, fear, or aggression in these creatures. The typical “Halloween cat” posture (arched back, raised fur, ears back, hissing) clearly indicates fear and/or aggression, but cats also use other postures and behaviors that are more subtle and easily missed. It may be impossible to avoid ever creating a hostile situation with a cat, but a few tips can help you (hopefully) avoid injury if you find yourself in such a situation.

What Are the Signs of Aggression in Cats?

Fortunately, most cats exhibit some sort of outward sign when they are unhappy or angry about something. Unfortunately, some of these signs can be very subtle and difficult to interpret:

• Avoiding eye contact, or staring directly at you
• Dilated pupils
• Head held down
• Sharply swishing the tail back and forth
• Raised fur along the neck, back, and tail
• Puffing up the tail
• Ears flattened against head or held back
• Hissing, growling

In some cases, the signs of trouble may occur very suddenly and without apparent warning. For example, petting-evoked aggression occurs when a person is petting a cat (usually while the cat is on their lap) and the cat seems to be enjoying the interaction, but then suddenly strikes out at or bites the person. The most logical explanation for this behavior is that some cats have a limited tolerance for being petted, so the best way to avoid this problem is to stop petting before that limit is reached. Unfortunately, the signs preceding the strike or bite may be very subtle—flicking the tail or ear may be the only indication of a problem. Understanding those behaviors for what they are may save the person from being injured.

What to Do

• **When in doubt, create distance.** If the cat is trying to get away from you, let it—as long as you can do this safely. If you are pursuing or restraining the cat in any way, stop. If a cat is fearful or aggressive, its natural response is usually to get away from you. As long as it can do that, the situation may not progress any further. Always leave a cat a way to escape a situation. Generally, if the cat can get away, it is less likely to attack or become more aggressive.
• **Keep your movements slow and your voice soft.** The cat is faster than you. Sudden movements or loud noises (like shouting) will startle a cat that is already afraid or annoy a cat that is already irritated.

• **Consult your veterinarian.** Painful conditions, hormonal influences, or other medical issues may cause your cat to be aggressive. Relieving these problems may help eliminate the behavior.

• **If you have time, try to learn what the cat likes or doesn’t like.** Some cats like to be picked up and held, but others absolutely refuse to accept this. This can seem contradictory when the same cat that doesn’t want to be picked up wants to be in your lap if you are sitting down. Often, interacting with cats involves negotiation—if picking up the cat is not going to work, don’t do it.

• **Educate children.** Without meaning to, children can be rough with cats or display other behaviors that may cause a cat to become fearful or aggressive toward them. Some children need to be shown how to play gently with a cat. Very young children may also pursue or restrain a cat that is trying to get away from them or pick up a cat that resents being picked up. These activities should be discouraged.

• **Introduce new pets slowly and under controlled situations.** If your cat is meeting another animal (whether a dog or another cat), try to have at least one of them on a leash. If a fight breaks out, the combatants can be pulled apart without having to reach into the fight to separate them. Also, don’t be surprised if it takes your cat a long time to accept a new pet. As long as the two pets can get away from one another and don’t have to compete for food or affection, fights can generally be avoided.

What Not to Do

• **Never pursue a cat that is trying to get away from you.**

• **Don’t approach strange cats.** If you must interact with them, let them approach you. If the cat is injured or in pain, it may be more likely to be aggressive, so if you have to pick the cat up to help it, use a towel or other means to protect yourself.

• **Don’t underestimate a cat’s ability to hurt you.** Yes, cats are small, but don’t think that their small size means they are not dangerous. Even a kitten can seriously injure you. Cats are blessed with incredible speed and flexibility. Unless they are declawed, all four feet are weapons, as is a mouth full of sharp teeth. Cat scratches and bites can transmit bacteria that lead to cat scratch fever, a disease with flu-like symptoms. Cat bites can also result in infection and severe tissue swelling. Always use caution when dealing with a cat you don’t know, even if the cat belongs to a friend or relative.
Bartonellosis (Cat-Scratch Disease)

- Bartonellosis (also known as *Bartonella infection*) is a bacterial disease that can infect many different species, including cats and humans. People with weakened immune systems are at increased risk of infection.
- *Bartonella* infection may cause chronic inflammatory conditions in cats, such as stomatitis (inflammation of the mouth), gingivitis (inflammation of the gums), and inflammatory bowel disease. Some cats may carry the disease but appear to be completely healthy.
- Bartonellosis is primarily transmitted to cats by fleas. It can be transmitted to humans from cats through a scratch or bite. The disease is rarely transmitted to humans by fleas.
- Treatment of bartonellosis includes administration of antibiotics and other medications, as necessary, to manage inflammation and pain.
- Regular application of flea and tick preventives, as recommended by your veterinarian, is important for helping prevent the spread of bartonellosis.

What Is Bartonellosis?

Bartonellosis is a disease caused by several bacteria of the *Bartonella* family. *Bartonella* organisms can cause bacterial infection in many species, including humans. Certain strains of *Bartonella* are known to infect cats. *Bartonella* organisms can be transmitted from a cat to a human via a bite or scratch, so bartonellosis in humans is commonly called *cat-scratch disease*.

Cats can become infected with *Bartonella* through exposure to infected fleas. For this reason, cats that roam outdoors are at greater risk for exposure. There is some evidence that ticks may also transmit the disease.

Some reports state that 12% to 50% or more of cats have been infected with *Bartonella*. The risk of exposure varies greatly depending on the region of the United States. Areas with warmer climates have a higher incidence of fleas and, therefore, a higher percentage of cats infected with *Bartonella*.

Signs of Bartonellosis

Many cats that have been exposed to *Bartonella* do not get sick and, therefore, do not show clinical signs of disease. However, these cats may still transmit the disease to humans. Clinically affected (sick) cats may have various clinical signs, including chronic inflammatory conditions that affect the eyes, mouth, respiratory tract, gastrointestinal system, and even the heart. More specific clinical signs may include:

- Uveitis (inflammation of a part of the eye)
- Stomatitis (inflammation of the mouth)
- Gingivitis (inflammation of the gums)
- Chronic upper respiratory disease (sneezing, nasal and eye discharge)
- Inflammatory bowel disease (chronic vomiting and/or diarrhea)
- Fever
Infected cats may show one or more of the signs listed above. It is very important to discuss these illnesses with your veterinarian because other diseases may also cause these signs.

Symptoms of bartonellosis in humans generally occur about 3 weeks after a cat scratch or bite and include fever and swollen lymph nodes along with a number of other possible symptoms. Consult with your physician regarding any concerns or questions about *Bartonella* infection.

**Diagnosis and Treatment**

Your veterinarian may perform a blood test on your cat to check for *Bartonella* infection. The test indicates the presence of antibodies, which the body uses to fight specific infections. A positive test result means that your cat has been exposed to *Bartonella*. If your cat is showing signs of disease and has a positive test result, your veterinarian may recommend antibiotics to treat the disease. There is controversy about whether to treat cats that test positive for *Bartonella* but are not showing signs of illness. It is best to discuss treatment options with your veterinarian.

**Prevention**

Regular application of flea and tick preventives, as recommended by your veterinarian, will help to prevent *Bartonella* infection.

To reduce risk of human infection from cats, keep your cat’s nails trimmed and do not tease or entice play that may result in a bite or scratch from your cat. If you have difficulty trimming your cat’s nails, take him or her to your veterinarian or a professional groomer for nail trimming.
Bathing Your Cat

Reasons to Bathe Your Cat

Cats, by nature, are very good groomers. They have pointy structures on the surface of their tongues, called *papillae*, which are designed to be an essential grooming tool. While they do a good job on their own, there are situations when your cat may need a bath:

- If your cat comes in contact with a potentially hazardous substance or sticky material
- If you are allergic and want to keep pet dander to a minimum
- If your cat goes/or gets outside and comes in contact with dirt or fleas

Preparing For A Bath

Even the calmest of cats may become stressed around water. Preparation prior to bath time will assist you in creating a low stress environment for the bathing process. Make sure you have shampoo labeled for feline use and appropriate age, a washcloth for wiping your cat’s face/head, and a soft towel to dry your cat after bathing. Also, wear appropriate clothing to shield your arms from scratching/biting.

It may be beneficial to have another person assist you in restraining your cat during the bath. If you are comfortable doing so, you can trim your cat’s nails the night before bathing to minimize the chance of scratches. If you have a long-haired cat, a good brushing prior to bath time will reduce the amount of loose/matted fur.

The Bath

1. We recommend using a bathtub or sink with a spray nozzle to assist in wetting and rinsing your cat. If you don’t have this, you can use a regular sink or tub by filling it with 3 to 5 inches of lukewarm water. Test the water to make sure it is not too hot or too cold for your cat.
2. If you are using a spray nozzle, wet down your cat’s entire body with warm water. Try to avoid getting water in the eyes, ears, and nose. If you are using a sink or tub without a spray nozzle, gently place your cat into the tub and use your hand or a washcloth to wet down the fur.
3. Carefully massage the shampoo into the fur, paying close attention to the labeled directions regarding the amount of product and length of time needed to effectively clean your cat. Don’t forget to lather those hard-to-reach areas, such as under the armpits. Avoid getting any shampoo in your pet’s eyes, ears, nose, or mouth. Use the washcloth to wipe the face/head with water.
4. Use the spray nozzle to rinse your cat thoroughly. If you are not using a spray nozzle, use the water in the tub to rinse the cat. Drain and refill the sink or tub a few times to make sure you have removed all of the shampoo from the fur.
5. Check the cat thoroughly for any areas that have not been well rinsed. Long-haired cats can take longer to rinse. Also, don’t forget to check the feet, under the chin, under the abdomen and chest, and any other areas that can be hard to rinse. Shampoo residues left on the skin and fur can be irritating; the cat may also lick them off later, which can cause illness.

6. When rinsing is complete, towel dry your cat. Since your cat will still be damp, be sure to keep your cat in a well-controlled climate until completely dry. You may also try to use a hairdryer, on a low setting, to assist in drying if your cat will tolerate it.

Caution!

If you use a blow dryer to dry your cat, make sure the dryer does not get too hot.
Biopsy

- A biopsy allows your veterinarian to determine the types of cells in a tissue sample.
- Biopsies are commonly used to determine if growths are cancerous but can also help determine the severity of a disease.
- The tissue removed during a biopsy is examined under a microscope by a veterinary pathologist, a specialist in examining cells and tissue samples.
- Some form of anesthesia is generally required to perform a biopsy.

What Is a Biopsy?

A biopsy is a surgical procedure in which a tissue sample is removed from the body and examined under a microscope. In some cases, only a small sample is removed for analysis. In other cases, several samples may be removed, or an entire growth may be removed and examined.

What Is a Biopsy Used For?

Dogs and cats commonly develop lumps and growths on their skin. Sometimes these lumps are cancerous, but in other cases, they are simply warts or other noncancerous (benign) growths. Examining a lump does not always give your veterinarian enough information to tell whether it is cancerous or not. A biopsy may be recommended to obtain more information about a suspicious lump.

A biopsy can also be used to diagnose a condition or determine the severity of a disease. For example, if an animal has liver disease, a sample of the liver can be removed (during a biopsy) and examined under a microscope to help determine the cause and extent of the liver damage.

How Is a Biopsy Performed?

Some form of anesthesia is generally required to perform a biopsy. Depending on several factors, including where the tissue sample(s) is/are located and how many areas need to be sampled, your veterinarian will decide whether to use local anesthesia, sedation, or general anesthesia. Local anesthesia usually involves injecting a medication in and around an area of the body to make it numb. If local anesthesia is used, your pet will likely be awake during the biopsy. In contrast, if sedation or general anesthesia is used, the patient is heavily sedated or completely asleep during the procedure. Sometimes, if a growth is on the surface of the skin and is very small, your veterinarian may be able to perform a biopsy using local anesthesia. However, if the area to be biopsied is within the abdomen, for example, or if multiple areas will be biopsied, general anesthesia is usually recommended.

Your veterinarian has a few options when deciding how to perform a biopsy and how much tissue to remove. In an incisional biopsy, a small sample of tissue is removed from a larger mass. In an excisional biopsy, the entire growth is removed and submitted for biopsy.
Once the tissue is removed, your veterinarian will submit it to a diagnostic laboratory. There, a veterinary pathologist (a specialist at examining cells and tissue samples) will examine the tissue under a microscope to make a diagnosis. Results are generally available within several days.

**What Are the Benefits and Risks of a Biopsy?**

Biopsies are very important for helping to confirm a diagnosis. With many types of cancers, early diagnosis is helpful for determining the course of treatment and can help increase the chance of survival. Biopsies can also help to confirm causes of other conditions, including skin lesions as well as diseases of the kidneys, liver, or bone marrow.

Your veterinarian will take many precautions to help ensure that your pet is safe during the biopsy and fully recovers afterward. To help reduce the risk of complications associated with surgery or anesthesia, your veterinarian may give your pet a full physical examination and check your pet’s blood work before the biopsy.

Biopsies are very safe, routine procedures. The risks associated with a biopsy depend on several factors, including the overall health of the patient, the location of the area to be biopsied, and how many samples are taken. Be sure to discuss any questions or concerns with your veterinarian.
Bite-Wound Abscesses in Cats

- An abscess forms when infection, inflammation, and damaged cells cannot be cleared by the body.
- Abscesses can occur when bacteria are deposited under the skin (as with bite wounds or other wounds).
- Abscesses can cause pain, fever, and lethargy (tiredness) until the infection is cleared up.
- Abscesses are treated with antibiotics and possibly surgery, depending on the size and severity of the infection.
- Keeping cats indoors is a good way to prevent abscesses caused by bite wounds.
- Rabies is passed through bite wounds, and prevention/quarantine should be considered when treating an abscess associated with a bite wound.

What Is an Abscess?

An abscess is a pocket of pus that is formed when the body’s immune system is unable to quickly clear a site of infection. Pus is a liquid collection of inflammatory cells, bacteria, and damaged tissue. Abscesses can form in any part of the body and often result from bacterial infections in bite wounds, tooth roots, and anal glands. Abscesses just under the skin are quite common in indoor/outdoor cats. This article focuses on abscesses that form when a cat is bitten by another cat or a wild animal.

Cats that are allowed outdoors are the most likely to have bite-wound abscesses because these cats have the opportunity to fight other animals. During a fight, the skin can be punctured by a tooth or a claw. Bacteria on the tooth or claw are deposited under the skin, and the immune system activates to fight off a possible infection and promote healing. Unfortunately, if the body’s initial attempt is unsuccessful, the skin may heal over the wound and trap the bacteria, damaged tissue, and inflammatory cells under it. At this point, there is no easy way for this material to leave the body and a pocket of liquid pus forms.

What Are the Signs of an Abscess?

An abscess usually presents as a painful, fluid-filled lump under the skin. You may see a small scab over a puncture wound near the lump, but sometimes abscesses aren’t even noticed until they break through the skin and pus oozes from the site. Sometimes cats develop a fever before the abscess is obvious and the only change noticed is that their appetite and activity level may have decreased.

How Are Abscesses Diagnosed and Treated?

If you believe your cat has an abscess, it is important to go to your veterinarian as soon as possible. Once an abscess forms, it is very difficult for the body to remove the material and fight the infection by itself. An untreated abscess can lead to deeper or more widespread infection. Antibiotics are needed to help fight the infection. However, the abscess commonly needs to be drained in order for healing to occur. In some cases, a sample of the fluid may be sent to a
diagnostic laboratory to identify the bacteria and the most appropriate antibiotic. If an abscess is allowed to progress, permanent damage could result.

Since it is difficult for the body to clear the buildup of pus, it is often necessary to open an abscess and flush it with solution to allow the pus to drain. If the abscess pocket is large and there is concern that another abscess may form before the antibiotics take effect, your veterinarian may choose to place a surgical drain to promote removal of fluid for a few days. Then, once the antibiotics have controlled the production of pus, the drain can be removed and the wound can heal completely.

One of the biggest concerns with bite wounds is the spread of infectious diseases like feline immunodeficiency virus (FIV, also known as feline AIDS) and rabies. Only cats can get FIV, but the rabies virus is fatal and can be transmitted to people. Even if your cat’s rabies vaccination is up-to-date, state regulations may require your veterinarian to administer a booster vaccine if your cat is bitten. If your cat is overdue for or has not received a rabies vaccination, it is possible that your cat will have to be quarantined for a period of time. Each region has its own regulations regarding rabies exposure and quarantine procedures. Your veterinarian will advise you about the law in your location.

**How Can I Prevent Abscesses?**

The best way to prevent bite wound abscesses is to keep your cat indoors. Even though fights sometimes occur among housemates, transmission of infectious diseases like rabies is less likely among a group of vaccinated indoor cats. If you do choose to allow your cat outdoors, you should be sure to do the following:

- Spay or neuter your cat—this will make your cat less likely to become territorial and get involved in fights.
- Keep your cat’s rabies vaccinations up-to-date—rabies is a deadly virus that can be prevented from causing disease with regular vaccinations.
- Check your cat frequently for bite wounds, lumps, or other injuries.
**Bladder Stones and Kidney Stones**

- Urinary stones are made of minerals and can form anywhere in the urinary tract of dogs and cats.
- These stones can irritate the bladder lining and obstruct urine flow from the kidney to the bladder or from the bladder out of the body.
- Signs may include more frequent urination, blood in the urine, urinary accidents, or recurring urinary tract infections.
- Pets with a blockage may be unable to urinate, may strain or vocalize (whimper or yelp) while urinating, or may vomit and seem tired, and should be seen by a veterinarian immediately.
- Stones may be caused by certain diets, urinary tract infections, or metabolic disorders; some breeds of animals are more likely to have stones.
- Stones are usually diagnosed with an abdominal radiograph (x-ray) or with an abdominal ultrasound.
- Some stones may be dissolved with special diets, but others may require removal with surgery or other methods.
- Pets with a history of stones may require special diets to help prevent recurrence.

**What Are Bladder and Kidney Stones?**

Bladder and kidney stones are hardened accumulations of minerals found in urine. Common minerals involved include struvite, calcium oxalate, and urate. Dogs and cats can develop stones anywhere in the urinary tract. Stones can form in many different shapes and sizes.

Certain breeds of animals may be more likely to form certain kinds of stones. Dalmatians, for example, are more likely to develop urate stones.

Stones can have sharp edges. They can irritate or become embedded in the lining of the bladder, causing the tissue to become thickened and inflamed. They can also form inside the kidneys.

Stones can cause serious problems when they lodge in the ureters (the thin tubes connecting each kidney to the bladder) or the urethra (the narrow tube that allows urine to flow from the bladder out of the body). When the normal flow of urine from the kidney to the bladder is obstructed, urine (and pressure) can build up in the kidney, potentially causing kidney infections or kidney failure.

If a stone obstructs the urethra, the pet is unable to urinate, and the urine builds up inside the urinary tract. This occurs more commonly in male pets because, compared with females, they have a longer and very narrow urethra. When pets are unable to urinate, it’s a medical emergency, and a veterinarian should see the pet immediately.

**What Causes These Stones?**
Stones are often caused by a change in the normal pH of the urine, making it too acidic (low pH) or too basic (high pH), or by diseases that alter the mineral balance in the body. Factors that can lead to the formation of stones include:

- Type of food the pet is eating
- Urinary tract infections
- Vitamin supplements
- Metabolic diseases
- Genetic predisposition (breed of animal)

**What Are the Signs of Bladder and Kidney Stones?**

Most stones are found in the bladder. Pets with bladder stones may show no signs at all or may exhibit signs such as the following:

- More frequent urination
- Blood in the urine
- Urinary accidents
- Recurring urinary tract infections

Signs of a possible urinary blockage include:

- Straining to urinate
- Inability to urinate
- Crying in the litterbox (cats)
- Vomiting
- Anorexia
- Painful abdomen
- Lethargy (tiredness)

Pets with kidney stones may show no signs or may have persistent blood in the urine. If a blockage affects the kidneys, the pet may have pain near the middle of the spine (where the kidneys are located) or may drink and urinate more.

**How Are Urinary Stones Diagnosed?**

Some veterinarians may be able to feel stones in the bladder by applying gentle pressure with their hands. In most cases, an abdominal radiograph (x-ray) is required. Since some stones do not appear on regular radiographs, contrast medium (a sterile solution that appears bright on radiographs) may need to be injected into the urinary tract to help make the stones more visible. An abdominal ultrasound may also be helpful to visualize stones.

If the urethra is obstructed with a stone, the veterinarian will usually be able to feel a firm bladder, and the pet may have signs of pain.
Testing the urine is helpful to determine if a urinary tract infection is present and if the urinary pH is normal. Sometimes crystals may be found in the urine, which may provide a clue as to the type of stone involved. Still, the only way to identify the type of stone with certainty is to send sample stones to a laboratory for analysis. This is important because treatment will vary depending on the stone.

**How Are Bladder and Kidney Stones Treated?**

In pets with blockages, emergency surgery is usually required. If the pet is not blocked, some stones can be dissolved by feeding the pet a special diet. This food, available only through veterinarians, will help modify the urine pH and dissolve the stones.

Some types of stones cannot be dissolved by diet and must be removed from the bladder using other methods, including:

- **Voiding urohydropropulsion**: While the pet is sedated, small stones may be flushed out by filling the bladder with fluid and applying pressure to empty it (only works for small stones)
- **Basket retrieval**: A small scope (a long, thin device with a tiny camera) is inserted into the urethra while the animal is under anesthesia, and stones are found and removed (not possible in male cats)
- **Laser lithotripsy**: A small scope is inserted into the urethra, and a laser is used to break up the stones into smaller pieces which then may pass through the urethra (not possible in male cats)
- **Surgery**: The bladder is opened through the abdomen, and the stones are removed

While kidney stones may be removed by surgery, this procedure may affect kidney function. Another alternative, which is usually only available at universities, is called *extracorporeal shock wave lithotripsy*. In this procedure, shock waves are used to break up stones in the kidneys and ureter so that they become small enough to pass in the urine.

Once stones are removed, they are generally submitted to a diagnostic laboratory so their type/composition can be determined. Once the stone composition has been determined by lab analysis, pets may need to be fed a special diet and/or given medication for the rest of their lives to help prevent recurrence.
Blood Pressure Test

- An (indirect) blood pressure test measures the pressure of blood against the walls of large arteries.
- It is a noninvasive, painless procedure that can be performed on an outpatient basis.
- Your veterinarian may recommend a blood pressure test if your pet shows signs of high blood pressure or has been diagnosed with a disease associated with high blood pressure.
- High blood pressure is usually treated by identifying and treating the underlying disease. Prescription medications may be necessary.

What Is a Blood Pressure Test?

A blood pressure test measures the pressure of blood against arterial walls as the blood is pumped through the body. As a general rule of thumb, blood pressure should not exceed about 160/100 mm Hg in dogs and cats. The first number is the systolic blood pressure, or the pressure when the heart contracts. The second reading is the diastolic blood pressure, which is lower because it is the pressure when the heart relaxes between contractions. Blood pressure is measured in millimeters of mercury (mm Hg).

Which Pets Should Have a Blood Pressure Test?

In most cases, a blood pressure test is performed to determine if your pet’s blood pressure is too high. When blood pressure is too high, bleeding may occur, which can damage internal organs. The organs that are most vulnerable to damage are the eyes, kidneys, heart, and brain. The most common sign of high blood pressure is sudden or gradual blindness. Blindness caused by high blood pressure may be reversible, if caught early. Other signs of high blood pressure include dilated pupils, disorientation, and, less commonly, seizures.

In dogs and cats, high blood pressure is typically caused by another disease or condition, such as:

- Hyperthyroidism (too much thyroid hormone)
- Kidney disease
- Cushing disease, or hyperadrenocorticism (too much adrenal hormone)
- Diabetes mellitus (too much blood sugar)

Your veterinarian may recommend a blood pressure test if your pet shows signs of high blood pressure or has been diagnosed with a disease associated with high blood pressure. Because cats older than 10 years are at high risk for kidney disease and hyperthyroidism, veterinarians often recommend screening them for high blood pressure.

Pets that are critically ill or under general anesthesia are often monitored to ensure that their blood pressure doesn’t become too low. Maintaining normal blood pressure is important so that organs receive the oxygen necessary to maintain proper function.

How Is Blood Pressure Measured?
In most cases, a blood pressure test is noninvasive and painless for your pet and can be performed during a regular office visit. Anxiety and stress can raise your pet’s blood pressure, so the test should be done in a quiet, relaxed environment and should be performed several times to ensure the results are not influenced by stress.

With the most common technique, a blood pressure cuff is placed around one of the pet’s limbs or around the base of the tail. The cuff is inflated to a pressure above the systolic pressure, so it momentarily presses against the artery and stops the blood flow. The cuff is then slowly deflated, and a machine determines the systolic and diastolic blood pressures. This method is called the indirect method and is fairly accurate. The most accurate blood pressure measurement is accomplished by placing a catheter directly into an artery. This type of monitoring is more painful and typically only done for patients that are critically ill and/or under general anesthesia and need constant blood pressure monitoring.

**How Is High Blood Pressure Treated?**

Because high blood pressure is usually caused by another disease, identifying and treating that disease can help return blood pressure closer to normal.

Occasionally, additional medications that dilate the blood vessels are required to help reduce blood pressure. If your pet has been diagnosed with high blood pressure, a blood pressure test should be done every few months to make sure the condition is properly controlled.
Bordetella bronchiseptica

- *Bordetella bronchiseptica* is a bacterium associated with a highly contagious respiratory disease in dogs.
- It is one of the leading bacterial causes of “kennel cough” in dogs.
- The disease is spread through direct contact and airborne transmission.
- Signs of infection are typically mild, requiring little treatment other than supportive care. However, in certain situations, kennel cough can cause serious illness and even death.
- Risk of illness can be reduced by avoiding high-risk environments. Your veterinarian may recommend vaccination for your dog.

What Is It?

*Bordetella bronchiseptica* (*B. bronchiseptica*) is a bacterium that is commonly associated with respiratory disease in dogs. It can also infect cats, rabbits, and, in rare cases, humans. It is one of the most common bacterial causes of canine infectious tracheobronchitis, which is also sometimes called *kennel cough*. *B. bronchiseptica* is highly contagious, easily transmitted through direct contact or the air, and resistant to destruction in the environment.

Signs of Illness

Signs of canine infectious tracheobronchitis typically develop 2 to 14 days after exposure to *B. bronchiseptica*. In mild cases, signs typically resolve within 10 to 14 days. More severe cases, particularly when a subsequent infection has occurred, can require a much longer recovery. Infected animals can continue to shed (spread) the bacterium for months after recovery.

Signs include:

- A dry, “honking” or gagging cough
- Nasal discharge
- Lethargy
- Fever

In healthy adult dogs, *B. bronchiseptica* typically causes no more than a mild illness. In puppies or in dogs with other underlying health issues, however, it can cause severe illness or even death in rare cases.

Diagnosis and Treatment

Although sophisticated testing is available, diagnosis is generally based on a history of exposure to infected dogs or a recent visit to a kennel, combined with the presence of signs of illness.

In mild cases, treatment is generally supportive, as the disease typically resolves on its own unless a subsequent infection occurs. Precautionary antibiotics to prevent subsequent infection
may be prescribed. In severe cases, treatment may consist of administration of antibiotics as well as medications to help your pet breathe more easily. Cough medication may also be prescribed if appropriate.

A harness, rather than a collar, is recommended for leash walking of ill dogs. A traditional collar puts pressure on already sensitive and irritated tracheal tissues and can induce coughing episodes.

**Prevention**

The term *kennel cough* is a misnomer, as dogs don’t necessarily contract the disease as a result of being kenneled. Rather, they become ill because kennels can be stressful environments for some dogs, and stress can suppress the immune system, increasing susceptibility to disease. Also, kennel conditions (such as group housing) can make it easier to spread infectious organisms, such as *B. bronchiseptica*. Any place where large numbers of dogs gather together increases the risk of disease transmission.

Vaccination is the best way to protect your dog from illness associated with canine infectious tracheobronchitis, particularly if your dog frequents kennels, groomers, dog shows, or dog sporting events. Although the *B. bronchiseptica* vaccination is not mandatory for every dog, it may be recommended in dogs whose lifestyle increases their risk of exposure to this organism. An intranasal *B. bronchiseptica* vaccine is available in addition to the traditional injectable vaccine. Ask your veterinarian whether vaccination is recommended for your pet and, if so, which type is best for your pet.

**To reduce the risk of disease transmission, many boarding facilities require dogs to be vaccinated for kennel cough before entry.**
Breast Cancer in Dogs and Cats

- Breast cancer is the uncontrolled growth of abnormal mammary gland (breast) cells.
- Tumors occur most frequently in older, female pets that have not been spayed.
- Most (80% to 90%) mammary tumors in cats are malignant (cancerous), while 50% of mammary masses in dogs are malignant.
- While the cause of breast cancer is unknown, hormones are thought to play a role.
- Signs of breast cancer include firm nodules in the tissue around the nipples, ulcerated skin, and swollen, inflamed nipples with or without discharge.
- Breast cancer is best diagnosed with a surgical biopsy.
- Blood work and radiographs (x-rays) are usually recommended to help determine if the cancerous cells have spread to other parts of the body.
- Tumors are treated with surgical removal and possibly radiation therapy and/or chemotherapy.
- Spaying female pets before their first heat cycle is the best way to prevent breast cancer.

What Is Breast Cancer?

Breast cancer is the uncontrolled growth of abnormal mammary gland (breast) cells. If left untreated, certain types of breast cancer can metastasize (spread) to other mammary glands, lymph nodes, the lungs, and other organs throughout the body.

While any pet can develop mammary tumors, these masses occur most often in older, female dogs and cats that have not been spayed. Siamese cats have a higher risk for breast cancer than other feline breeds.

In cats, 80% to 90% of these tumors are malignant (cancerous). Dogs fare a little better: 50% of mammary tumors are malignant. Any suspicious lump in the mammary area should be examined by a veterinarian as soon as possible.

What Causes Breast Cancer?

The exact cause of mammary gland cancer is unknown. However, dogs and cats that are spayed before their first heat cycle are less likely to have breast cancer, so hormones may play a role.

Treatment with hormones for other conditions may increase the risk for this type of cancer. In the past, hormones were used to treat some behavior and skin problems in cats, but this has generally fallen out of favor. Some hormone treatments are still being used in dogs, such as estrogen in the treatment of urinary incontinence, but other alternatives are usually available.

Genetics may also play a role in canine breast cancer. Recent findings show that certain genes are overexpressed in dogs with this condition.

What Are the Signs of Breast Cancer?
There’s no way to determine if a lump is cancerous simply by feeling it. But since any lump in the mammary area has the potential to be cancerous, it’s a good idea to check your pet regularly.

Mammary tumors tend to be firm, nodular masses that feel like BB pellets under the skin. Tumors may be located in a single mammary gland (the area around one nipple), or they may be in several mammary glands at once. The skin covering the tumor may be ulcerated or infected. Nipples may be swollen or red, and there may be discharge from the nipple itself.

**How Is Breast Cancer Diagnosed?**

The best way to diagnose breast cancer is with a surgical biopsy (tissue sample) of the mass. In dogs with large masses, it may be possible to obtain a fine needle aspirate of the tumor, which involves placing a needle into the mass and extracting cells for examination under the microscope. This procedure may be more difficult with smaller masses or in cats. Since a biopsy usually provides a larger tissue sample (likely to yield a more definitive diagnosis), this is the best option. Biopsies generally require some form of anesthesia or sedation, so your veterinarian may recommend a preanesthetic evaluation and/or blood work.

**How Is Breast Cancer Treated?**

Early detection and surgical removal of the masses is the best treatment option. Before performing surgery, your veterinarian will most likely recommend blood work and radiographs (x-rays). Chest radiographs are important to check for metastases to the lungs, and abdominal radiographs may show signs of enlarged lymph nodes. If the radiographs show no evidence of metastasis, the pet has a better prognosis.

Because of the high rate of malignancy in cats and the fact that cancer often invades several mammary glands along the same side of the body, a radical mastectomy with removal of all mammary glands on the same side is often recommended. For cats with masses on both sides, two separate surgeries several weeks apart may need to be performed.

Unless dogs have multiple tumors, they may not need to have as much tissue removed as cats. Submission of the tissue for microscopic examination will determine if the tumors have been completely removed.

If your pet still has her ovaries and uterus, your veterinarian may recommend spaying your pet at the time of mammary surgery.

Following surgery, your veterinarian may recommend radiation therapy or chemotherapy. Radiation therapy is designed to kill any potentially cancerous cells in a focused area. Chemotherapy involves systemic drugs that treat cancerous cells that may have travelled to other parts of the body.

**Can Breast Cancer Be Prevented?**
The best way to prevent breast cancer is to have your pet spayed before her first heat cycle. Even spaying your pet by 1 year of age can help reduce breast cancer risk. Pets that are spayed later in life will be at higher risk for breast cancer.
Breeding Your Cat

- There are currently more cats in the United States than there are homes for them. As a result, millions of cats are surrendered to shelters and euthanized each year.
- Breeding should only be done to improve the breed, which requires a strong knowledge of the pedigrees and health histories of both the female and male cats.
- Responsible breeding requires a tremendous amount of time and money, as well as a commitment to ensuring that the kittens have good homes for a lifetime.
- Cats that aren’t spayed or neutered are more likely to experience potential health and behavior problems.

Should I Breed My Cat?

Most shelters and rescue organizations are overflowing with mixed breed and purebred cats that are perfectly friendly and adoptable, but there simply aren’t enough homes for them. As a result, approximately three to four million unwanted dogs and cats are euthanized each year, according to the Humane Society of the United States. Producing more kittens just exacerbates the current cat overpopulation problem.

What’s Involved in Raising a Litter?

Before you breed your cat, honestly consider if you have the time, commitment, and finances required to raise a litter. Ask yourself the following questions:

- Can I afford to raise a litter? The mother cat should be vaccinated and dewormed before she is bred, and screened for diseases, such as feline leukemia and feline immunodeficiency virus (the cat version of AIDS), as well as any genetic problems she could pass to her offspring. The male cat should also be screened. Female cats will require prenatal exams, radiographs (or X-rays), and ultrasound examinations. If there are problems during the birthing process, she may need an emergency Caesarean section. After birth, the kittens will need veterinary exams, vaccinations, dewormers, and kitten food before they are sent to new homes.
- Can I deal with the birthing process? Can you be there to assist with the birthing process? Do you know what to do if there’s a problem? If there are complications, the mother cat and/or some of the kittens may not survive. Remember, if you want your children to learn from the birthing process, it can be a difficult experience for them if things don’t go smoothly.
- Do I have the time to care for the kittens? Some mothers reject their litters. If that happens, will you have time to feed each kitten several times a day and provide other care at this critical stage?

What Are My Responsibilities as a Breeder?

Good breeders take responsibility for their kittens not just until they find a new home, but for a lifetime. Reputable breeders:
• Mate purebred cats only to improve the breed. They follow breeding standards and belong to breed organizations. They make sure that both the mother and the father cats are screened for genetic defects, and have the papers to prove their health and backgrounds.
• Provide each kitten with individual attention to assure that it is properly socialized. They want a kitten that’s not only physically healthy, but enjoys interacting with people.
• Interview potential owners to find the best homes for their kittens. These breeders make sure the owners are financially prepared and committed to keeping the kittens for a lifetime, which can be 20 years or more.
• Require new owners to sign a contract. The contract may require that the owners spay or neuter the cat, and that they return the cat to the breeder, should they be unable to keep it. Both of these measures are designed to prevent cats from being surrendered to shelters.
• Provide a health guarantee. The breeder provides paperwork showing that a veterinarian has examined the kitten and found no inherited problems or diseases, and that early vaccination and deworming have been performed.
• Are available to offer advice and guidance over the months and years ahead. Good breeders are knowledgeable about the breed, and make themselves available to educate and advise the new owners.

Are There Any Health Risks Involved With Breeding?

There are always potential risks associated with pregnancy and birth, especially with very young or very old cats.

Whether you breed your cat or not, spaying or neutering can help eliminate some potential health and behavior problems. Female cats that are spayed don’t develop uterine cancer and uterine infections; they are also less likely to develop breast cancer, and they also won’t subject you to yowling heat cycles and unwanted litters. Male cats that are neutered are less likely to urine mark in the house or roam the neighborhood looking for fights.
Bringing a New Kitten Home

- Your kitten must receive veterinary care before being introduced to other cats.
- Your kitten must be vaccinated against various diseases on a schedule, beginning at 2 to 3 months of age.
- Your kitten should be spayed or neutered by 6 months of age.
- Proper nutrition is especially important for kittens, which need two to three times as many calories and nutrients as adult cats.

The Basics

Bringing a new kitten home is exciting. The following guidelines will help you and your kitten adjust to this big change in your lives.

Kittens can leave their mother and littermates after they have been weaned, usually at 8 to 10 weeks of age. Like human babies, kittens require special care, including veterinary care, feeding, and socialization. The best time to bring a kitten home is when you have at least 1 or 2 days to focus on helping him or her adjust to new surroundings.

To safely transport your new kitten home, you’ll need a carrier. Leaving mom is a big deal for your kitten; a carrier will help him or her feel more secure. Don’t use another pet’s carrier because its smell could be stressful to your kitten. Place a towel in the carrier for warmth and to absorb urine in case of an accident. Carry an extra towel.

Before your kitten has contact with other cats, he or she must be tested for feline leukemia virus and feline immunodeficiency virus, given a physical examination, tested and treated for parasites, and vaccinated. This will prevent the spread of a disease or parasites to other pets. If you have other pets, talk to your veterinarian about how to introduce your kitten to them.

Before you bring your kitten home, prepare a small room or space that will be his or her own for the first few days or weeks. Having a smaller area to explore at first will help your kitten get comfortable with his or her new home. Cats don’t like to eat next to the litterbox, so place the litterbox on one side of the room and the food and water dishes on the other. Make sure that your kitten can get in and out of the litterbox without help; it might be necessary to provide a litterbox with low sides. To help your kitten feel secure, make sure that the room has hiding places. If there isn’t furniture to hide beneath, place cardboard boxes on their sides or cut doorways into them. Providing a warm, comfortable bed is essential. You can purchase a pet bed or line a box with something soft; using a sweatshirt that you’ve worn will help your kitten get used to your scent.

When you bring your kitten home, put the carrier in the room you’ve prepared. Open the carrier door, but let your kitten come out when he or she is ready. After your kitten comes out, leave the carrier in the corner as another hiding place. Every day, scoop out the litterbox and provide fresh food and water.
Your kitten may hide at first, but he or she will explore when no one is watching, becoming more comfortable with his or her new home. Your kitten will likely want plenty of attention from you—you’re his or her new mother/littermate!

After your kitten has been to your veterinarian, becomes comfortable in his or her room, and develops a regular routine of eating, drinking, and using the litterbox, you can let him or her venture into the rest of your house. At this point, you need to make sure that your kitten stays safe and has enough privacy to eat, sleep, and use the litterbox. Keep your kitten’s bed, litterbox, and food/water dishes in the same place so that he or she knows where to find them.

Veterinary Care

Kittens receive some immunity (protection against disease) from their mothers at birth and through nursing. Because this immunity slowly wears off, kittens should be vaccinated against various diseases on a schedule, beginning at 2 to 3 months of age. Ask your veterinarian for details.

Intestinal parasites are common in kittens. Fecal examinations and treatments (dewormings) are usually repeated until two consecutive fecal examinations have negative results. External parasites (fleas, ticks, and mites) are treated with products approved for use on kittens.

Kittens should be spayed or neutered by 6 months of age. This helps to control pet overpopulation and reduces the chance of behavior problems and some medical conditions.

Feeding

Proper nutrition is especially important for kittens, which need two to three times as many calories and nutrients as adult cats. A mother cat’s milk provides everything a kitten needs during the first 4 weeks of life. Cow’s milk should never be given to kittens or cats because it can give them diarrhea. Most kittens are completely weaned between 8 and 10 weeks of age. At 6 to 7 weeks of age, kittens should be able to chew dry food. Feed a name-brand kitten food with the American Association of Feed Control Officials (AAFCO) statement on the bag or label until your kitten is approximately 9 to 12 months old. When your kitten is 3 to 6 months old, feed him or her three times per day. When your kitten is 6 months old, start feeding twice daily.

Socialization

Cats learn how to socialize with each other from their mother and littermates; therefore, if possible, kittens should remain with their mother and/or littermates until they are about 10 weeks old. Kittens that have human contact before they are 10 to 12 weeks old are more likely to interact well with people throughout their lives. Handling and playing with your kitten can help you bond with him or her. Feral (wild) cats haven’t been socialized with people as kittens and may fear and avoid people throughout their lives. Your kitten should be gradually introduced to other pets with care and supervision. Ask your veterinarian for advice on the best way to do this.

Enjoy your new kitten, and let your veterinarian know if you have any questions.
Kitten Supplies

- Brand-name kitten food with the American Association of Feed Control Officials (AAFCO) statement on the bag or label
- Food and water bowls; ceramic and metal are preferred because some pets are sensitive to plastic
- Cat toys that don’t have small parts or string that can come off and be swallowed
- Cat brush; brush your kitten gently twice weekly
- Cat toothpaste and toothbrush; it’s best to start toothbrushing during kittenhood; aim for at least three times per week
- Breakaway collar and identification tag
- Scratching post and/or pad; when your kitten uses it, reward him with praise and/or a feline treat
- Litterbox
- Litter; low-dust, unscented scoopable litter is best
- Cat carrier
- Cat bed
**Brushing Your Cat's Teeth**

- Periodontal disease can lead to tooth loss and affects most cats before they are 3 years old. Bacteria from periodontal disease can spread to affect other organs and cause illness.
- Before you start brushing your cat’s teeth, have them checked by your veterinarian.
- Make toothbrushing enjoyable for your cat by rewarding him or her immediately after each session.
- Be very patient when teaching your cat to accept toothbrushing.
- If your cat won’t tolerate toothbrushing, your veterinarian can recommend plaque-preventive products for your cat.

**Periodontal Disease—Why Brush?**

Periodontal (gum) disease can lead to tooth loss and affects most cats before they are 3 years old. Bacteria from periodontal disease can spread to affect other organs and cause illness. One of the best ways to help prevent periodontal disease is to brush your cat’s teeth on a regular basis—daily, if he or she will allow it.

Cats are never too young to start having their teeth brushed at home; in fact, the younger they are, the better.

Before you start brushing your cat’s teeth, have them checked by your veterinarian. Your veterinarian may recommend a dental cleaning to remove any existing plaque and tartar, which contribute to periodontal disease. If your cat has severe dental disease, extraction of the affected teeth may be recommended. Follow your veterinarian’s recommendation on how long to wait after dental cleaning or extraction before brushing your cat’s teeth.

**What You Need**

- Baby toothbrush or pet toothbrush that is an appropriate size for your cat; if your cat won’t tolerate a toothbrush, a small piece of washcloth can be used
- Pet toothpaste
- Treat or other reward your cat really likes

**Note:** Do not use toothpaste for people or baking soda because these can upset your cat’s stomach. Cat toothpaste comes in different flavors (e.g., poultry, beef). You may need to try a couple flavors to find the one your cat likes the best. The more your cat likes the toothpaste, the easier it will be to train him or her to accept brushing.

**Technique**

- Toothbrushing should be a bonding experience that is constantly reinforced with praise and rewards. Be very patient—teaching your cat to accept toothbrushing may take weeks.
Make toothbrushing enjoyable for your cat by rewarding him or her immediately after each session.

- You only need to brush the outside of your cat’s teeth—the side facing the cheek. Only do as much at a time as your cat allows. You may not be able to do the whole mouth at first.
- If you are ever worried about being bitten, stop. Ask your veterinarian about how best to care for your cat’s teeth.
- Start by letting your cat get used to the toothbrush and toothpaste. Put them out and let your cat sniff them. You can let your cat taste the toothpaste to see if he or she likes it.
- Also, get your cat used to you touching his or her mouth. Lift his or her lips, and slowly and gently rub your cat’s teeth and gums with your finger. You might want to dip your finger in something your cat finds tasty, like juice from a can of tuna.
- When your cat is comfortable with you touching his or her mouth and is familiar with the toothbrush and toothpaste, gradually switch to putting the toothpaste on your finger, and then to putting the toothpaste on the toothbrush. Let your cat lick the paste off the brush at first to get used to having the brush in his or her mouth. If your cat won’t tolerate a toothbrush, a small piece of washcloth can be used. Place a small amount of toothpaste on the washcloth, and rub it over the outside surfaces of your cat’s teeth.
- Brush your cat’s teeth along the gum line. Work quickly—you don’t need to scrub. Work up to 30 seconds of brushing for each side of the mouth at least every other day.
- If you notice any problems as you brush, like red or bleeding gums or bad breath, call your veterinarian. The earlier problems are found, the easier they are to treat.

Other Ways to Control Plaque

Although there’s no substitute for regular toothbrushing, some cats just won’t allow it. If you can’t brush your cat’s teeth, ask your veterinarian about plaque-preventive products. Feeding dry food may also help keep your cat’s teeth and gums in good condition. The Seal of Acceptance from the Veterinary Oral Health Council appears on products that meet defined standards for plaque and tartar control in dogs and cats.

Signs of Dental Problems

- Bad breath
- Sensitivity around the mouth
- Loss of appetite and/or weight
- Yellow or brown deposits on the teeth
- Bleeding, inflamed, and withdrawn gums
- Loose or missing teeth
- Pawing at the mouth or face
- Difficulty chewing
BUN

- The liver and kidneys are both involved in maintaining the body’s BUN (blood urea nitrogen) level.
- The BUN level can be affected by many things, including certain medications and various illnesses.
- If your pet’s BUN level is abnormal, additional tests may be recommended to determine the cause.

What Is BUN?

BUN stands for blood urea nitrogen. The BUN level is a measurement that represents the level of urea in the blood. Urea is considered one of the body’s waste products. It is produced when the liver participates in protein metabolism, and it is usually eliminated from the body by the kidneys. Therefore, both the liver and kidneys must be functioning properly for the body to maintain a normal level of urea in the blood.

The BUN level is an important part of a blood test known as a chemistry panel, so it is often evaluated during routine wellness checkups or pre-surgery screening in healthy pets. Often, it is evaluated along with other blood tests that screen for abnormalities involving the kidneys or liver. Because various illnesses can affect the BUN level, your veterinarian may recommend testing your pet’s BUN level if your pet has any of the following signs of illness:

- Vomiting
- Appetite loss
- Lethargy (tiredness)
- Anemia
- Increased drinking and/or urination
- Weight loss
- Dehydration

How Is the BUN Level Measured?

To test your pet’s BUN level, your veterinary team must obtain a small blood sample. This procedure is usually very quick; it may take only a few seconds if the patient is well behaved. For patients that are very frightened or not well behaved, your veterinary team may want to use a muzzle, towel, or other gentle restraint device. In some cases, such as in patients with very thick fur, it may be necessary to shave the hair from the area where blood will be drawn. The hair will grow back, and this is often a good way to find the vein quickly.

Some veterinary offices have in-house blood analysis equipment, so they can perform the BUN level test in the office and have results the same day. Other offices send blood samples to an outside laboratory for the test to be performed. If an outside laboratory is used, results are generally available within 1 to 2 days.
Be sure to tell your veterinarian about any medications or supplements your pet may be receiving, as some products can alter the BUN level in the blood.

**What Does the BUN Level Tell Your Veterinarian?**

Although changes in the BUN level are commonly associated with kidney disease or inadequate liver function, many other factors can affect the BUN level. Some antibiotics, for example, can cause this level to increase. Additionally, various medical conditions, such as dehydration or stomach bleeding, can affect the BUN level.

An abnormal BUN level (whether too low or too high) can indicate medical problems. The following are a few conditions that cause an abnormal BUN level:

- Decreased liver function
- Kidney infection
- Kidney failure
- Urinary blockage
- Hemorrhage (bleeding) of the stomach or intestines
- Severe burns or severe infection
- Starvation
- Shock

If your pet has an abnormal BUN level, your veterinarian will combine that information with other vital information about your pet to decide if further diagnostic testing is recommended to investigate the abnormal result. Additional tests may include a urinalysis (a screening test to evaluate components in the urine), radiographs (“x-rays”), or additional blood testing. Depending on your pet’s overall condition, your veterinarian may recommend medications or other management.

**Are There Risks Associated With Measuring the BUN Level?**

Very few risks are associated with measuring the BUN level. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.
BUN and Creatinine Levels

- Taken together, the blood urea nitrogen (BUN) and creatinine levels can provide useful information about kidney function.
- The BUN and creatinine levels can be affected by many things, including certain medications and various illnesses.
- If your pet’s BUN or creatinine level is abnormal, additional tests may be recommended to determine the cause.

What Are BUN and Creatinine?

BUN stands for blood urea nitrogen. The BUN is a measurement that represents the level of urea in the blood. Urea is considered one of the body’s waste products. It is produced when the liver participates in protein metabolism, and it is usually eliminated from the body by the kidneys. Therefore, both the liver and kidneys must be functioning properly for the body to maintain a normal level of urea in the blood.

Creatinine is a substance that the body produces during normal metabolism. The body eliminates creatinine almost exclusively through the kidneys’ filtration process, so measurement of creatinine is an accurate estimation of how well the kidney filtration processes are working. Anything that alters the ability of the kidneys to filter efficiently (such as dehydration) can cause changes in the level of creatinine in the blood.

Taken together, and usually combined with results of a urinalysis (a screening test to evaluate components in the urine), the BUN and creatinine levels provide a very accurate estimation of how well the kidneys are working. The BUN and creatinine levels are frequently part of a blood test known as a chemistry panel, so they are often evaluated during routine wellness checkups or pre-surgery screening in healthy pets.

Often, the BUN and creatinine levels are evaluated along with other blood tests that screen for abnormalities involving the kidneys. Because various illnesses can affect the BUN and creatinine levels, your veterinarian may recommend testing your pet’s blood if your pet has any of the following signs of illness:

- Vomiting
- Appetite loss
- Lethargy (tiredness)
- Anemia
- Increased drinking and/or urination
- Weight loss
- Dehydration

How Are the BUN and Creatinine Levels Measured?

To measure your pet’s BUN and creatinine levels, your veterinary team must obtain a small blood sample. This procedure is usually very quick; it may take only a few seconds if the patient
is well behaved. For patients that are very frightened or not well behaved, your veterinary team may want to use a muzzle, towel, or other gentle restraint device. In some cases, such as in patients with very thick fur, it may be necessary to shave the hair from the area where blood will be drawn. The hair will grow back, and this is often a good way to find the vein quickly.

Some veterinary offices have in-house blood analysis equipment, so they can perform the tests for BUN and creatinine in the office and have results the same day. Other offices send blood samples to an outside laboratory for the tests to be performed. If an outside laboratory is used, results are generally available within 1 to 2 days.

Be sure to tell your veterinarian about any medications or supplements your pet may be receiving, as some products can alter the BUN and creatinine levels in the blood.

What Do the BUN and Creatinine Levels Tell Your Veterinarian?

Although changes in the BUN and creatinine levels are commonly associated with kidney disease, many factors can affect these levels. Some antibiotics, for example, can cause these levels to increase.

The following are a few conditions that can cause abnormal BUN and creatinine levels:

- Dehydration
- Kidney infection
- Kidney failure
- Toxic injury to the kidneys
- Urinary blockage
- Shock
- Severe heart disease
- Muscle wasting or severe weight loss

Sometimes, the BUN and creatinine levels are both abnormal, but many times, one level is normal and the other is not. If your pet has abnormal test results, your veterinarian will combine that information with other vital information about your pet to decide if further diagnostic testing is recommended to investigate the abnormal result. Additional tests may include a urinalysis, radiographs (“x-rays”), or additional blood testing. Depending on your pet’s overall condition, your veterinarian may recommend medications or other management.

Are There Risks Associated With Measuring the BUN and Creatinine Levels?

Very few risks are associated with measuring the BUN and creatinine levels. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.
Calcium Level

- The body’s normal calcium level is maintained through a very complex interaction involving many of the body’s organs.
- Calcium level can be affected by many things, including certain medications and a variety of illnesses.
- If the calcium level is dangerously low or high, hospitalization may be recommended while the problem is being corrected.
- If your pet’s calcium level is abnormal, additional tests may be recommended to determine the cause.

What Is the Calcium Level?

Calcium is an important nutrient that the body needs to maintain many of its organs. Bones, the heart, intestines, and muscles are just a few of the organs that rely on a healthy blood calcium level in order to function properly. If the calcium level in the blood drops too low or goes up too high, serious illness can result.

The calcium level is an important part of a blood test known as a chemistry panel, so it is often evaluated during routine wellness checkups or pre-surgery screening in healthy pets. Because a variety of medical conditions can affect the calcium level, your veterinarian may recommend testing your pet’s calcium level if your pet has any of the following signs of illness:

- Vomiting
- Appetite loss
- Lethargy (tiredness)
- Increased drinking and/or urination
- Restlessness
- Muscle twitching
- Seizures
- Irregular heart rate
- Constipation
- Weakness or difficulty walking

How Is the Calcium Level Measured?

To test your pet’s calcium level, your veterinary team must obtain a small blood sample. This procedure is usually very quick; it may take only a few seconds if the patient is well behaved. For patients that are very frightened or not well behaved, your veterinary team may want to use a muzzle, towel, or other gentle restraint device. In some cases, such as in patients with very thick fur, it may be necessary to shave the hair from the area where blood will be drawn. The hair will grow back, and this is often a good way to find the vein quickly.

Some veterinary offices have in-house blood analysis equipment, so they can perform the test for the calcium level in the office and have results the same day. Other offices send blood samples to
an outside laboratory for the test to be performed. If an outside laboratory is used, results are generally available within 1 to 2 days.

Because a recent meal changes the blood and may affect the calcium level, your veterinarian may recommend that your pet not receive any food for 12 hours before drawing blood to perform the test. In most cases, water can still be offered. Please let your veterinarian know if this temporary fast will be a problem for you or for your pet.

Be sure to tell your veterinarian about any medications or supplements your pet may be receiving, as some products can alter the calcium level in the blood.

**What Does the Calcium Level Tell Your Veterinarian?**

Supplementing a pet’s diet with too much calcium or administering certain medications (such as steroids) can affect the results of a calcium level test. However, an abnormal calcium level (whether too low or too high) can also indicate a serious medical problem. Because so many of the body’s organs depend on calcium or are involved in maintaining normal blood calcium levels, abnormalities in the blood calcium level can affect the body in a variety of ways. The following are a few conditions that can cause an abnormal calcium level:

- Kidney failure
- Bone infection
- Dehydration
- Pancreatitis (inflammation of the pancreas)
- Cancer
- Addison’s disease (a disease of the adrenal glands)
- Young or growing dog (usually large-breed dogs)
- Ingestion of rat poison or antifreeze

If your pet has an abnormal calcium level, your veterinarian will combine that information with other vital information about your pet to decide if further diagnostic testing is recommended to investigate the abnormal result. Additional tests may include a urinalysis (a screening test to evaluate components in the urine), radiographs (“x-rays”), or additional blood testing.

Depending on your pet’s overall condition, your veterinarian may recommend medications or other management. If the blood calcium level is dangerously low or high, hospitalization may be recommended while the problem is being corrected through fluid therapy and medications.

**Are There Risks Associated With Testing the Calcium Level?**

There are very few risks associated with testing the calcium level. Drawing blood usually takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.
Cardiac Arrhythmias in Cats

- An arrhythmia is an irregularity in the rate and/or pattern of the heartbeat.
- Cats of any age or sex may experience arrhythmias.
- Rhythm disturbances may be caused by many factors, including diseases, drug reactions, and underlying heart conditions.
- Signs may include weakness and difficulty breathing.
- Diagnosis may require an electrocardiogram (ECG), blood work, chest radiographs (x-rays), and possibly an echocardiogram (ultrasound evaluation of the heart).
- Control or management of the arrhythmia may include treatment for the underlying disease, antiarrhythmia medications, and possibly a pacemaker.

What Is a Cardiac Arrhythmia?

A cardiac arrhythmia is an abnormality in a cat’s heartbeat. It may be associated with the rate (too fast or too slow), an irregularity in the heartbeat pattern, or a problem in the location where electrical signals are formed in the heart. Some arrhythmias may be harmless and do not require treatment, while others can be serious and life threatening.

Cats of any age or sex may experience arrhythmias. Certain breeds are predisposed to specific types of heartbeat abnormalities. For example, Maine Coon cats and Persian cats seem predisposed to developing cardiomyopathy (a problem with the heart muscle that can be associated with changes in heart rate and rhythm).

What Causes an Arrhythmia?

There are many types of heart rhythm disturbances, and just as many potential causes. While heart disease can cause an arrhythmia, an arrhythmia does not necessarily indicate that your cat has a heart condition. Other causes of heart arrhythmias include:

- Hyperthyroidism (too much thyroid hormone in the blood)
- Imbalances in electrolytes (substances in the blood)
- Anemia
- Drug reactions
- Tumors
- Trauma

What Are the Signs of an Arrhythmia?

Cats with arrhythmias that are relatively harmless may show no outward signs. In many cases, however, an arrhythmia can lead to heart failure, changes in blood pressure, and alterations in blood flow to vital organs. Cats with these types of arrhythmias may show signs such as:

- Weakness, depression
- Difficulty breathing
- Pale gums
• Collapse
• Sudden death

How Is This Condition Diagnosed?

Your veterinarian may note an irregularity in the heartbeat when listening to your pet’s heart with a stethoscope. An electrocardiogram (ECG) can provide additional information to further define the type of arrhythmia present.

If your veterinarian suspects that the abnormality is caused by a heart condition, he or she may recommend chest radiographs (x-rays) and/or an echocardiogram, which is an examination of the heart using ultrasound equipment. Depending on your pet’s condition, the veterinarian may refer your pet to a veterinary cardiologist (a heart specialist).

Since many other factors besides heart disease can cause arrhythmias, your veterinarian will probably also suggest doing blood work to look for underlying diseases or conditions.

How Are Arrhythmias Treated?

If the arrhythmia is caused by an underlying condition, such as hyperthyroidism, treating the underlying disease may help resolve the arrhythmia. Otherwise, the goal of treatment is to eliminate or manage any discomfort your cat may have and prevent dangerous arrhythmias from leading to sudden death.

Numerous medications can help control arrhythmias. Many of these drugs may have side effects, so be sure to ask your veterinarian if there are signs you should watch for. In some cases, it is recommended that a pacemaker be implanted for long-term control of the arrhythmia.

Once your pet is diagnosed with an arrhythmia, your veterinarian may recommend periodic recheck examinations to evaluate your pet’s heart rate/rhythm and assess your pet’s response to treatment. Blood work, echocardiography, and other diagnostic tests sometimes need to be repeated periodically to help protect your pet’s health.
Cardiac Exam

- A cardiac exam evaluates the function of the cardiovascular system.
- The exam is performed by your veterinarian to determine the health of your pet's heart.
- The exam is especially important for older animals, pets with a history of heart problems, or breeds that are at increased risk for developing heart problems.
- Early diagnosis and treatment of heart disease are very important.

What Is a Cardiac Exam?

A cardiac examination is an evaluation of the cardiovascular system, which includes the heart, lungs, and blood vessels. Many elements of a cardiac exam are usually performed (to some extent) during a routine physical examination in pets of all ages. However, for older animals, pets with a history of heart problems, or pets that are at risk for developing heart disease, more extensive testing is sometimes recommended.

What Happens During a Cardiac Exam?

During your visit, your veterinarian will ask you specific questions about your pet's heart health and overall health. Signs of heart disease can be vague and may include coughing, breathing problems, weakness, fainting episodes, and exercise intolerance (getting tired easily or refusing to exercise). A thorough physical exam is usually performed in combination with a cardiac exam. Your pet’s vital signs, including blood pressure, heart rate, and respiratory rate, are checked to determine heart health. These signs may be checked by a veterinary technician, who reports the findings to your veterinarian. Your veterinarian will also check your pet’s capillary refill time by gently pressing on the gums with a fingertip and then removing the finger while counting the number of seconds it takes for the color of the gums to return to normal. This test can help determine how well your pet’s blood is circulating and whether your pet is dehydrated. Pale gums may indicate a heart problem, circulation problem, or anemia (low number of red blood cells). Dark or blue gums can also signal a problem.

Your pet’s pulse rate and quality are generally checked during a cardiac exam. If pulses are weak, irregular, or otherwise abnormal, your veterinarian will try to determine the cause.

What Tests Are Performed During a Cardiac Exam?

Auscultation: Your veterinarian will listen to your pet's heart and lungs using a stethoscope, which magnifies the sounds of the heart and lungs. The scientific term for this process is auscultation. As your veterinarian listens, he or she may detect irregular heartbeats or sounds, an abnormal rhythm, or a heart murmur, all of which can be associated with heart disease. Your veterinarian will use the stethoscope to listen to the lungs for abnormal sounds, such as sounds produced by fluid buildup, which can occur in certain types of heart disease.

Blood testing: Results of blood tests can provide your veterinarian with a large amount of information about your pet’s heart. For example, heartworm disease can damage your pet’s heart and lungs, so your veterinarian may recommend blood testing to check for this infection. Other
useful blood tests may include a chemistry profile and a complete blood count (or CBC). Many irregularities, such as dehydration, abnormal sodium or potassium levels in the blood, or anemia (a low number of red blood cells), can make it more difficult for your pet’s heart to perform efficiently.

**Electrocardiography:** Electrocardiography (also called an *ECG* or *EKG*) is used to check for abnormalities in the heart’s rhythm. An ECG can determine whether the heart is beating too slow or too fast or whether there are irregular beats. An ECG detects electrical changes associated with the beating of the heart. The electrical changes are recorded by the ECG machine and then interpreted by a veterinarian.

**X-rays:** Chest x-rays are used to determine the size, shape, and position of the heart. Because heart disease causes the heart to work too hard, the heart muscle can become thickened, and the heart can become enlarged. X-rays also show your veterinarian your pet’s lungs. Certain types of heart disease cause fluid to accumulate in the lungs. Other lung problems, such as asthma, can also be evaluated when your veterinarian looks at x-rays. The large vessels associated with your pet’s heart and lungs can also be examined using x-rays.

**Blood pressure:** Your veterinarian may have equipment that can measure your pet’s blood pressure during a cardiac exam. Blood pressure that is too low or too high may need to be treated with medication.

**Cardiac ultrasound:** Your veterinarian may have equipment that can perform a cardiac ultrasound examination (or echocardiogram). The ultrasound machine is connected to a small handheld probe that is held against your pet’s chest. The probe sends out painless sound waves that bounce off of structures in your pet’s chest (such as the heart and blood vessels) and return to a sensor inside the ultrasound machine. This creates an image on a screen that can tell your veterinarian a great deal of information about your pet’s heart.

**What Are the Benefits of a Cardiac Exam?**

A cardiac exam is important to assess the overall health of the heart and circulatory system. Your pet may have underlying heart issues that may not be obvious, and catching them early is important. Many heart conditions can be managed successfully, if caught early.
Caring for Orphaned Kittens

- Orphaned kittens should be taken to a veterinarian immediately. Your veterinarian can give you advice on caring for kittens and might be able to provide you with contact information for animal rescue groups.
- During the first few weeks of life, kittens need proper nourishment, warmth, socialization, and help with urinating and defecating.
- Don’t give regular cow’s milk to kittens because it doesn’t contain the protein and nutrients that kittens need and it can give them (and adult cats) diarrhea.

Orphaned kittens should be taken to a veterinarian immediately. Your veterinarian can give you advice on caring for kittens and might be able to provide you with contact information for animal rescue groups. During the first few weeks of life, kittens need proper nourishment, warmth, socialization, and help with urinating and defecating.

Feeding

Kittens need two to three times as many calories as an adult cat. A mother cat’s milk provides all of a kitten’s nutritional needs during the first 4 weeks of life. Newborn kittens may nurse every 1 to 2 hours.

If you find orphaned kittens, ask your veterinarian or an animal welfare group to help you find a mother cat with a small litter because she may be able to nurse the kittens. If you cannot find a foster mother cat, ask your veterinarian to teach you how to bottle feed kittens with a commercial kitten formula milk replacer. Don’t give regular cow’s milk to kittens because it doesn’t contain enough of the protein and nutrients that kittens need and it can give them (and adult cats) diarrhea.

Kittens should be fed while on all four legs or lying upright on their stomachs (the same position for nursing from the mother). If kittens are bottle fed, they must be burped by holding them to your shoulder and gently rubbing their backs. Be careful not to overfeed or underfeed kittens; your veterinarian can teach you how to tell when kittens are full. Notify your veterinarian immediately if a kitten refuses to take a bottle, seems weak, or has problems nursing from a bottle.

For the first 3 weeks of life, orphaned kittens are usually bottle fed with kitten formula milk replacer every 2 to 4 hours. When kittens are 3 to 4 weeks of age, feed them a kitten milk replacer mixed with small amounts of moist, easily chewable, commercial kitten food four to six times each day. You can warm the milk replacer and mix it with some “mashed” kitten food in a shallow saucer. During this period, milk replacer should gradually be decreased and replaced with free access to clean water. Feed a name-brand kitten food with the American Association of Feed Control Officials (AAFCO) statement on the bag or label ensuring that the food is nutritionally balanced for kittens. Look for this AAFCO label whenever selecting food for a kitten or adult cat to ensure that the diet is appropriate for the life stage of the cat. By 6 to 7 weeks of age, kittens can be offered dry or canned commercial kitten food. At 6 to 12 weeks of age, kittens should be fed four times a day. At 3 to 6 months of age, kittens should be fed
commercial kitten food three times a day. Kittens can be weaned onto adult cat food when they approach 9 months of age.

Weight

An average birth weight for kittens is about 3.5 ounces, depending on breed and litter size. During the first weeks of life, a kitten’s body weight may double or triple. Kittens should gain 0.25 to 0.5 ounces daily until weaning. If a kitten looks too thin (e.g., ribs are showing) or its belly looks too fat, ask your veterinarian if your kitten’s weight is within a healthy range.

Providing Warmth

For the first 2 weeks of life, orphaned kittens must be kept warm. Please ask your veterinarian about the ideal temperature of heat sources such as a heating pad or a hot water bottle wrapped in a towel. Be sure that the heat source is not too warm; kittens can be seriously burned. Also, the heat source should be placed so that the kitten can move away from it to cool down. If you use a heating pad, monitor it to ensure that it is functioning properly and that the temperature setting is not too high.

Socialization

To be properly socialized to people, kittens should be handled from 2 through 7 weeks of age; this period is considered an important time for socialization. If you are caring for kittens younger than 2 weeks, consult your veterinarian for guidelines about how much they should be handled. Kittens that have human contact before they are 10 to 12 weeks old are more likely to interact well with people throughout their lives. Kittens must be handled gently; therefore, young children should be supervised when handling kittens. To aid socialization, orphaned kittens should be kept with their littermates until they are about 10 weeks old.

Encouraging Excretion

After feeding, a mother cat grooms her kittens, especially in the anal area. This stimulates urination and defecation (excretion), which kittens need help with until they are 3 weeks old. To encourage orphaned kittens to excrete, after each meal, dip a soft washcloth or a cotton ball in warm water and gently massage the kitten’s anal and urinary areas; the warmth, texture, and movement mimic a mother cat’s tongue.

When kittens are 4 weeks of age, teach them to use a litterbox by placing them in it after meals. Leave some waste in the litterbox; the scent can help direct kittens to it when they have to excrete. One side of the litterbox can be cut open to make it easier for kittens to get in and out.

Cleaning

Kittens tend to get messy during feedings, so they need to be cleaned regularly. Gently wipe them clean using a washcloth moistened with warm water. Dry them immediately with a towel or hair dryer set on low.
Veterinary Care

An initial veterinary examination should be scheduled as soon as you obtain an orphaned kitten. Birth defects and other health issues can be brought to your attention. This initial examination is also an ideal time to address any feeding questions or other concerns about home care.

Intestinal parasites are common in kittens. Deworming medication can be given when the kittens are approximately 3 weeks old. Fecal examinations and dewormings are usually repeated every 3 to 4 weeks until two consecutive fecal examinations have negative results. External parasites (fleas, ticks, and mites) are treated with products approved for use on kittens.

Orphaned kittens need to receive initial vaccinations at 8 or 9 weeks of age. Testing for infectious diseases such as feline leukemia and feline AIDS is usually performed at this time if testing was not done earlier.

Kittens should be spayed or neutered by 6 months of age. This helps to control pet overpopulation and reduces the chance of behavior problems and some medical conditions.
Caring for Your New Kitten

- Kittens should be fed a nutritionally complete, name-brand kitten food with the American Association of Feed Control Officials (AAFCO) statement on the bag or label. Proper nutrition is especially important for kittens, which need two to three times as many calories and nutrients as adult cats.
- Don’t give regular cow’s milk to kittens because it doesn’t contain the protein and nutrients that kittens need and it can give them (and adult cats) diarrhea.
- Your kitten must receive veterinary care before being introduced to other cats.
- Your kitten must be vaccinated against various diseases according to a schedule, beginning at 2 to 3 months of age.
- Kittens should be spayed or neutered by 6 months of age. This helps to control pet overpopulation and reduces the chances of some behavioral and medical problems.

During the first 8 to 10 weeks of life, kittens have specific needs for nourishment, warmth, socialization, and excretion. If you find orphaned kittens younger than 8 to 10 weeks of age, take them to a veterinarian immediately. Your veterinarian can give you advice on caring for them and might be able to give you contact information for animal rescue groups. For more information, see the Care Guide titled “Caring for Orphaned Kittens.”

The following information pertains to caring for kittens that are at least eight to 10 weeks of age, the time at which they can safely be taken from their mother and littermates. For optimal social development, a kitten should remain with its mother and/or littermates until 12 weeks of age. A kitten that is taken from its mother before weaning is complete may develop the troublesome behavior of suckling on nearby items or fingers.

Feeding

Proper nutrition is especially important for kittens, which need two to three times as many calories and nutrients as adult cats. Kittens should be fed a name-brand, nutritionally complete kitten food with the American Association of Feed Control Officials (AAFCO) statement on the bag or label. This ensures that the food is nutritionally balanced for kittens. Kitten food should be fed until adulthood, which begins between 9 to 12 months of age. Consult your veterinarian for the exact amount to feed and for help creating a long-term feeding schedule suited to your kitten’s needs. When your kitten is 3 to 6 months old, feed him or her three times per day. When your kitten is six months old, you may consider feeding twice daily.

Cow’s milk should never be given to kittens or cats because it is nutritionally inadequate and can give them diarrhea.

Clean, fresh water should be available at all times and changed at least daily.

Veterinary Care
Your kitten should have a physical examination by a veterinarian as soon as possible. This examination can provide an opportunity to (1) identify birth defects and other health issues, (2) address questions about feeding and other home care, and (3) schedule a preventive health plan.

To prevent the spread of a disease or parasites, your kitten should be separated from all other household pets for a quarantine period of at least a few weeks. During this time, your veterinarian should test your kitten for parasites and infectious diseases such as feline leukemia virus and feline immunodeficiency virus—especially if this testing was not performed before you obtained your kitten. Observe your kitten closely for any signs of illness. Any problems should be reported to your veterinarian before introducing your kitten to your other pets. Contact your veterinarian immediately if your kitten has any of the following:

- Lack of appetite
- Poor weight gain
- Vomiting
- Swollen or painful abdomen
- Lack of activity
- Diarrhea
- Difficulty breathing
- Coughing or wheezing
- Constant or frequent crying
- Pale gums
- Swollen, red eyes or eye discharge
- Nasal discharge
- Inability to pass urine or stool

Your kitten must be vaccinated against various diseases according to a schedule, beginning at 2 to 3 months of age.

Intestinal parasites are common in kittens. Fecal examinations and treatments (dewormings) are usually repeated until two consecutive fecal examinations have negative results. External parasites (fleas, ticks, and mites) are treated with products approved for use on kittens. Ask your veterinarian for details.

Your kitten should be spayed or neutered by 6 months of age. This helps to control pet overpopulation and reduces the chance of some behavior problems and medical conditions.

Socialization

After the quarantine period discussed above, your kitten can be gradually introduced to other pets with care and supervision. Ask your veterinarian for advice on the best way to do this.

Handling and playing with your kitten daily can help you bond with him or her. Monitor children closely to help prevent injury to the kitten or family members.

Creature Comforts
Before you bring your kitten home, prepare a small room or space that will be his or her own for the first few days or weeks. Even if you don’t have to quarantine your kitten from other pets, having a small area to explore at first will help your kitten get comfortable with his or her new home.

Cats don’t like to eat next to the litterbox, so place the litterbox on one side of the room and the food and water dishes on the other. Make sure that your kitten can get in and out of the litterbox without help; it might be necessary to provide a litterbox with low sides.

To help your kitten feel secure, make sure that the room has hiding places. If there isn’t furniture to hide beneath, place cardboard boxes on their sides or cut doorways into them.

Providing a warm, comfortable bed is essential. You can purchase a pet bed or line a box with something soft; using a sweatshirt that you’ve worn will help your kitten get used to your scent.

Enjoy your new kitten, and let your veterinarian know if you have any questions.

**Kitten Supplies**

- Brand-name, nutritionally complete kitten food with the American Association of Feed Control Officials (AAFCO) statement on the bag or label
- Food and water bowls; ceramic and metal are preferred because some pets are sensitive to plastic
- Cat toys that don’t have small parts or string that can come off and be swallowed
- Cat brush; brush your kitten gently twice weekly (daily for long-haired cats)
- Cat toothpaste and toothbrush; it’s best to start toothbrushing during kittenhood; aim for at least three times per week
- Breakaway collar and identification tag
- Scratching post and/or pad; when your kitten uses it, reward him or her with praise and/or a feline treat
- Litterbox
- Litter; low-dust, unscented, non-clumping litter is best
- Cat carrier
- Cat bed
Caring for Your Pet After Surgery

- After your pet has surgery, it is important to strictly follow your veterinarian’s recommendations for rehabilitation and recovery.
- Before you leave the hospital, ensure that you understand all of your veterinarian’s instructions.
- Some swelling will be normal immediately after surgery, but watch the surgery site carefully for any signs of oozing, odors, heat, pain, or redness.
- It is critical to keep all of your pet’s recommended follow-up appointments so that your veterinarian can monitor your pet’s progress.

The type of surgery that your pet undergoes determines the in-hospital recovery time and when you will be able to pick up your pet. Because the period immediately following surgery is when most complications occur, it is important to follow your veterinarian’s suggestion for when to pick up your pet. If you would like to visit your pet in the hospital, ask your veterinarian if that would be okay.

Before You Leave the Practice

When your pet is ready to be released (discharged) from the hospital, you’ll be given instructions for at-home care. You’ll also be told when to return for a follow-up examination or to have sutures removed; you can make the appointment before you leave. Before you leave the hospital, make sure that you understand all of your veterinarian’s instructions. Ask to review them with a veterinary technician if you have questions. If you’re unsure of something, such as how to administer a medication, your pet might sense this and become difficult to handle; but if you’re confident and calm, your pet will likely be easier to handle. If you don’t think that you will be able to carry out a particular part of your pet’s at-home care, ask your practice what kind of outpatient support they can provide. Find out what the practice’s procedures are for after-hours help if there is a problem.

We’re Home! Now What?

- Carefully follow all of your veterinarian’s at-home instructions.
- Recognize that your pet may still be feeling the effects of anesthesia and may be unsteady on his or her feet even hours after the procedure. Initially keep him or her in a quiet and contained place if necessary. Although your pet might want to return to his or her regular routine, you need to ensure that your pet gets adequate rest.
- Pets recovering from surgery should be allowed outdoors only to urinate or defecate. When taking your pet outdoors for bathroom breaks, keep him or her on a leash at all times; follow your veterinarian’s instructions regarding whether you should attach the
leash to a collar or harness. Ask your veterinarian to show you the best way to lift or support your pet when it is required.

- If your pet is receiving medication (especially pain medication), his or her reflexes may be slow, so try to restrict your pet’s activity to prevent injury; for example, your pet should avoid stairs and slippery floors. Keep your pet in a safe area and ensure that he or she receives all the medication that your veterinarian prescribed. “Crate rest”—that is, keeping your pet in an appropriately sized crate to restrict activity—may be recommended. See Keeping Your Crated Pet—and Yourself—Sane, below, for tips on managing this kind of care.
- Supervise your pet’s eating and drinking. Provide food and water in small amounts until you are sure your pet is back to normal. Follow all instructions for special nutritional requirements.
- Make sure that your pet is urinating and defecating as expected. Be aware that some pets, especially if they have been given fluids during surgery or hospitalization, may need more frequent bathroom breaks.

**Monitoring Surgical Sites**

Some swelling will be normal immediately after surgery, but watch the surgery site carefully for any signs of oozing, odors, heat, pain, excessive bruising, or redness. Do not allow your pet to scratch or chew at the sutures or bandage. An Elizabethan collar—also known as an “e” collar—may be necessary to prevent your pet from chewing the wound. If something doesn’t look right, call your veterinarian immediately.

**Recovery Times**

Typically, full recovery from an extensive orthopedic surgery, such as total hip replacement, takes at least 2 to 3 months. Some dogs require 6 months of careful monitoring and rehabilitation before they reach optimal recovery. Other, less invasive surgeries, such as neutering or ovariohysterectomy (spaying), may require only a matter of days or weeks for recovery.

**Follow Up**

It is critical to keep all of your pet’s recommended follow-up appointments so that your veterinarian can monitor your pet’s progress. If sutures were used, your veterinarian may need to remove them. If a cast was placed, your veterinarian will want to check it periodically and eventually remove it. Radiographs (“x-rays”) or other tests may be scheduled to assess healing.

Physical therapy, including massage and hydrotherapy, may also be helpful to your pet’s recovery and may be prescribed.

**Keeping Your Crated Pet—and Yourself—Sane**

It’s hard to know whether crate rest is harder on the pet or the owner. This can be a trying time, but no matter how “sad” or how much “better” your pet seems to be, it is vitally important to observe all of your veterinarian’s restrictions. You can make the time go faster for your pet by
keeping him or her occupied with plenty of toys and an occasional low-calorie treat; turning on a radio or television for company sometimes works well. Daily grooming can also be a welcome distraction for some pets. You can help keep your pet entertained by placing your pet’s crate in a high-traffic area where he or she can watch the household’s activity. If your pet is easily agitated, you might prefer to keep the crate in a quiet room to reduce stress.
Cat Litter

- Most cats prefer unscented, scoopable (sandlike) litter.
- Many owners prefer scoopable litters because they control odors and absorb liquid (clump) well.
- Cats may stop using the litterbox if something about it becomes unappealing.

What You Need to Know

A variety of cat litters are available commercially, including litters made of clay, plastic, wheat, sawdust, newspaper pellets, and corn cobs. The choice depends on what matters most to you and your cat. You may have to try a few to see what you and your cat like. Most cats prefer unscented, scoopable litter because of its sandlike texture. Many owners prefer scoopable litters because they control odors and absorb liquid (clump) well, making it easy for owners to scoop out urine “balls.” This leaves the remaining litter dry and odor free.

Unscented litters are preferred by cats because they want to be able to identify some of their own scent in their litter. Perfume, fragrance, or deodorizer is not necessary to prevent litterbox odor and can make a litter undesirable to a cat. If you scoop out the wastes at least twice a day, the litterbox should be odor free.

If you require a completely dust-free litter, you might prefer newspaper pellets, which have an ingredient that helps control odor. Regular shredded newspaper isn’t recommended because it's messy and doesn’t control odor.

A Cat’s Basic Requirements for Litter

- The litter should be acceptable for standing on.
- It should allow easy digging.
- It should be odorless.

Reasons a Cat Won’t Use the Litterbox

Cats are usually easy to litter train because they are naturally clean and prefer to bury their waste. However, cats may stop using the litterbox if something about it becomes unappealing.

If your cat won’t use the litterbox, try addressing the following bulleted list, but do not punish your cat. He or she may have a medical or behavior problem that your veterinarian can address.

- The type of litter was changed. Most cats prefer an unscented, scoopable (sandlike) litter. If you have a new kitten or cat, provide the litter that he or she has been using. If you would like to start using a different litter, gradually start mixing it into the original litter so that your cat won’t reject it.
- The litterbox location was changed. Most cats prefer a quiet place with several escape routes.
• The litterbox is dirty. Scoop it out at least twice daily, add new litter as needed, and wash the box with baking soda or an unscented soap and fill it with clean litter at least once every 2 weeks.
• The litterbox is too small.
• The type of litterbox was changed.
• The litterbox has a liner or hood, which some cats dislike.
• The litterbox isn’t easily accessible.
• There aren’t enough litterboxes. Provide one litterbox per cat, plus one extra box.
• There’s too much litter in the litterbox. Most cats prefer the litter to be one to two inches deep.
• Your cat’s food dishes are too close to the litterbox.

If you continue to have litterbox issues with your cat, let your veterinarian know.
Cat Supplies

Every well-kept cat needs some basic supplies. Many kinds of supplies are available, so your choices will depend on your and your cat’s needs and preferences. Here are some basic guidelines regarding cat supplies.

Food and Water Dishes

Metal or ceramic dishes are best because plastic can cause a skin reaction in some cats. Make sure that you give your cat fresh water every day.

Toys

The best cat toys can be made to look alive, such as wand toys from which something dangles. Wand toys should be put away after play so that (1) you can use them to interact and bond with your cat, (2) you can inspect them to ensure that they are still safe, and (3) your cat is less likely to become bored with them. Balls, food puzzle toys, and catnip toys are other feline favorites. Don't use your hands or fingers as “toys” for kittens or cats; this may lead to unwanted biting and scratching behaviors. Some cats become very excited and even aggressive when exposed to catnip, so be careful around your cat during and after play with catnip toys.

Food puzzle toys are sturdy containers, usually made of hard rubber or plastic, with holes in which food or treats can be placed. Cats must paw, roll, chew, or lick the toy to remove the food. Food puzzle toys can offer a natural solution to your cat’s hunting instinct.

Brush and Comb

The various types of brushes and combs are designed for different purposes. Read more about them in the Cat Grooming Care Guide. Brushing your cat helps to remove dirt and loose, dead hair; prevent mats and tangles; and reduce the amount of hair your cat swallows during grooming, possibly leading to fewer hairballs.

Safety Cat Collar With ID Tag

A safety (breakaway) collar can prevent your cat from getting hurt if the collar gets caught on something. Even indoor-only cats can get outside and become lost, so a collar and ID tag are recommended for all cats.

Scratching Posts and/or Pads

Cats need to scratch to keep their nails healthy. Provide your cat with a sturdy scratching post that is at least 3 ft high to allow him or her to do a full-body stretch when scratching. The post should be covered with rough material such as sisal, burlap, or tree bark. Many cats also like scratching pads. Sprinkle catnip on the posts or pads once or twice a month to maintain your cat’s interest in them.
Litterbox

Many cats prefer large, uncovered litterboxes, although some cats like covered litterboxes. If you have more than one cat, you’ll need one litterbox per cat plus one more litterbox.

Litter and Litter Scoop

Many cats prefer unscented, scoopable litter. For more information, see the Cat Litter Care Guide.

Cat Carrier

A safe, comfortable carrier is essential.

Bed

A warm, comfortable bed is very important for your cat. Be sure to clean your cat’s bedding regularly.

Leash and Harness

A safe option for allowing your cat outdoors is to train him or her to walk on a leash with you. First, you must train your cat to accept a harness (for walking your cat, a harness is much more secure than a collar). Ask your veterinarian for advice about this.

Cat Toothbrush and Toothpaste

Use a specially designed pet toothbrush or baby toothbrush with pet toothpaste (do not use toothpaste for people because it can upset your cat’s stomach).

Cat Supplies Checklist

- Food and water dishes
- Toys
- Brush and comb
- Safety cat collar with ID tag
- Scratching posts and/or pads
- Litterbox
- Litter and litter scoop
- Cat carrier
- Bed
- Leash and harness
- Cat toothbrush and toothpaste
CBC and Chemistry Profile

- A CBC (complete blood count) and chemistry profile is an important component of wellness blood work that your veterinarian may want to perform during your pet’s regular checkups.
- A CBC and chemistry profile can help determine the state of your pet’s health and diagnose illness or injury.
- Minimal risk is associated with performing a CBC and chemistry profile, and the information gained is invaluable.

What Is a CBC and Chemistry Profile?

Blood testing is commonly used to help diagnose disease or pinpoint injury in animals. It can also help determine the state of your pet’s health during regular physical exam visits. Although a CBC or a chemistry profile can be performed separately, these tests are frequently done at the same time; when the results are interpreted together, they provide a good overview of many of the body’s functions. As with any other diagnostic test, results of a CBC and chemistry profile are not interpreted in a vacuum. Your veterinarian will combine this information with physical exam findings, medical history, and other information to assess your pet’s health status and determine if additional testing should be recommended.

Complete blood count (CBC)

The CBC can help determine many things about your pet, including whether he or she is dehydrated, anemic (having inadequate numbers of red blood cells), or dealing with an infection. The CBC measures the quantity and quality of red blood cells, white blood cells, and platelets. The CBC results may list abbreviations for the various tests included in a CBC:

- **HCT** is the hematocrit, which indicates how many red blood cells are present. A low HCT might indicate anemia, and a high HCT could indicate dehydration.
- **Hgb** is the quantity of hemoglobin, which can help determine how well the red blood cells are carrying oxygen to the body’s tissues.
- **WBC** is the total white blood cell count. Certain types of white blood cells may increase in number when there is infection or inflammation in the body. If the total number is low, it could mean several things, including a severe infection that has overwhelmed the body, or a bone marrow problem that is limiting production of white blood cells. There are several different types of white blood cells, which respond to different events in the body. **EOS** (eosinophils) are white blood cells that tend to increase in number when the body is dealing with an allergy problem or various parasites.
- **PLT** is the quantity of platelets (also called the platelet count). Platelets are involved in the body’s blood clotting process, so if the platelet number is low, the patient may develop problems with the ability to form blood clots.

Chemistry Profile
The chemistry profile measures a variety of chemicals and enzymes (proteins that are involved in the body’s chemical reactions) in the blood to provide very general information about the status of organ health and function, especially of the liver, kidneys, and pancreas. The chemistry profile also shows the patient’s blood sugar level and the quantities of important electrolytes (molecules like sodium, calcium, and potassium) in the blood.

- Chemistry values that help provide information about the liver include the ALKP (alkaline phosphatase), ALT (alanine aminotransferase), AST (aspartate aminotransferase), and TBIL (total bilirubin).
- Chemistry values that help evaluate the kidneys include the BUN (blood urea nitrogen) and CREA (creatinine). Of these two values, the creatinine is a more sensitive indicator of kidney damage. There should be concern even if it’s only slightly elevated.
- AMYL (amylase) and LIP (lipase) are enzymes produced by the pancreas.
- Electrolytes are checked for quantity and for proportion to other electrolytes. They include Ca (calcium), Cl (chloride), K (potassium), Na (sodium), and PHOS (phosphorus). Electrolyte abnormalities can be associated with many types of health issues. For example, a low calcium level can result in muscle tremors or seizures.

**How Is a CBC and Chemistry Profile Performed?**

To perform a CBC and chemistry profile, your veterinary team must first obtain a small blood sample from your pet. This procedure is usually very quick; it may take only a few seconds if the patient is well behaved. For patients that are very frightened or not well behaved, your veterinary team may want to use a muzzle, towel, or other gentle restraint device. In some cases, such as in patients with very thick fur, it may be necessary to shave the hair from the area where blood will be drawn. This is often a good way to find the vein quickly, and the hair will grow back.

Some veterinary offices have in-house blood analysis equipment, so they can perform a CBC and chemistry profile in the office and have results the same day. Other offices send blood samples to an outside laboratory for these tests to be performed. If an outside laboratory is used, results are generally available within 1 to 2 days.

Because a recent meal changes the blood and may affect the results of a chemistry profile, your veterinarian may recommend that your pet not receive any food for 8 to 12 hours before blood is drawn. In most cases, water can still be offered. Please let your veterinarian know if this temporary fast will be a problem for you or your pet.

Also, be sure to tell your veterinarian about any medications or supplements that your pet is receiving, as some products can alter the results of a chemistry profile.

**What Is a CBC and Chemistry Profile Used For?**

A CBC and chemistry profile is an important component of wellness blood work. Your veterinarian may recommend wellness blood work during your pet’s regular exams. Even if your pet is young and healthy, performing this testing periodically helps establish “normal” values for your pet. The next time blood work is performed, your veterinarian can compare the results with
previous results to see if anything has changed. Depending on your pet’s age and health history, additional tests (such as thyroid testing or urinalysis) may also be recommended as part of wellness testing. For seniors or chronically ill pets, your veterinarian may recommend blood work more frequently. Wellness blood work screens for many medical conditions, including diabetes and kidney disease. In many cases, early diagnosis and management can improve quality of life and the long-term prognosis for pets with chronic illnesses.

When a pet presents with clinical signs indicating an illness, a CBC and chemistry profile is often performed very early during the diagnostic process. Even if results of this initial testing are all “normal,” this information can rule out a variety of medical conditions. If results of a CBC and chemistry profile are abnormal or inconclusive, your veterinarian may recommend additional testing to get closer to a diagnosis.

A CBC and chemistry profile is also part of routine blood work that is performed before a pet undergoes general anesthesia for a surgical procedure. If test results are abnormal, your veterinarian may recommend additional precautions to help ensure your pet’s safety during the procedure. Your veterinarian may also recommend postponing the procedure or choosing an alternative treatment option.

Performing a CBC and chemistry panel poses minimal risk for your pet, and in many cases, the information your veterinarian gains from this testing is invaluable.
Cherry Eye (prolapsed nictitans gland)

- Cherry eye is a condition in which the tear-producing gland of the eye appears as a red, round mass on the inside corner of the pet’s eye.
- The condition usually occurs in young dogs and, rarely, in cats.
- Surgical correction is usually required to secure the gland in place behind the third eyelid.

What Is Cherry Eye?

Like people, animals have upper and lower eyelids. However, they also have a third eyelid on the inside corner of each eye for extra protection of the eye’s surface. Tucked beneath this third eyelid is the nictitans gland, a small, pinkish mass of tissue that helps produce tears to lubricate the eye.

Occasionally, this gland can stick out from behind the third eyelid and become inflamed and swollen. This condition is called a prolapsed nictitans gland, or, more commonly, cherry eye, most likely because the gland appears as a red, round mass on the inside corner of the pet’s eye. Cherry eye may occur in only one eye or in both eyes.

What Causes Cherry Eye?

Normally, the nictitans gland is anchored into place. Weak attachments may cause it to become loose and protrude outside the third eyelid. Cherry eye usually occurs in young dogs under the age of 2 years and in breeds such as Boston terriers, cocker spaniels, beagles, and bulldogs. It is not common in cats.

What Are the Signs of Cherry Eye?

If your pet has cherry eye, you will notice a round, red swelling on the inside corner of the pet’s eye. The eye itself may appear to be red and inflamed, and your pet may produce more tears and blink more often.

How Is Cherry Eye Treated?

Surgical correction is generally required to secure the gland back in place. This surgery is preferred over removal of the gland, because the gland is an important source of tears to lubricate the eye. Removal of the gland may result in another condition, called dry eye, in which the eye does not produce enough tears.

After surgery, your pet may require topical medications to reduce swelling of the gland and an Elizabethan collar to prevent pawing at the eye.
Chest Radiography

- Chest radiography is painless, very safe, and noninvasive, and it can sometimes be performed during an outpatient visit while you wait.
- Chest radiography helps evaluate the size, shape, and position of the heart.
- Chest radiography helps evaluate the lungs for the presence of fluid or other abnormalities.
- Radiography can help your veterinarian diagnose numerous medical conditions involving the heart and lungs.

What Is a Radiograph?

A radiograph (sometimes called an x-ray) is a type of photograph that reveals the body’s bones and internal organs. The procedure for obtaining a radiograph is called radiography. Radiography is a very useful diagnostic tool for veterinarians because it can help obtain information about almost any organ in the body, including the heart, lungs, and abdominal organs, as well as the bones.

How Does Radiography Work?

Traditional radiography machines use very low doses of radiation delivered in a focused beam (an x-ray) that is aimed at a photographic plate containing specialized photographic film. The patient is positioned between the x-ray beam and the photographic plate. When the x-ray beam passes through the patient, an image is created on the specialized film. Structures that are very thick or dense, such as bone, do not allow much of the beam to penetrate and expose the film. These structures look very bright or white on a radiograph. In contrast, structures that are not dense (such as air in the lungs) allow the beam to penetrate more completely and expose the film. As a result, these structures appear relatively dark when the radiograph is viewed. Structures that are of medium density, such as fluid, appear in various shades of gray on the film.

Digital radiograph machines use a very similar principle, but the final image can be much sharper and can show greater detail than images obtained from traditional radiography machines.

How Is Chest Radiography Performed?

Chest radiography is painless, safe, and completely non-invasive. Your pet will be positioned on the x-ray table, and the width of the chest will be measured. This is necessary so that the intensity of the x-ray beam can be precisely adjusted to capture the most accurate information. Once the measurements are complete, the x-ray tube (which will generate a beam of low-level radiation) is aligned over the chest, and a button is pushed on the radiograph machine to take the “photograph.” This part of the procedure is very much like taking a photograph with a camera. In most cases, at least two pictures are taken from different angles to create a three-dimensional image of the heart and lungs.
Your veterinarian may recommend that your pet receives sedation before undergoing radiography. Patients that are sedated are much easier to position because they are completely relaxed. Sedation may also be recommended if the patient is in pain.

What Are Chest Radiographs Used For?

Chest radiography may be recommended to investigate a variety of clinical signs, including:

- Coughing
- Excessive panting
- Difficulty breathing
- Lethargy
- Weight loss

Chest radiography can evaluate the size, shape, and position of the heart. Heart enlargement, for example, may indicate heart disease.

Chest radiographs also evaluate the lungs for abnormalities. Normally, the lungs should be filled with air, so they should appear relatively dark on a radiograph. If there is other material in the lungs, such as fluid, blood, or scar tissue, the lungs will appear brighter than normal. Fluid in the lungs may suggest pneumonia, hemorrhage (bleeding), heart disease, or another illness. Other densities in the lungs may suggest a tumor, scar tissue, or other abnormality. Asthma and emphysema can also change the way the lungs appear on radiographs.

Chest radiographs also show the trachea (windpipe) and large airways. Diseases and conditions such as bronchitis and a collapsing trachea can change the appearance of these organs on radiographs. Tumors, depending on their size and position, can also be detected using radiography.

What Are the Benefits and Risks of Chest Radiography?

Radiography has many benefits and very minimal risks. It is very safe, completely painless, and non-invasive. It is available in most veterinary practices and can sometimes be performed during an outpatient visit while you wait. Depending on the type of radiographic study being performed, the procedure may take only a few minutes.

The risks of radiography are minimal. Because the level of radiation exposure needed to perform radiography is very low, even pregnant females and very young pets can undergo radiography. If a pet is very unstable, such as a pet with severe breathing difficulties, the stress of performing radiography may be a concern. In these cases, it may be necessary to stabilize the pet (with oxygen or other therapy) before attempting to perform radiography. In the vast majority of cases, the benefits of performing radiography far outweigh the possible risks. Radiography is a valuable tool for your veterinarian because it can provide critical information about many different illnesses and medical conditions.
Chocolate Toxicosis

- Toxicosis is disease due to poisoning.
- Chocolate toxicosis is a common problem in dogs, but less common in cats.
- Depending on how much chocolate is ingested, the signs can range from a simple stomach upset to life-threatening problems.
- The toxic ingredients in chocolate include caffeine and a chemical called theobromine.
- Dark chocolate and baking chocolate are more toxic than white chocolate, but all of these should be withheld from pets.
- Cacao bean mulch used in gardens can cause chocolate toxicosis if a large enough amount is eaten.

What Is Chocolate Toxicosis?

Toxicosis is disease due to poisoning. Chocolate contains two ingredients that can be toxic to pets—caffeine, and a chemical called theobromine. While dogs and cats are both very sensitive to the effects of caffeine and theobromine, cats are usually not attracted to chocolate, so chocolate toxicosis tends to be less common in cats.

The amount of caffeine and theobromine in chocolate varies with the type of chocolate. The general rule is the more bitter the chocolate, the more caffeine and theobromine it is likely to contain. For example, unsweetened baking chocolate contains almost seven times more theobromine than does milk chocolate. White chocolate is also potentially toxic but contains less caffeine and theobromine than milk chocolate does.

Cacao bean mulch contains enough theobromine to be toxic if a dog or cat eats large enough amounts of it. Other products that contain caffeine include coffee, tea, and cola soft drinks. These should be withheld from pets as well.

Signs of Chocolate Toxicosis

Clinical signs of chocolate toxicosis can begin to occur within an hour of ingestion. Caffeine and theobromine are both stimulants of the brain and heart, so the clinical signs can include hyperactivity, increased heart rate, muscle tremors, and potentially death. Other clinical signs include the following:

- Vomiting
- Diarrhea
- Chocolate smell on breath
- Lethargy (weakness/tiredness)
- Panting
- Anxiousness, restlessness, and pacing
- Seizures

Complications associated with chocolate toxicosis can lead to death within 24 hours of ingestion.
Diagnosis

Caffeine and theobromine can be detected in the stomach contents and blood of animals that have eaten chocolate, but diagnosis of chocolate toxicosis is usually based on evidence that the pet has eaten chocolate. Owners may find candy wrappers, an empty baked goods tray, or other evidence that the pet has eaten something.

If chocolate ingestion is suspected, call your veterinarian immediately! Based on your pet’s weight and an estimate of the amount of chocolate eaten, your veterinarian may be able to calculate the amount of caffeine and theobromine that was ingested and determine if your pet is at risk for a toxic reaction. For example, if a large dog eats a few small pieces of milk chocolate, the amount ingested may not be enough to cause a problem. However, if a small dog eats one or two squares of bittersweet baking chocolate, this could be an emergency. Don’t forget that chocolate can have other dangerous components. For example, macadamia nuts and raisins are also toxic to animals, so be sure to tell your veterinarian if the chocolate that your pet ate contained any other components.

Treatment

As soon as you discover that your pet has eaten chocolate, contact your veterinarian immediately. If your pet ingested enough chocolate to be dangerous, immediate treatment will be recommended. If the ingestion is detected early enough, your veterinarian may be able to induce vomiting to clear the chocolate from the stomach before it gets absorbed. Further care, including hospitalization for cardiovascular monitoring, may still be recommended. If ingestion occurred more than a few minutes ago, it may be too late to induce vomiting. Your veterinarian may administer activated charcoal to your pet. This is a liquid that is given by mouth and limits absorption of anything in the stomach and upper intestines. Your veterinarian may also recommend hospitalization for administration of intravenous fluids (to help remove the chemicals from your pet's system) and for monitoring. Because caffeine can be reabsorbed by the bladder wall, keeping your pet’s bladder empty can also help speed up recovery time. This is managed by frequent walking or by placing a urinary catheter.

Prevention

Dogs have a tremendous sense of smell and tend to be very curious about their surroundings. If there is chocolate in your home, there’s a good chance that your dog will find it and eat it. This means that leaving candy on a countertop or on a coffee table puts your pets at risk. Dogs will eat the entire contents of a “trick or treat” bag or an Easter basket if they have a chance. They will even knock trays of brownies or cookies off the stove and eat them. Make sure to keep all tempting chocolate treats away from your pets.

Other foods that can be dangerous to pets include raisins (which can cause kidney damage), macadamia nuts (which can cause muscle tremors and shaking), xylitol artificial sweeteners (which can cause low blood sugar, seizures, and liver failure), onions (which can cause anemia), and uncooked bread dough (which can expand in the stomach and require surgical removal).
Chronic Kidney Disease

- *Kidney disease* is a very general term used to describe several conditions that can affect the kidneys or damage kidney cells. Some types of kidney disease are reversible. Chronic kidney disease is a progressive disease that is not curable.
- Clinical signs associated with chronic kidney disease include increased drinking and urination, weight loss, and appetite loss.
- Pets can sometimes experience a good quality of life for many years after being diagnosed with chronic kidney disease. Your veterinarian will evaluate your pet and discuss the best methods of disease management with you.

What Is Kidney Disease?

*Kidney disease* is a very general term used to describe several conditions that can affect the kidneys or damage kidney cells. If kidney disease progresses, it can eventually lead to kidney failure and death. Here are just a few medical conditions that can be associated with kidney disease:

- Nephritis: infection of the kidneys, including the spread of systemic diseases (e.g., leptospirosis, Lyme disease) that can cause kidney damage
- Nephrotoxicosis: damage to kidney cells associated with a drug or poison (such as antifreeze)
- Polycystic kidney disease: a genetic condition in which kidney cells become cysts, losing their ability to function properly
- Kidney stones
- Heart failure (heart disease can decrease the blood supply to the kidneys, which can damage kidney cells)

The kidneys are responsible for several important functions in the body, including the following:

- Eliminating waste products through the urine
- Producing a hormone involved in the production of red blood cells
- Helping to maintain the body’s fluid balance/hydration
- Participating in the breakdown and elimination of many types of drugs
- Helping regulate levels of important electrolytes such as potassium and sodium

Kidney disease reduces the kidneys’ ability to carry out these functions, resulting in illness and (often) further progression of disease.

How Is Chronic Kidney Disease Different?

The term *kidney disease* describes many conditions that can affect the kidneys. *Kidney failure* describes a condition in which the kidneys cannot effectively eliminate waste products, maintain hydration, and help regulate the balance of electrolytes in the blood. Despite how the term may sound, *kidney failure* does not mean that the kidneys stop producing urine. In fact, because the kidneys can no longer concentrate urine, *increased* urine production is often one of the key
clinical signs associated with kidney failure. Urine production does not stop completely until kidney failure has progressed to the very end stage, which is fatal.

Kidney failure can be acute (occurring over a period of hours or days) or chronic (occurring over a period of weeks to months or longer). Antifreeze toxicosis is an example of a condition that can cause acute kidney failure. If diagnosed quickly and treated aggressively, acute kidney failure can be reversed in some cases, and the pet can go on to live a normal life.

In contrast, chronic kidney failure, or chronic kidney disease (CKD), is not reversible. CKD can be caused by conditions such as polycystic kidney disease or kidney stones, but in senior pets, it is commonly the result of an age-related decline in kidney function.

CKD tends to be progressive, meaning that it gets worse over time. Although CKD is not reversible, it is often possible to slow the progression of the disease and manage some clinical signs so that your pet is more comfortable.

**What Are the Clinical Signs of Chronic Kidney Disease?**

The clinical signs of CKD often start off as very mild and increase in severity as the disease progresses:

- Vomiting
- Appetite loss
- Increased drinking and urination
- Dehydration
- Lethargy (tiredness)
- Weight loss
- Constipation
- Decreased grooming
- Drooling (due to nausea or ulcers in the mouth)

**How Is Chronic Kidney Disease Diagnosed?**

As with many other medical conditions, diagnosis of CKD frequently begins with your veterinarian obtaining a medical history from you. Among other things, your veterinarian may ask about any medications or supplements your pet has received; changes in appetite, drinking, or urination; previous illnesses; or any current signs of illness.

Diagnosis of kidney disease may require a combination of several tests. Your veterinarian may not recommend all of these tests, but the following are some common ones:

- **CBC and chemistry profile:** These tests are commonly performed together as part of a wellness screen or initial blood testing when a pet is ill. These tests provide an overview of many of your pet’s organ systems, including the kidneys. The CBC (complete blood cell count) shows the numbers of red blood cells (needed to carry oxygen to all the body’s tissues), white blood cells (needed to help fight off infection), and platelets.
Because the kidneys are involved in the production of red blood cells, pets with CKD may have low numbers of these cells. The white blood cell count may also be abnormal if infection is present. The chemistry profile measures the levels of several substances that can change if there is a problem with the kidneys, such as CKD.

- **Urinalysis:** Evaluation of a urine sample from your pet can provide critical information about how well the kidneys are working. Urine that is too diluted or that contains material that should not be present can indicate that a pet may have kidney disease.
- **Radiography (obtaining x-rays):** X-rays of your pet’s abdomen may show kidney stones or abnormally shaped or sized kidneys.
- **Sonographic evaluation of the abdomen:** Evaluation of the abdomen by ultrasonography is a very useful test for examining the kidneys. The ultrasound machine is connected to a small, handheld probe that is held against your pet’s abdomen. The probe sends out painless sound waves that bounce off structures in the abdomen (such as the kidneys) and return to a sensor inside the ultrasound machine. This creates an image on a screen that shows your veterinarian the structure of your pet’s internal organs. The ultrasound can also “look inside” organs (like the kidneys) to detect masses, cysts, or other problems that can contribute to CKD.

**How Is Chronic Kidney Disease Treated?**

CKD is a progressive, irreversible condition. It is not technically “treatable” or “curable,” but in many cases, it can be well managed. Effective management generally focuses on slowing the progression of disease and improving quality of life for the patient.

Pets that are severely ill from CKD may need hospitalization and intensive care to become stable enough to continue recovering at home. At home, medications and supplemental fluids can often effectively manage the condition. There are even special diets and dietary supplements that can help some pets with CKD. Periodic blood testing and urine evaluations are often recommended to assess the pet’s response to management and determine how quickly the disease is progressing.

Pets can sometimes experience a good quality of life for many years after being diagnosed with CKD. Your veterinarian will evaluate your pet and discuss the best methods of management with you.

Although CKD is frequently not preventable, regular physical examinations and wellness screening tests can increase the chances of early diagnosis and effective management.
Chronic Otitis

- Chronic ear infections may involve bacterial or yeast overgrowth in the external, middle, or inner ear.
- Chronic infection can permanently damage the ear canal and cause pain, neurologic signs, and deafness.
- Ear infections are usually secondary to an underlying condition that allows for an unhealthy ear environment.
- Treatment is based on eliminating the bacteria or yeast with antibiotics or antifungal medication while working to resolve the underlying condition.
- Regular ear cleanings and resolution of the underlying condition help to prevent recurrence.

What Is a Chronic Ear Infection?

Ear infections are usually secondary to inflammation of the external ear canals (the tube-shaped part of the ear visible under the ear flap). Inflammation of the canals leads to the reproduction of normal bacteria and yeast that live in the ear to the point where the body is unable to control their numbers (called overgrowth). Other bacteria can also take advantage of the inflammation and unhealthy environment inside the ear to establish infection. The overgrowth of these organisms causes more inflammation. Inflammation of the ear canal causes swelling, making the tube narrower than usual. Inflammation also causes an increase in the production of wax. The ears become very itchy and painful. Severe ear infections can lead to eardrum rupture and middle and inner ear infections. Deep infections can lead to deafness and neurologic signs.

Certain disorders or diseases may be the primary reason ear infections develop. These conditions include:

- Allergies (environmental and food)
- Ear mites
- Foreign bodies
- Skin disorders (like seborrhea)
- Thyroid disease (in dogs)
- Tumors or polyps in the ear

Ear infections may recur because of the inability to control the original infection or treat the underlying cause. Chronic changes lead to future infections, and scar tissue and permanent narrowing of the ear canals can make future infections difficult to treat.

What Are the Signs of an Ear Infection?

An external ear infection first shows signs of local inflammation (redness, discharge). Pets may shake their heads, scratch their ears, or rub their ears against furniture or the floor. Some pets with severe infections may cry or groan as they rub and scratch their ears. Some pets scratch so severely that their nails create wounds on the skin around their face, neck, and ears.
External ear infections may progress to involve the middle and inner ear, leading to more serious signs of disease:

- **External ear infection (otitis externa)**
  - Itchy or painful ears
  - Head shaking
  - Discharge and odor from the ears
  - Narrowing or even closing of the canals

- **Middle ear infection (otitis media)**
  - Paralysis of the nerves in the face
  - Dry eye
  - Hearing loss
  - Abnormal pupil size

- **Inner ear infection (otitis interna)**
  - Inability to keep balance, stand, or walk
  - Nausea
  - Head tilt

**How Is an Ear Infection Diagnosed and Treated?**

During a physical examination, your veterinarian will look in the ear for the presence of inflammation, redness, discharge, growths, or other findings that may indicate an ear infection. Sometimes, a cotton swab is used to collect debris from the ear. This material can be placed on a slide and examined under a microscope to determine if the infection is due to yeast, bacteria, or mites. Your veterinarian may also collect a sample of ear debris for culture and sensitivity testing, which identifies the exact organisms present and helps your veterinarian select the best antibiotic to use.

In severe cases, or if the animal is in too much pain to permit an examination of the ears, sedation may be needed to evaluate the ears, collect samples of discharge, clean the ears, and initiate treatment. With the pet sedated, the ears can be gently flushed to remove debris and facilitate better examination of the ear. Radiographs (x-rays) and other diagnostic tests can be performed while the pet is sedated to determine if the middle or inner ear are also involved.
Once the infection has been identified, most animals with chronic ear infections can be treated at home. Ear mites are relatively easy to treat with medication placed directly into the ear or applied topically between the shoulder blades. Most yeast and bacterial infections can be treated with regular cleanings and topical or oral medication. When inflammation is severe, a steroid may be needed to give comfort to your pet and decrease the swelling around the ear canals.

If there are underlying problems such as thyroid disease or seborrhea, these must also be addressed to clear the infection and reduce the chances of recurrence.

If the ear canals have been permanently narrowed or damage is otherwise severe, surgery may be recommended to allow for drainage and application of medication. In other cases, more extensive surgery may be recommended to prevent the pet from being in chronic pain due to a permanently deformed, infected ear.

**How Can Ear Infections Be Prevented?**

Once an infection has been cleared, maintaining a healthy ear environment with regular cleaning helps prevent recurrence. Unfortunately, regular cleaning isn’t always enough. Underlying diseases such as allergies and skin disorders must be identified and resolved in order to help avoid future infections.
Coccidiosis

- Coccidiosis is an intestinal condition caused by a single-celled parasite.
- Dogs and cats swallow cysts containing the parasite from contaminated environments, usually during grooming.
- Signs of coccidiosis include watery diarrhea with blood or mucus, and possibly vomiting and lethargy (tiredness).
- Puppies and kittens are more severely affected than adult animals.
- People cannot be infected with the coccidia that affect their pets.
- Diagnosis is made by identifying the parasite cysts during a fecal exam.
- Pets are usually treated with an oral medication for 5 to 10 days.

What Is Coccidiosis?

Coccidiosis is an intestinal condition caused by a microscopic, single-celled parasite. While there are several types of coccidia, dogs with this condition are usually infected with *Isospora canis*, while cats are infected with *Isospora felis*.

What Causes Coccidiosis?

Infected dogs and cats shed cysts containing the parasite in their stool. These cysts can survive in the environment for as long as a year. Other pets become infected by swallowing the cysts from a contaminated environment, usually during grooming. Dogs and cats can also contract the parasite by eating an infected rodent.

Once inside the pet’s digestive tract, the cysts break open, and the parasite enters the intestinal cells, where it reproduces. The cell eventually ruptures, releasing the parasites and damaging the intestinal lining.

What Are the Signs of This Condition?

Signs of coccidiosis include watery diarrhea that may be tinged with blood or mucus. Pets with this condition may also experience vomiting, a loss of appetite, and lethargy (tiredness). Puppies and kittens can be severely affected, exhibiting dehydration, weight loss, and, in some cases, death.

Older pets usually have milder signs. Some pets may show no signs at all but still shed the parasite cysts in their feces.

Is Coccidiosis Contagious?

The coccidia species that infect dogs do not infect cats, and vice versa. However, the cysts in the feces from one dog can infect another dog, and the cysts in the feces from one cat may be infective to another cat. People generally cannot become infected with the species of coccidia that affect dogs and cats.
**How Is Coccidiosis Diagnosed?**

A diagnosis of coccidiosis is made by identifying parasite cysts on a fecal exam. Since the cysts are often difficult to find on a fecal exam, your veterinarian may choose to treat your pet if there is a high suspicion of coccidiosis, even if no cysts are found. This precautionary treatment is not harmful to your pet.

Any new pet being introduced into the home should have a fecal sample tested as soon as possible to diagnose coccidiosis or other intestinal parasite infections. Your veterinarian may also recommend fecal tests during your pet’s regular physical examinations.

**How Is Coccidiosis Treated?**

Several oral medications may be used to treat this condition. Your pet will most likely require daily treatment for 5 to 10 days. If you have a multi-dog household, but only one dog shows signs of coccidiosis, it’s a good idea to treat the other dogs to prevent reinfection from other pets that may carry the parasite but show no signs. The same goes for multi-cat households.

Pets (particularly puppies and kittens) with severe dehydration may need fluid therapy.

**How Can I Prevent Coccidosis?**

To prevent your pet from being infected from parasite cysts in the environment, wash his or her bedding and clean the kennel area with an ammonia product. Pick up and dispose of feces as soon as possible, and keep your pet from hunting animals when outside.
Cognitive Dysfunction

- Cognitive dysfunction (CD) in dogs and cats can be compared with Alzheimer’s disease in humans, although the conditions are not identical.
- Before diagnosing CD, your veterinarian may recommend diagnostic testing to rule out other medical conditions that can cause similar clinical signs.
- Medications can help some pets with CD. There is a diet for dogs with CD, and nutritional supplements may also help manage the problem in pets.

What Is Cognitive Dysfunction?

Most people are familiar with terms like Alzheimer’s disease or senility as they apply to humans. However, elderly dogs and cats develop a very similar condition known as cognitive dysfunction (CD).

Researchers are still trying to understand all the changes that occur in the brains of pets with CD, but studies have determined that deposits of a protein called beta-amyloid play a role. These deposits have an adverse affect on brain functioning. Interestingly, research on Alzheimer’s disease in humans has reported similar findings.

The exact prevalence of CD in dogs and cats is not well documented. However, evidence suggests that the disease becomes more common as pets age. In one study, CD affected 47% of dogs between the ages of 11 and 12 and 86% of dogs between the ages of 15 and 16.

What Are the Clinical Signs of Cognitive Dysfunction?

Some of the subtle clinical signs of CD can be difficult to distinguish from regular signs of aging. These include things like slowing down and becoming less active. However, dogs and cats with CD also exhibit other signs, including the following:

- House soiling (“forgetting” how to use the litterbox or eliminating outside the box for cats)
- Decreased activity and attention
- Disorientation
- Changes in sleep cycles (pacing or wandering and crying at night)
- Withdrawing from interactions with family members

Some pets can seem to not know family members and even exhibit aggressive behavior toward other pets or members of the household, as if they are strangers. Pet owners may also report that a pet has “forgotten” tricks, behaviors, and regular routines that were well established earlier in life.

How Is Cognitive Dysfunction Diagnosed?
Your veterinarian will likely begin the diagnostic process for CD by reviewing your pet’s medical history. Valuable information can include the duration of the observed abnormalities, the severity of the problem, and whether the problem seems to be getting worse over time.

The most important aspect of diagnosing CD is to rule out other medical problems that can cause similar clinical signs. For example, an elderly cat that starts soiling outside the litterbox may have another illness such as a bladder infection, diabetes, thyroid disease, or a kidney problem; all of these conditions can cause increased frequency of urination. Similarly, a cat that has arthritis may have difficulty getting into and out of the litterbox and therefore be reluctant to use it. Senior pets can also begin to lose their vision and hearing, which may affect how they interact and respond to family members. Your veterinarian may recommend a variety of diagnostic tests to rule out other medical issues before making a diagnosis of CD. Preliminary tests may include the following:

- Blood tests, including a chemistry panel and complete blood cell count (CBC)
- Urinalysis and urine culture testing to evaluate kidney function and look for evidence of kidney or bladder infection
- Radiographs (x-rays) to look for evidence of arthritis and to check for cancer or other changes involving organs in the abdomen or chest
- Abdominal ultrasonography
- Specific blood tests to evaluate thyroid function and look for other medical condition

**What Are the Treatment and Outcome for Cognitive Dysfunction?**

While there is no cure for CD, treatment may help improve the signs and slow the progression of the disease. Depending on the severity of the clinical signs, there are medications that can help dogs with CD, but there is currently no licensed medication for cats with the condition. There is a diet that can help dogs with CD, and nutritional supplements may also help manage the problem in pets.

There is no single medication that can help all pets with CD. However, it has been shown that exercise and mental stimulation can help slow the progression of CD. Regular exercise that is appropriate for an older pet, combined with environmental enrichment with toys and play activities, may help keep pets more alert as they age.

If the problem becomes too severe and issues such as house soiling, aggression, and poor quality of life become intolerable, euthanasia can be a reasonable option to discuss. Your veterinarian can help you and your family sort out these issues and try to help you make the best decision for you and your pet.
Colitis

- Colitis is a condition in which the colon, the last portion of the digestive tract, is inflamed.
- Dogs and cats may experience colitis for a few days or for many months.
- Signs of colitis include diarrhea with mucus and/or fresh blood, straining to defecate, and possibly vomiting.
- There are many causes of colitis, including stress, parasites, intestinal bacterial overgrowth, altered diet, food allergies, and immune-mediated conditions.
- Diagnosis may require fecal tests, abdominal radiographs (x-rays), abdominal ultrasounds, and/or a biopsy of the intestinal tissue.
- Treatment may include antibiotics, antiparasite medications, dietary fiber supplementation, probiotics, a special diet, or immunosuppressive medications.

What Is Colitis?

Colitis is the inflammation of the colon, which is the last portion of the digestive tract. Under normal conditions, the colon stores feces while absorbing fluid and nutrients. When the colon is inflamed, these functions are affected. Additional fluid is left in the colon, resulting in diarrhea.

Colitis may be acute, occurring for only a few days, or the condition may be chronic and last for months. Any dog or cat may experience colitis.

What Are the Signs of Colitis?

Diarrhea, often with mucus and/or fresh blood, is the hallmark of colitis. Pets with colitis often defecate with greater urgency and frequency. They may strain while defecating, causing some pet owners to mistakenly believe the pet is constipated. Some pets may vomit. Despite these signs, weight loss is usually not associated with colitis.

What Causes this Condition?

Acute forms of colitis may occur during or after stressful situations, such as boarding, grooming, or thunderstorms. Colitis can also happen when pets eat table food, get into the garbage, or eat anything that isn’t part of their usual diet, including nonfood items, such as rocks and clothing.

Colitis may also be caused by intestinal parasites, such as whipworms or *Giardia*, or by an overgrowth of certain types of bacteria in the digestive tract.

More chronic forms of colitis are often associated with allergies to dietary proteins or with the chronic immune stimulation associated with inflammatory bowel disease.

How Is Colitis Diagnosed?
Your veterinarian will probably start with a fecal exam to check for parasites and bacterial overgrowth. A rectal exam may also be performed to detect strictures or growths that may cause straining.

If a foreign body is suspected, radiographs (x-rays) may be recommended. In some cases, an abdominal ultrasound may be recommended as well.

For more chronic cases, biopsies (tissue samples) of the colon are the best way to confirm a diagnosis. Biopsies may be obtained during abdominal surgery or with endoscopy using a fiberoptic endoscope (a long, narrow tube with a tiny camera at the tip). The endoscope can be inserted into the rectum to help your veterinarian evaluate the rectum and large intestine. The instrument includes a small forceps, which your veterinarian can guide, using the camera, to take tissue samples.

**How Is Colitis Treated?**

Treatment for colitis depends on the cause. Depending on the results of the fecal exam, antibiotics or antiparasite medications may be all that is needed to clear up acute cases of colitis. Probiotics (beneficial bacteria) may be added to the diet to re-establish the proper balance of microorganisms in the digestive tract.

For dogs that have eaten garbage or table food, fasting for 24 to 48 hours or feeding a bland diet may be enough to decrease or eliminate the inflammation in the digestive tract. Food should never be withheld from cats for any length of time, however, so a bland diet is a better alternative. Once the pet is feeling better, you can gradually mix in more of the regular diet.

In either case, you should always consult your veterinarian before fasting your pet or changing the diet. If a foreign body is suspected, surgery may be needed, and waiting a few days may worsen the outcome.

Many pets with colitis are treated with dietary fiber supplementation. Fiber helps to bind the additional fluid in the colon and firm up the stools.

Pets with a food allergy may require a hypoallergenic diet. Dogs and cats with immune-mediated conditions may require immunosuppressive medications.
Common Household Poisons

- Many common food items or household products can sicken or even kill animals.
- Be aware of what substances may be toxic to your pet, and store and use them safely.
- If you think your pet has eaten something poisonous, call your veterinarian or a pet poison hotline immediately.

The Basics

Your home can hold a lot of unrecognized dangers for your pet. Many common food items or household products can sicken or even kill animals. However, a few simple precautions can help keep your pet safe.

Pets are not “mini people.” Animals react to substances in food and medicines completely differently than people do, so just because something doesn’t make a person sick doesn’t mean it is okay for a pet. Also, most pets are much smaller than people, so what may seem like a harmless amount of a food or drug can make them ill.

Pets are curious. If something smells good, they’ll eat it. If they can get into a container, they will. Be aware of what substances may be toxic to your pet, and store and use them safely.

Chocolate

If you suspect that your pet has consumed any amount of any chocolate, call your veterinarian. However, not all chocolate is equally dangerous to pets. In general, the darker the chocolate, the more toxic it is to animals. Baker’s chocolate is the most dangerous because it contains the highest concentration of a substance called methylxanthine. Pets that eat too much of this substance can have vomiting, diarrhea, excessive thirst and urination, hyperactivity, and, in severe cases, abnormal heart rhythms, tremors, and seizures.

Other Food

It is generally not a good idea to give your pet table food. Many human foods can cause digestive upset, which can be severe. Also, several common ingredients in human food can be toxic to pets. Just a few are:

- Avocados
- Grapes and raisins
- Macadamia nuts
- Onions, garlic, and chives
- Xylitol (a common sugar-free sweetener, often found in chewing gum and commercial baked goods, that can cause life-threatening liver failure)
- Yeast dough

Some beverages, such as coffee and alcohol, can also be poisonous to pets.
Grapes are sometimes recommended as treats for dogs; however, cases of serious kidney damage related to eating grapes have been reported. Raisins have also been reported to be toxic to dogs.

In general, do not store or leave food meant for you and your family in a place where your pet may be able to get to it. Take special care during holiday seasons and festive occasions, when it is very easy to become distracted and leave food or drinks on a counter or coffee table.

**Medicines**

Never give your pet a medicine meant for people unless you’ve been told to by a veterinary professional. Many common over-the-counter drugs can be extremely toxic to pets. Don’t leave medicine bottles out where pets can reach them (a determined dog can chew through a childproof cap), and pick up any dropped pills immediately. Use the same caution with dietary supplements or with products you buy at a health food store.

**Cleaning Products**

Read the warning labels on the household cleaning products you use, and store as directed.

**Outdoor Hazards**

If you have a garage, shed, or garden, you probably have at least some of the following:

- **Plants**: Learn which plants can be toxic to pets and under what circumstances. Tomatoes, for example, are in the nightshade family. Many lilies, flowers, and common ornamental shrubs can be toxic. The American Society for the Prevention of Cruelty to Animals (ASPCA) maintains a comprehensive online list ([http://www.aspca.org/pet-care/poison-control/](http://www.aspca.org/pet-care/poison-control/)).
- **Pest poisons**: Poisons meant to kill rodents, insects, or weeds are very common causes of poisoning in pets. Be very careful how you apply and store any poisons around your home.
- **Garden products**: Cocoa mulch, fertilizers, and compost piles are also unsafe for pets. Make sure any mulch or fertilizer you apply to your yard is safe for pets to play in (and possibly eat). Keep your pet out of areas treated with toxic products. Compost piles can grow bacteria and fungi that are highly toxic to pets, so if you have a compost pile, make sure your pet cannot get into it, and don’t compost dairy or meat items.
- **Garage chemicals**: Any chemical in your garage can be dangerous to pets. Antifreeze, in particular, can be deadly. Store all chemicals out of reach of your pet (just as you would for children), and carefully mop up any spills.

**In an Emergency…**

If your pet does eat something he or she shouldn’t, time is critical. Call your veterinarian or a pet poison hotline immediately and be prepared to describe the following:

- What your pet ate
How long ago
How much

The ASPCA Animal Poison Control Center’s hotline number is 888-426-4435. The Pet Poison Helpline number is 800-213-6680. (Note: Callers will be charged a consultation fee.)

If possible, bring some of the substance, including any available packaging, with you if you are asked to bring your pet in for an examination.

Top 10 Pet Poisons

The ASPCA Animal Poison Control Center handles more than 100,000 cases of pet poisonings every year. Based on those cases, the top offenders are:

- Human medicines
- Insecticides
- Human food
- Rodenticides
- Veterinary medicines that are given incorrectly (e.g., wrong medicine, wrong amount)
- Plants
- Chemicals (e.g., antifreeze, pool/spa chemicals)
- Household cleaners (e.g., bleach, detergent)
- Heavy metals (e.g., lead paint chips, linoleum)
- Fertilizer
Congestive Heart Failure in Cats

- Congestive heart failure is a condition in which a cat’s heart cannot deliver sufficient blood to the body.
- Hypertrophic cardiomyopathy (a thickening of the heart walls) is one of the more common causes of this condition in cats.
- Signs include difficult or rapid breathing, weakness, lethargy (tiredness), and loss of appetite.
- Diagnostics to determine the underlying cause may include blood tests, radiographs (or x-rays), and echocardiograms.
- Treatment of the underlying cause may partially or completely reverse the heart problem, but in most cases, the condition cannot be cured.
- Medications can help improve the cat’s quality of life and prolong survival.

What Is Congestive Heart Failure?

*Congestive heart failure* is a broad medical term that means that a cat’s heart cannot deliver sufficient blood to its body. This condition can be caused by a failure of the left side, the right side, or both sides of the heart.

When the heart starts to fail, the body can compensate to ensure that tissues receive the blood and oxygen they need. As the heart disease increases in severity, these compensatory mechanisms become overwhelmed. The heart is then unable to pump enough blood to the body, so fluid backs up, most often in the lungs, causing congestion.

Congestive heart failure can occur at any time, but it happens most often in middle-aged to older cats. Maine Coon cats may be genetically predisposed to certain types of heart failure.

What Causes Congestive Heart Failure?

While many conditions can lead to congestive heart failure in cats, one of the most common causes is hypertrophic cardiomyopathy. In this condition, the muscle walls of the heart become thickened, so they are unable to stretch and fill with adequate amounts of blood to pump to the body. As a result, fluid may back up into or surround the lungs, making breathing difficult. Fluid may also back up into the abdomen, but this is less common in cats than in dogs.

Other causes of congestive heart failure in cats include:

- Hyperthyroidism (an excess of thyroid hormone)
- High blood pressure
- Heart valve deficiencies or blockages
- Defects in the heart walls
- Fluid in the sac surrounding the heart
- Blood clots within the heart
- Heart rhythm abnormalities
- Heartworm disease (rare)
What Are the Signs of This Condition?

In the early stages of congestive heart failure, your cat may show no signs at all. As the disease progresses, signs may include:

- Difficult or rapid breathing
- Loss of appetite
- Weakness or lethargy (tiredness)
- Collapse
- Sudden death

If your cat shows signs of open-mouth breathing or panting, gray or blue gums or tongue, or leg paralysis (due to blood clots), seek veterinary help immediately.

What Diagnostic Tests May Be Needed?

To determine the cause of congestive heart failure, your veterinarian may recommend a number of tests, such as:

- Blood tests, including thyroid and heartworm tests
- Chest radiographs (or x-rays) to assess the heart, blood vessels, and lungs
- An electrocardiogram (ECG)
- An echocardiogram (an ultrasound exam to evaluate heart structure and function)
- Blood pressure tests

How Is Congestive Heart Failure Treated?

In some cases, such as congestive heart failure that is caused by hyperthyroidism, treatment of the underlying condition may resolve some or all of the heart problems. If the problem is caused by a congenital condition (a heart defect that the cat has had since birth), surgical repair may be an option. In most cases, however, the problem cannot be cured, but treatment can help improve the cat’s quality and length of life.

Cats with severe congestive heart failure may require initial hospitalization and oxygen therapy. If there is fluid surrounding the lungs or in the sac surrounding the heart, it may need to be removed to improve breathing and help the heart pump more efficiently.

There are many medications that your veterinarian may recommend to help reduce fluid buildup, improve heart function, and/or normalize heart rhythms. Your veterinarian will discuss each medication and its potential side effects with you. A low-sodium diet may also be recommended to help prevent fluid accumulation.
Most cats with congestive heart failure require medications for the remainder of their lives. Periodic blood tests, radiographs, and echocardiograms are often needed to monitor treatment success and disease progression.
Conjunctivitis

- Conjunctivitis is inflammation of the conjunctiva (the tissues lining the inner eyelids and the white portion of the eye).
- Diagnosis is based on physical examination findings, but fluorescein staining and other tests may be recommended to determine the extent of the problem.
- Treatment usually involves applying medication to the eyes; follow-up examinations and diagnostic testing may be recommended.

What Is Conjunctivitis?

*Conjunctivitis* is the medical term used to describe inflammation of the conjunctiva—the soft tissues lining the inside of the eyelids and the white portion of the eye.

What Causes Conjunctivitis?

 Conjunctivitis can occur as part of an upper respiratory tract infection, a condition that resembles a common cold. It can also be associated with a localized problem that causes trauma to or irritation of the eyes, such as certain viral, bacterial, and fungal infections. Other causes include:

- Airborne irritants, such as cigarette smoke, dust, and perfumes
- Systemic illnesses (illnesses that affect the whole body), such as feline herpesvirus, feline immunodeficiency virus (FIV), canine distemper, and bartonellosis (infection with the bacteria that cause “cat scratch disease” in humans)
- Dry eye (a medical condition characterized by inadequate tear production)
- Entropion (a malformation of the eyelids that causes the edge of the lids to roll inward; the hairs on the eyelids scrape against the eye and cause irritation)
- Trauma to the eye, such as a blow

What Are the Clinical Signs of Conjunctivitis?

The clinical signs of conjunctivitis vary depending on the severity of the inflammation. Signs include:

- Discharge from the eyes (can be pus, watery, or thick, like mucus)
- Swollen eyelids
- Red, “bloodshot” eyes
- Squinting
- Rubbing the eyes with a paw or against other objects, such as furniture or the floor

If the conjunctivitis is severe, permanent damage to the cornea (the clear covering on the surface of the eye) can occur. This may result in blindness or require surgery to remove the eye to prevent further pain, inflammation, and infection.

How Is Conjunctivitis Diagnosed?
The medical history and physical examination findings can provide valuable information for your veterinarian. The medical history may include trying to determine how long the conjunctivitis has been going on and whether any other signs of illness have been observed. Physical examination findings may reveal evidence of underlying illness. For example, a cat with an upper respiratory tract infection may have a runny nose, sneezing, and a fever in addition to conjunctivitis.

Diagnosis of conjunctivitis is usually based on physical examination findings. If the pet is squinting because the eyes are painful, your veterinarian may begin the examination by applying a drop of liquid topical anesthetic directly to the eye. This is not painful, and after a few minutes, it makes the surface of the eye numb so the examination can proceed. During the examination, your veterinarian will likely look for foreign material, wounds, or other causes of conjunctivitis. Entropion can also be diagnosed during the physical examination.

While examining your pet’s eyes, your veterinarian may apply fluorescein stain to the eye. Fluorescein is a green-tinted dye that fluoresces (glows) under blue light. If the surface of the cornea is intact, the fluorescein dye will not stick to the eye. However, if there is a scratch, ulcer, or wound on the cornea, the dye adheres to the defect and can show your veterinarian where and how serious the injury is. Fluorescein staining is not painful and can provide valuable information about the condition of your pet’s eye.

If your veterinarian suspects that the conjunctivitis may be caused by dry eye, he or she may recommend a test to determine if tear production is adequate. Similarly, if a systemic illness (such as FIV) is suspected, blood testing or other diagnostic tests may be recommended.

**How Is Conjunctivitis Treated?**

Most cases of conjunctivitis are treated with drops or ointments applied directly to the eyes. If the conjunctivitis is associated with another illness, like an upper respiratory infection, antibiotics or other medication given by mouth may also be recommended. In many cases, the eye starts looking better after only a few treatments. However, all medications should be given as directed for the full course of treatment.

If the conjunctivitis is associated with entropion, surgery may be recommended to stop the problem from recurring. Similarly, if a pet has dry eye, long-term management may be recommended to control the condition.

Your veterinarian may recommend recheck exams during the course of treatment to monitor how well the condition is responding to therapy. Notify your veterinarian right away if your pet’s eye begins to look worse or you see other signs of illness.
Constipation and Obstipation in Cats

- Constipation is a condition in which a cat passes feces less often or in smaller amounts than normal.
- Obstipation occurs when severe constipation makes defecation impossible or nearly impossible.
- Signs include infrequent or no defecation, straining to defecate, hard and dry feces, vomiting, or loss of appetite.
- There are numerous causes for these conditions, such as blockages from hairballs or other foreign materials, litterbox issues, decreased water intake or dehydration, lack of exercise, drug side effects, tumors or trauma, or a medical condition known as *megacolon*.
- To diagnose the condition, your veterinarian may gently press your cat’s abdomen to feel the intestines, but a radiograph (x-ray) may also be necessary.
- Treatment may include fluid therapy, stool softeners, dietary fiber, laxatives, motility modifiers, and enemas.
- In severe cases, surgery may be necessary.

What Is the Difference Between Constipation and Obstipation?

Constipation is a condition in which cats pass feces less often or in smaller amounts than normal. Feces are often hard and dry, which may cause cats to strain or have difficulty passing feces.

While constipation may occur periodically, obstipation is a more persistent and severe form of constipation, in which defecation is impossible or nearly impossible.

What Are the Signs of These Conditions?

Cats with constipation or obstipation may exhibit the following signs:

- Infrequent or no defecation
- Straining to defecate
- Hard, dry feces
- Defecating outside the litterbox
- Small quantities of feces
- Small amount of liquid stool with mucus or blood
- Vomiting
- Lack of appetite
- Depression

Male cats with a blocked urinary tract may also strain in the litterbox, and owners may mistake this for constipation. A blocked urinary tract is a medical emergency. If your cat is straining in the litterbox and there is no evidence of urine (or only a small amount of urine), contact your veterinarian immediately!

What Causes Constipation and Obstipation?
There are many potential causes of these conditions, including:

- Blockages from hairballs or other foreign materials
- Reluctance to use the litterbox because of stress, a change in litter, a full/dirty box, or painful urination
- Lack of exercise
- Decreased water intake
- Dehydration, often caused by kidney disease
- Nerve damage
- Arthritis, making it painful to squat
- Tumors
- Some drugs, including anesthetics
- Trauma

In some cats, a condition called megacolon contributes to constipation and obstipation. Megacolon is characterized by a decreased ability of the colon to move fecal material through in the normal way. Fecal material accumulates in the colon, resulting in constipation. Researchers believe that megacolon is caused by a problem with contraction of the muscles in the colon. It has also been suggested that severe prolonged retention of feces (as with constipation or obstipation) can stretch and damage the muscles of the colon, causing megacolon to develop. However, the cause of megacolon is undetermined in most cases.

How Are These Conditions Diagnosed?

Your veterinarian may be able to gently press his or her hands on your cat’s abdomen and feel the feces backed up in the intestines. However, in overweight cats, abdominal fat can limit your veterinarian’s ability to feel fecal material in your cat’s intestines. In these cases, a radiograph (x-ray) may be necessary to assess the problem. In the case of obstipation or megacolon, the colon will be greatly stretched beyond its normal size.

Occasionally, an endoscopic exam may be necessary. Anesthesia is required for this procedure, which involves inserting a tube containing a small camera into the rectum. This enables the veterinarian to look inside the rectum and colon for abnormalities such as narrowing of the colon or tumors that may prevent feces from passing.

Your veterinarian may also recommend blood work to look for underlying diseases that may cause dehydration leading to constipation.

How Are These Conditions Treated?

Treatment varies depending on the degree of constipation and the amount of discomfort your pet is experiencing. If constipation is mild, your veterinarian may supplement your pet’s diet with fiber, such as canned pumpkin, bran, or psyllium. Other medications, such as stool softeners, laxatives, and motility modifiers, may help as well. Some stool softeners and laxatives intended for humans are not safe for cats, so never give your cat a human medication unless instructed to do so by your veterinarian.
If an underlying condition, such as kidney disease, may be causing dehydration and constipation, treating the problem and rehydrating the cat with fluid therapy can help.

For more severe forms of constipation, enemas may be necessary, or the cat may need to be anesthetized for manual removal of feces.

In cases of megacolon, the diameter of the colon can sometimes be stretched so far that the muscles of the digestive tract are permanently damaged. When this happens, surgical removal of the affected portions of the colon may be necessary.
Coping With Cancer

- Cancer is extremely common in pets.
- Cancer can be successfully managed in many cases.
- Most pets tolerate treatment extremely well.
- An accurate diagnosis and proper staging of a pet’s cancer are essential in order to pursue the best treatment and achieve the best possible outcome.
- Cancer treatment in pets is designed to provide the best quality of life for the pet for as long as possible.
- Monitor your pet closely throughout treatment.
- Discuss euthanasia options with your veterinarian and outline a plan so you know how to proceed if necessary.

What You Need to Know

Cancer is extremely common in pets. While a diagnosis of cancer in a beloved pet can be devastating, it is important for owners to realize that many forms of cancer can be successfully treated or managed to provide the pet with an excellent quality of life. It is also important to realize that in pets, just as in people, some types of cancer are now viewed as a chronic, rather than a terminal, disease. The best way to fight cancer is to detect it early and begin treatment promptly.

Signs of Cancer

To detect cancer at its earliest, be sure to bring your pet in for regular veterinary examinations. Between examinations, monitor your pet for signs of cancer and schedule a checkup if any of the following appear:

- Abnormal lumps, bumps, or swellings anywhere on the body
- Sores or lesions that do not heal
- Unexplained weight loss or changes in appetite
- Bleeding or discharge from any body opening
- Unpleasant odor
- Difficulty urinating or defecating
- Persistent lameness
- Drooling or any signs of mouth discomfort

Diagnosing Cancer

If cancer is suspected, it is very important for you and your veterinarian to have as much information as possible when making serious decisions regarding treatment. An accurate diagnosis is essential. Your veterinarian will also want to correctly stage your pet’s cancer. This will help your veterinarian determine how advanced the cancer is and what the projected success rates of various possible treatments might be. As a result, your veterinarian may recommend diagnostic procedures such as laboratory tests, biopsies, x-rays, ultrasound studies, and even exploratory surgery.
Treating Cancer

The goal of cancer treatment in pets is to provide the pet with the highest quality of life for as long as possible. Cancer treatments such as chemotherapy and radiation are generally tolerated extremely well by canine and feline patients.

When side effects occur, your veterinarian can prescribe anti-nausea and pain medications, as needed, as well as nutritional support to keep your pet comfortable during treatment.

In some cases, the cancer may be so advanced that your veterinarian may recommend palliative care only. This means that your pet’s veterinary team will seek to keep your pet as comfortable as possible for as long as possible without pursuing more aggressive treatment options. The primary goal of cancer care in pets is always to maintain the best quality of life possible for your pet.

What You Can Do to Help Your Pet Cope

• Be your pet’s advocate. Watch your pet closely for signs that he or she is either doing well or experiencing pain or discomfort, and keep your veterinarian informed.
• Keep all scheduled veterinary appointments, and stay in contact with your veterinary team. It is there to help you.
• Provide your pet with lots of comfort care. Spend as much time as possible with your pet; provide a quiet, comfortable place to rest and sleep; and provide nutritional support and plenty of fresh water as needed. Your pet may need to urinate and defecate more often because of cancer treatment, so make your pet’s “bathroom” as accessible as possible.
• Above all, enjoy your time with your pet!

Euthanasia Considerations

In the course of your pet’s cancer care, you may realize that the “bad” days are starting to outnumber the “good” days. When you feel that you have done the best that you, in your personal circumstances, can do for your pet, you may need to consider euthanasia. Many resources are available through your veterinarian or online to help you with this difficult decision. Most owners weigh not wishing to see a pet suffer against the desire not to deprive a pet of any remaining “good” days. When this time approaches for you and your pet, be sure to keep the lines of communication open with your veterinarian. Consult with him or her closely about your pet’s medical status and learn what to expect in the days or weeks ahead. Make sure you know what the practice’s procedures are for an emergency euthanasia, both during the business day and after hours, if your pet takes a sudden turn for the worse. Monitor your pet closely for signs that he or she may be in discomfort, and discuss these signs with your veterinary team.

Many owners worry about putting their pet through cancer treatment. However, pets typically handle cancer treatment extremely well.
Coping With the Loss of a Pet

- Grief is a natural reaction to the loss of a pet.
- Everyone grieves differently.
- Pet-loss support resources exist and may be helpful for you.

The Five Stages of Grief

Grief is a natural reaction to the loss of a pet. Regardless of whether the pet is old or young, or whether the loss is expected or sudden, family members and other people who were close to the pet will experience similar feelings when a beloved pet dies. These feelings, commonly called the five stages of grief, are the same as those experienced when a person passes away:

- Denial
- Anger
- Bargaining (i.e., trying to find an activity or action that either could have helped avoid the loss or that will take it away)
- Depression
- Acceptance

There is no “set” way that people experience these stages, and not everyone goes through all of them. Everyone grieves differently. What is important to know is that if you have lost a pet, it is normal to feel sad or angry. Sometimes, people who did not know the pet may say things that imply that grief is a reaction that should be reserved for the death of a person. This is not the case—grief is natural whenever you lose a loved one.

Remembering Your Pet

Some people find that performing a special activity, such as planting a flower or creating a memorial item, helps ease the sadness they feel at losing their pet. A memorial item might be something you make yourself, like a photo of the pet in a special frame, or something you can purchase and personalize for your pet—you can find many suggestions on the Internet by typing “pet memorials” into a search engine. Donating to an animal shelter or favorite charity in your pet’s name can also be a way of remembering your pet.

When—or if—to Get a New Pet

Just as there is no set way that people mourn, there is no set time. Some people feel that they are ready for a new pet quickly, and some people do not want to consider getting a new pet until time has passed. Some people decide not to have another pet, even when they have finished grieving. Because every pet is different, it is not possible to “replace” a pet, but every pet offers a new chance for companionship.

Professional Pet-Loss Resources
Many resources exist to help people who are grieving the loss of a pet. Two of these are the Argus Institute and the Veterinary Social Work Program at the University of Pennsylvania. Both of these sites have links to or phone numbers for grief counseling services. Your veterinarian may also be able to suggest local support groups or other people, such as therapists or spiritual counselors, who can help.
Corneal Ulceration

- The cornea is the clear covering of cells on the front of the eye; it can become damaged if scratched or irritated.
- Corneal ulcers can be very painful and can cause eye redness, tearing, and squinting.
- Corneal ulceration is a common eye condition of dogs and cats.
- If corneal ulceration is not treated quickly and appropriately, the pet could become blind.

What Is a Corneal Ulcer?

The cornea is the thin, transparent covering of cells on the front of the eye. The cells that make up the cornea are very fragile, so anything that rubs, scrapes, or irritates the eye can damage this thin layer of cells or rub some of them off. This is called a corneal ulcer. Corneal ulceration can occur if the eye is irritated by chemicals, dust, or inadequate tear production. Trauma, such as scratching, can also cause a corneal ulcer.

Entropion is a medical condition in which the pet’s eyelids roll inward and the eyelashes or other hairs (which are normally on the outside of the eyelid) are pulled underneath, where they can scrape against the cornea. This can lead to corneal ulceration.

Tears are a natural lubricant for the eye. When the eye doesn’t produce enough tears, the cornea can become irritated and, eventually, a corneal ulcer can form. This condition is commonly called dry eye, but the medical term is keratoconjunctivitis sicca (KCS). In addition, some viral infections, such as feline herpesvirus infection, can cause corneal irritation and ulceration.

There are two types of ulcerations: superficial, which affects only a small amount of the top layer of the cornea, and deep, which extends through the layers of the cornea and can result in severe scarring and even eye rupture.

Most cases of corneal ulceration heal without complication when treated promptly. If treatment is delayed, bacteria and other pathogens, such as viruses and fungi, get an opportunity to cause infection, which can further complicate the condition. Without proper treatment, or with severe injury, corneal damage can lead to blindness. If the eye is severely damaged, surgical removal of the eye may be recommended to prevent the pet from suffering with constant pain and infection.

What Are the Signs of Corneal Ulceration?

Corneal ulcers are extremely painful. Animals with this condition may squint, rub their eyes, or tear excessively. Sometimes, a thick mucous discharge can develop. Clinical signs of corneal ulceration also include the following:

- Closed eyelids
- Tearing, swelling, redness of the eyes
- Conjunctivitis (inflammation of the membranes lining the eye)
- Sensitivity to light
**Diagnosis**

Diagnosis of corneal ulceration includes a physical examination to look for evidence of illness or trauma that may contribute to corneal damage. Your veterinarian will also examine your pet’s eye to determine the extent of the eye problem. For pets that are in pain, your veterinarian may first apply a few drops of a sterile topical anesthetic to your pet’s eye. This solution will make the surface of the eye numb, so a full examination can be completed without causing pain.

Many veterinarians use a sterile dye called fluorescein to diagnose a corneal ulcer. Although it sounds painful, staining the eye is painless and quick. Fluorescein is a greenish-yellow dye that does not stick to the surface of an intact cornea but does stick to the underlying layers of the cornea if they are exposed (as with a corneal ulcer). Fluorescein may be applied as an eyedrop solution. It is also available as a dry coating on a tiny strip of sterile paper. Your veterinarian can gently touch the eye surface with the sterile strip to apply the fluorescein stain.

Once the eye has been stained, the veterinarian generally examines the eye in a darkened room using a handheld ultraviolet light. If the cornea is damaged, the dye will stick to the damaged area. Under the ultraviolet light, the corneal injury will appear as a bright green–yellow area.

If corneal ulceration is suspected to be caused by another problem, such as KCS, additional diagnostic testing may be recommended to learn more about the pet’s underlying problem.

**Treatment**

Most corneal ulcers respond well to specially formulated antibiotic eye drops or ointment applied directly to the patient’s eye. If the underlying problem is dry eye (KCS), additional therapy can be initiated to help improve the condition. If the underlying cause is entropion, surgical correction may be recommended.

If the corneal ulcer is very deep or very large, other measures may be recommended, including an eye patch or surgery to temporarily cover (and protect) the surface of the cornea.
Creatinine Level

- The kidneys are largely responsible for maintaining the body’s creatinine level within a healthy range.
- The creatinine level can be affected by many things, including certain medications and various illnesses.
- If your pet’s creatinine level is abnormal, additional tests may be recommended to determine the cause.

What Is Creatinine?

Creatinine is a substance that the body produces during normal metabolism. The body eliminates creatinine almost exclusively through the kidneys’ filtration process, so measurement of creatinine is an accurate estimation of how well the kidney filtration processes are working. Anything that alters the ability of the kidneys to filter efficiently (such as dehydration) can cause changes in the level of creatinine in the blood.

The creatinine level is an important part of a blood test known as a chemistry panel, so it is often evaluated during routine wellness checkups or pre-surgery screening in healthy pets. Often, it is evaluated along with urine tests or other blood tests that screen for abnormalities involving the kidneys. Because various illnesses can affect the creatinine level, your veterinarian may recommend measuring your pet’s creatinine level if your pet has any of the following signs of illness:

- Vomiting
- Appetite loss
- Lethargy (tiredness)
- Anemia
- Increased drinking and/or urination
- Weight loss
- Dehydration

How Is the Creatinine Level Measured?

To measure your pet’s creatinine level, your veterinary team must obtain a small blood sample. This procedure is usually very quick; it may take only a few seconds if the patient is well behaved. For patients that are very frightened or not well behaved, your veterinary team may want to use a muzzle, towel, or other gentle restraint device. In some cases, such as in patients with very thick fur, it may be necessary to shave the hair from the area where blood will be drawn. The hair will grow back, and this is often a good way to find the vein quickly.

Some veterinary offices have in-house blood analysis equipment, so they can perform the test for creatinine in the office and have results the same day. Other offices send blood samples to an outside laboratory for the test to be performed. If an outside laboratory is used, results are generally available within 1 to 2 days.
Be sure to tell your veterinarian about any medications or supplements your pet may be receiving, as some products can alter the creatinine level in the blood.

**What Does the Creatinine Level Tell Your Veterinarian?**

Although changes in the creatinine level are commonly associated with kidney disease, many other factors can affect the creatinine. Some antibiotics, for example, can cause the creatinine level to increase.

The following are a few conditions that cause an abnormal creatinine level:

- Dehydration
- Kidney infection
- Kidney failure
- Toxic injury to the kidneys
- Urinary blockage
- Shock
- Severe heart disease
- Muscle wasting or severe weight loss

If your pet has an abnormal creatinine level, your veterinarian will combine that information with other vital information about your pet to decide if further diagnostic testing is recommended to investigate the abnormal result. Additional tests may include a urinalysis (a screening test to evaluate components in the urine), radiographs (x-rays), or additional blood testing. Depending on your pet’s overall condition, your veterinarian may recommend medications or other management.

**Are There Risks Associated With Measuring the Creatinine Level?**

Very few risks are associated with measuring the creatinine level. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.
Cushing's Disease

- Cushing's disease occurs when the body produces excessive amounts of a hormone called cortisol.
- Cushing's disease affects middle-aged and older dogs. It is rare in cats.
- Diagnosis can be difficult and may require several different types of tests.
- Surgery is an option for some dogs, but most dogs receive medication to control the condition.

What Is Cushing's Disease?

Cushing's disease occurs when the body produces and releases excessive amounts of a hormone called cortisol. It is named after the doctor who first described it in people. The veterinary medical term for Cushing's disease is hyperadrenocorticism.

Cortisol is produced by the body’s adrenal glands. Normally, the body has highly developed systems called feedback mechanisms that control how much cortisol the adrenal glands produce and release, based on the body’s needs. Cortisol affects many functions in the body, including immunity, reproductive health, and systems that control the body’s fluid balance.

Cushing's disease occurs when a change in the body causes the adrenal glands to ignore the feedback mechanisms, leading to excessive production and release of cortisol. Sometimes, this change is a tumor on one of the adrenal glands; in other cases, the adrenal glands are “tricked” by another gland (the pituitary gland in the brain) into continuing to produce too much cortisol. Regardless of the cause, the sustained overproduction and release of cortisol eventually causes Cushing's disease.

Cushing's disease is most commonly diagnosed in dogs, although it does occur rarely in cats. Middle-aged and older dogs are generally affected, and certain breeds such as poodles, cocker spaniels, and dachshunds seem to be more at risk due to genetic factors.

What Are the Clinical Signs of Cushing's Disease?

Because most dogs with Cushing's disease are middle aged or elderly, some of the subtle signs of illness can be easily misinterpreted as evidence that the pet is simply “getting older” and “slowing down.” These signs may include weight gain, lethargy (tiredness), reduced ability to exercise, and muscle weakness. Other clinical signs associated with Cushing's disease can include the following:

- Increased drinking and urination
- Increased appetite
- Thinning hair
- Panting and increased rate of breathing
- Enlarged or distended abdomen

Diagnosis
Diagnosis of Cushing's disease may require several steps; in some cases, the diagnosis can be difficult. Your veterinarian will likely begin by reviewing your pet's medical history for any suspicious clinical signs. A complete physical examination may be followed by recommendations to perform diagnostic tests. Results of these background tests can support the diagnosis of Cushing's disease:

- **Blood tests:** Because excess cortisol can affect the liver, blood chemistry values associated with the liver may be abnormal. The numbers and types of white blood cells may also be affected.
- **Urinalysis:** Increased water drinking associated with Cushing's disease can cause the urine to become diluted.
- **Abdominal x-rays:** Dogs with Cushing's disease may have an enlarged liver that is visible on x-rays.
- **Abdominal ultrasonography:** Ultrasonography can detect liver enlargement as well as changes in the adrenal glands that may be consistent with Cushing's disease.

Your veterinarian may also recommend some specific tests that evaluate the body's cortisol feedback mechanisms to determine if they are functioning properly:

- **Dexamethasone suppression test:** Normally, if the body is given cortisol from an outside source (for example, in a pill or by injection), the adrenal glands respond by decreasing their own production and release of the hormone. The dexamethasone suppression test involves administering a very small amount of cortisol by injection and drawing blood to measure the body's cortisol production during the following few hours. With Cushing's disease, the adrenal glands continue to produce cortisol despite the introduction of additional quantities. This response is consistent with a diagnosis of Cushing's disease.
- **ACTH stimulation test:** The letters ACTH stand for *adrenocorticotropic hormone*. This hormone is produced by the body and stimulates the adrenal glands to produce and release cortisol. The ACTH stimulation test involves administering a small amount of ACTH by injection and measuring the levels of cortisol produced over a period of a few hours. In dogs with Cushing's disease, the injection of ACTH causes the adrenal glands to release unusually high amounts of cortisol.

Both of these tests require hospitalization for a few hours so that blood can be drawn to check the body’s response to the injections. Another test for Cushing's disease involves testing the urine for evidence of high cortisol levels. This test does not require hospitalization.

**Treatment**

If your veterinarian determines that your dog has a tumor involving an adrenal gland, surgery may be an option. However, for most dogs, Cushing's disease can be controlled with medication. Most dogs must continue to receive medication throughout their lives to maintain cortisol levels within a healthy range.
Declaw Surgery in Cats

- Scratching is a natural cat behavior, but it can be destructive in a household.
- Declaw surgery generally involves the removal of all or a portion of the last bone in each digit of the forepaws.
- Younger cats (under a year of age) tolerate the surgery better than older or obese cats.
- Declawing is painful and can often be avoided by training cats to use scratching posts, keeping nails trimmed, or applying commercially available covers to the nail tips.

What Is Declaw Surgery?

Declaw surgery, also known as onychectomy, generally involves the surgical removal of the claw and all or a portion of the last bone in each digit. It is usually performed on the front paws only. Younger cats (under 1 year of age) tolerate the procedure better than older or obese cats that bear more weight on their paws.

Why Are Cats Declawed?

Scratching on surfaces is a natural behavior for cats. It’s how cats sharpen their claws and mark their territory. But when cats scratch on household items like furniture, stereo speakers, rugs, and screen doors, it can be seen as destructive behavior. In most cases, this behavior can be avoided by training cats to scratch on more appropriate surfaces, such as scratching posts, and by keeping their nails trimmed.

Because the procedure can be very painful, it’s best to explore other alternatives before deciding to declaw your cat. Cats that go outdoors generally shouldn’t be declawed because it deprives them of a primary mode of defense against other animals.

What Are the Alternatives to Declawing?

There are a number of steps you can take to prevent destructive scratching:

- **Keep nails trimmed**: The staff at your veterinary clinic can show you how to trim your cat’s nails safely, or they can perform this procedure for you if you are uncomfortable trimming your cat’s nails.
- **Provide appropriate alternatives**: Scratching posts are available at most pet stores. You can sprinkle catnip on the post to enhance its appeal, or provide treats to reinforce good behavior for using the post.
- **Avoid punishment**: Never spank your cat or yell at it for inappropriate scratching behavior. If your cat scratches on furniture, just say “no,” and bring the cat to the scratching post. When your cat is scratching on furniture, you can also try spraying him or her with a water bottle, as long as the cat doesn’t realize you are controlling the water.
- **Make furniture less appealing**: Cover popular scratching sites with aluminum foil, plastic, or double-sided tape. You can also use scent deterrents, which are available at most pet stores.
- **Try nail covers**: Soft vinyl caps (available at pet stores) are glued to the tip of each nail every 6 to 8 weeks to blunt the effects of scratching.

**Are There Different Kinds of Declaw Surgeries?**

Yes. The technique varies depending on the preference of the veterinarian. There are two traditional surgical techniques, which involve using either a scalpel or a clipper to remove the claw.

A third surgical technique uses a laser to remove the claw. With this procedure, there is relatively little bleeding, and some cats (especially young cats that are not overweight) have less postoperative pain. Laser declawing tends to be more expensive than other techniques, and not every veterinarian has the equipment to perform this procedure.

A final technique, called a *tendonectomy*, does not remove the claws, but instead cuts the tendons on the underside of the paw. With this procedure, the claws remain retracted in the paw, so they generally can’t cause harm as long as they are trimmed on a regular basis.

**How Do I Care for My Cat After Surgery?**

Replace your regular litter with shredded newspaper or commercial litter made of newspaper until your cat’s paws have healed. This is to prevent granules of litter from becoming embedded in the healing tissues.

Your veterinarian can provide some kind of pain medication, either in the form of a skin patch and/or oral pain medications.

Some cats may experience temporary lameness after declaw surgery. If you notice any swelling, bleeding, or discharge, or if the lameness doesn’t improve, see your veterinarian.
Demodectic Mange

- Demodectic mange is an inflammatory skin condition caused by microscopic mites of the genus Demodex.
- It is most common in young dogs and rare in cats.
- Signs include scaly patches of bare skin, which may or may not be itchy.
- Your veterinarian can diagnose the condition by taking a sample from your pet’s skin and examining it under a microscope.
- The localized form typically resolves on its own without treatment.
- The generalized form may be treated with oral or topical medications and antibiotics.

What Is Demodectic Mange?

Demodectic mange is an inflammatory skin condition caused by microscopic mites of the genus Demodex. These mites are transmitted from mother dogs and cats to their puppies or kittens during nursing and become normal inhabitants of the hair follicles. In small numbers, the mites usually don’t cause problems. However, in animals with certain genetic factors, metabolic disease, or a compromised immune system, the number of mites can increase, causing skin inflammation.

Demodectic mange usually occurs in dogs younger than 18 months and in older, immunocompromised dogs. Although it can be found in any breed, it is more common in certain purebred dogs, such as shar-peis, Dobermans, Great Danes, and Chihuahuas. Cats rarely get demodectic mange.

Is Demodectic Mange Contagious?

In general, demodectic mange is not considered a contagious disease. You will not get the mites from your pet, and other pets in your household will usually not be affected. As puppies and kittens grow, they usually develop immunity to the mites and do not experience skin infections. The mites are also selective about where they live. The species Demodex canis is most commonly found on dogs, while Demodex cati prefers cats.

What Are the Signs?

Animals may have localized or generalized demodectic mange. In the localized form, animals may lose one or more patches of hair, usually around the eyes and mouth, limbs, and trunk. The skin within the patches may be dry and flaky but is generally not itchy.

Animals with generalized demodectic mange lose hair in large areas over their entire body. The exposed skin is red and scaly and often becomes itchy, smelly, and painful because of secondary infections. Dogs with this form of demodectic mange should not be used for breeding because genetics often plays a part in this disease.

In some animals, hair loss may be limited to the paws. Affected areas are often red, and they may become infected and painful, causing your pet to limp.
**How Is Demodectic Mange Diagnosed?**

If your veterinarian suspects demodectic mange, he or she will scrape your pet’s skin or pluck some hair to search for mites. The mites tend to live deep within hair follicles, so your veterinarian will have to squeeze the skin and gently scrape several hairless patches with a scalpel blade until the area bleeds slightly to obtain samples that contain mites. He or she can then place these samples on a glass slide and look at them under a microscope to see the tiny mites.

If your veterinarian is unable to find mites but still suspects that they are the cause of the problem, he or she may recommend that a skin biopsy be performed. In other cases, your veterinarian may choose to treat your pet for demodectic mange to see if the condition improves with treatment.

In older dogs, demodectic mange is usually caused by a compromised immune system. If an older dog is affected, your veterinarian will most likely want to test for underlying conditions, such as a glandular disorder, liver or kidney disease, or cancer.

**How Is Demodectic Mange Treated?**

The localized form of demodectic mange generally resolves on its own within a few weeks or months and doesn’t require treatment. However, you should bring your pet in for a recheck exam to make sure the condition doesn’t become generalized.

Treatment for the generalized form requires patience. It may take several months before you see improvement. In some cases, the condition can’t be completely cured, only managed, and may come back. Your veterinarian has several options for treating demodectic mange. Some treatments are applied directly to the skin in the form of a dip or a spot-on solution that kills the mites. Other medications can be given by mouth. Because some treatments for demodectic mange have effects throughout the body, your veterinarian may recommend heartworm testing and additional blood tests for your dog before deciding which treatment to use. Your veterinarian will evaluate your dog’s condition and determine the best method of treatment for your pet. Regardless of which therapy is selected, treatment often must continue for many months, so be prepared for a lengthy commitment to therapy. Periodic skin scrapings should be performed to monitor treatment progress, and treatment often lasts for at least a month after the point when mites are not seen under the microscope.
Dental Care

- Without routine dental care, most dogs and cats develop periodontal (dental) disease by 3 years of age.
- Periodontal disease is the most common health problem in dogs and cats.
- Bad breath may be a sign of periodontal disease in your pet.
- Providing routine dental care for your pet can be easy and can benefit your pet’s oral and overall health.

What You Need to Know

Bad breath in pets may be a sign of periodontal disease that could lead to other health problems. Periodontal disease starts when plaque (a bacterial film) coats the tooth. Plaque hardens (calcifies) into tartar, a thick yellow or brown layer on the teeth. Tartar can irritate the gums, creating an environment where bacteria thrive. As the disease progresses, the gums become tender, red, and swollen and the bacteria continue to multiply. Eventually, the inflamed gums pull away from the teeth, creating pockets that trap more bacteria and food particles. The gums bleed, the roots of the teeth may become exposed, teeth may become loose, and your pet may feel pain when eating. If the bacteria enter the bloodstream, they can create problems for organs such as the heart, lungs, liver, and kidneys.

Signs of Dental Problems

- Bad breath
- Sensitivity around the mouth
- Loss of appetite
- Yellow or brown deposits on the teeth
- Bleeding, inflamed, and withdrawn gums
- Loose or missing teeth
- Pawing at the mouth or face
- Difficulty chewing

What to Do

Your pet needs routine dental care from your veterinarian and you. Annual veterinary checkups are essential for helping your veterinarian monitor your pet’s dental health, but don’t wait for a checkup if you suspect a problem. After an examination, your veterinarian may recommend a dental prophylaxis (tooth cleaning) for your pet. Anesthesia and pain medication are used for dental procedures. If dental disease is severe, your veterinarian will recommend the best treatment, which may include tooth extraction.

Pets are never too young to start having their teeth brushed at home; in fact, the younger they are, the better. Slowly and gently introduce your pet to toothbrushing. It should be a bonding experience that is reinforced with praise and rewards. Begin by rubbing your pet’s teeth and gums with soft gauze wrapped around your finger. Gradually switch to using a specially designed pet toothbrush or baby toothbrush with pet toothpaste (do not use toothpaste for people
because it can upset your pet’s stomach). If your pet is most at ease on your lap, keep his or her toothbrush next to the chair where you sit together. Focus on your pet’s gum line, and work up to 30 seconds of brushing for each side of the mouth at least a few times a week. If your pet won’t tolerate brushing, your veterinarian can recommend plaque-preventive products for your pet.

There’s no substitute for regular brushing, but feeding dry food can help keep your pet’s teeth and gums in good condition. In addition, special plaque-reducing foods, treats, and toys can help. The Seal of Acceptance from the Veterinary Oral Health Council appears on products that meet defined standards for plaque and tartar control in dogs and cats. Ask your veterinarian for recommendations.

Caring for your pet’s teeth can have several benefits. For example, a few minutes of brushing each week can help give your pet a longer, healthier life.

Ways to Prevent Periodontal Disease in Your Pet

- Take your pet to annual veterinary checkups
- Brush your pet’s teeth or use plaque-reducing products at least a few times a week
- Feed dry food
- Provide plaque-reducing foods, treats, and toys
Dental Cleaning

- 85% of all pets have periodontal disease by the time they are 3 years of age.
- Dental disease can result in bad breath, painful chewing, and tooth loss.
- Bacteria under the gum can travel to the heart, kidneys, and liver.
- A professional dental cleaning is required to remove plaque and tartar from a pet’s teeth and to assess the health of the mouth.
- A thorough dental cleaning requires that the pet be under anesthesia.
- Regular, at-home dental care can help improve the health of your pet’s mouth and lengthen the intervals between professional dental cleanings.

It’s estimated that 85% of all pets have periodontal disease by the time they are 3 years of age. Periodontal disease is a progressive disease of the supporting tissues surrounding teeth and the main cause of early tooth loss.

Periodontal disease starts when bacteria combine with food particles to form plaque on the teeth. Within days, minerals in the saliva bond with the plaque to form tartar, a hard substance that adheres to the teeth. The bacteria work their way under the gums and cause gingivitis—inflammation of the gums. Once under the gums, bacteria destroy the supporting tissue around the tooth, leading to tooth loss. This condition is known as periodontitis. Gingivitis and periodontitis make up the changes that are referred to as periodontal disease. The bacteria associated with periodontal disease can also travel in the bloodstream to infect the heart, kidneys, and liver.

A professional veterinary dental cleaning is the only way to remove tartar from the teeth and under the gum tissue to protect your pet’s health. With a professional dental cleaning and follow-up care, gingivitis is reversible. Periodontal disease is not reversible, but diligent at-home dental care and regular veterinary cleanings can slow down the progression of the condition.

What Is a Dental Cleaning?

During a dental cleaning (sometimes called a prophylaxis), (1) plaque and tartar are removed from a pet’s teeth and (2) the health of the entire mouth (tongue, gums, lips, and teeth) is assessed. A thorough dental cleaning can be accomplished only while the pet is under general anesthesia. Anesthesia keeps your pet free of pain during the dental procedure and allows your veterinarian to fully inspect the teeth and remove tartar from under the gums. During anesthesia, a soft plastic tube is inserted into the trachea (the main airway in the throat) to support the patient’s breathing. Placement of the tracheal tube also prevents inhalation of bacteria that are aerosolized during the dental cleaning.

A dental cleaning may include the following:

- Removal of visible plaque and tartar from the teeth
- Elimination of plaque and tartar from under the gum
- Probing of dental sockets to assess dental disease
- Polishing to smooth enamel scratches that may attract bacteria
- Dental radiographs (x-rays) to evaluate problems below the gum line
- Application of fluoride or a dental sealer
- Removal or repair of fractured or infected teeth
- Dental charting so progression of dental disease can be monitored over time
- Inspection of the lips, tongue, and entire mouth for growths, wounds, or other problems

**How Do I Know if My Pet Needs a Dental Cleaning?**

Regular inspection of your pet’s mouth is important to catch dental disease in the early stages. Tartar may appear as a brownish-gold buildup on the teeth, close to the gum line. Redness or bleeding along the gum line may indicate gingivitis. Other signs of dental disease include:

- Bad breath
- Drooling
- Pawing at the mouth
- Difficulty chewing
- Loose or missing teeth

If you notice any of these signs in your pet, schedule an appointment with your veterinarian.

**What Are the Benefits of a Dental Cleaning?**

A professional dental cleaning removes not only the visible plaque and tartar on the teeth surfaces but also the bacteria under the gums. This eliminates potential sources of infection to the mouth and other organs and protects your pet from pain and tooth loss.

**What Can I do to Keep My Pet’s Teeth Clean?**

Once a dental cleaning has been performed, you can take a number of steps at home to keep your pet’s teeth clean and lengthen the intervals between dental cleanings.

Your veterinarian may recommend a plaque prevention product—a substance that you apply to your pet’s teeth and gums on a weekly basis. The product adheres to the teeth surface to create a barrier that prevents plaque from forming.

Just as in people, daily brushing can help remove food particles from between your pet’s teeth. You can use a child’s toothbrush or purchase a finger brush from your veterinarian. Human toothpastes should be avoided because they contain ingredients that should not be swallowed by your pet. Your dog or cat may like the taste of pet toothpaste, which is available in flavors such as chicken, seafood, and malt.

Several dental diets and treats can also help keep plaque and tartar to a minimum. The diets tend to have larger kibbles to provide abrasive action against the tooth surface when chewed. Or they may contain ingredients that help prevent tartar mineralization. Ask your veterinarian which diets or treats are appropriate for your pet.
Dental Exam

- A dental exam is performed by your veterinarian to determine the overall dental health of your pet.
- A dental exam can help identify early signs of dental disease.
- Left untreated, periodontal disease can lead to kidney problems, heart disease, and other health issues.

What Is a Dental Exam?

The term *dental disease* in dogs and cats is very broadly used to describe gingivitis (inflammation of the gums) and periodontitis (inflammation of the bone and other support structures around the tooth). Another term commonly used to collectively describe these two conditions is *periodontal disease*.

According to a study by the American Veterinary Dental Association, over 80% of dogs and cats older than 3 years have some form of periodontal disease. It’s very important to keep your pet's teeth clean and healthy, and a good way to start is by having your veterinarian perform regular dental examinations on your pet.

How Is a Dental Exam Performed?

As with any other medical condition, a dental examination generally begins with a medical history. Before performing a dental exam, your veterinarian may ask if you have noticed bad breath, excessive drooling, or pawing at the mouth, which can indicate that your pet suffers from a dental issue.

Your veterinarian will then begin by examining your pet's head and neck, noticing any abnormalities, such as swellings, lumps, pain, or enlarged lymph nodes. An abscess is a collection of pus surrounded by inflamed tissue. Abscessed teeth can cause swelling of the cheek and jaw and are usually very painful. Lymph nodes become enlarged when infection is present. Your veterinarian will also smell your pet's breath. Bad breath is a sign of periodontal disease.

Next, your veterinarian will check your pet's teeth and gums for redness, bleeding, and inflammation. Gingivitis (inflammation or infection of the gums) can cause the gums to appear red or swollen and to bleed easily. Gingivitis can result from either accumulation of bacteria at the gum line or infection with certain viruses (such as feline leukemia virus and calicivirus). Gingivitis can be painful and can progress to periodontal disease, tooth abscesses, and tooth loss.

During a dental exam, your veterinarian will examine your pet's teeth for damage (such as cracks) and plaque and tartar. Plaque is the yellow, gummy substance that sticks to teeth; it eventually hardens to become dental tartar. Daily toothbrushing helps to remove plaque, but once tartar forms, it can be removed only by professional dental cleaning.
Plaque and tartar harbor bacteria, which can attack the teeth, gums, bones, and surrounding structures. Bacteria from periodontal disease can also enter the bloodstream and affect the liver, kidneys, and heart, causing further problems.

When examining your pet's mouth, your veterinarian will also look for lumps or growths that could be oral cancers. If any questionable lumps are seen, a biopsy may be recommended to determine if the growth is cancerous.

Some parts of a dental exam, such as those mentioned above, can generally be performed without sedation. However, if a patient is very painful or is aggressive during physical examination, your veterinarian may recommend sedation to complete even a brief or partial dental examination. A full dental examination, which requires sedation, involves probing the gum line and spaces between the teeth for pockets.

**Dental X-rays**

Dental x-rays may be obtained during a dental examination. X-rays can help your veterinarian to determine the health of the roots of the teeth and to diagnose impactions (teeth that are wedged in and can’t move into a normal position), fractures, and tooth root abscesses. Sedation is required for obtaining dental x-rays.

**What Are the Benefits of a Dental Exam?**

Healthy teeth are important for your pet’s overall health. A dental examination can alert you and your veterinarian to dental issues in your pet and can help determine the most effective treatment. Without proper dental care, pets may develop painful periodontal disease, suffer from inflamed gums, and even lose teeth.

Young puppies and kittens can also benefit from dental examinations. As puppy and kitten teeth are replaced by adult teeth, your veterinarian can perform a brief dental exam to see if all of the adult teeth are coming in normally. Sometimes, puppy or kitten teeth don’t fall out when they should, which can interfere with the positioning of the adult teeth as they try to come in. Puppy and kitten checkups are ideal for reviewing toothbrushing tips with your veterinary team and for getting your pet used to dental exams.

**At Home Dental Care**

After the dental examination, your veterinarian may recommend that your pet receive a dental cleaning. At-home dental treatments such as toothbrushing, dental rinses or gels, dental chew toys, and other types of dental care may also be recommended. There is even a vaccine available (for dogs) that can help prevent periodontitis. After performing a dental examination, your veterinarian can discuss with you whether the dental vaccine may benefit your dog’s oral health.

Most people brush their teeth regularly, but many of our pets don’t have the benefit of consistent at-home care. If you currently have an at-home dental care program for your pets, congratulations! Regular dental exams with your veterinarian are a good way to evaluate your
program and determine if adjustments are needed. If you aren’t yet giving your pets at-home
dental care, a dental exam can tell you how your pet’s teeth are doing and what you need to do to help maintain your pet’s oral health.
Dental Radiography

- Dental radiography is painless, very safe, and noninvasive.
- Dental radiography is useful for evaluating tooth roots and surrounding bone.
- Sedation or anesthesia is necessary so that your pet can be properly positioned for dental radiography.

What Is Dental Radiography?

A radiograph (sometimes called an x-ray) is a type of photograph that reveals the body’s bones and internal organs. The procedure for obtaining a radiograph is called radiography. Dental radiography involves obtaining x-ray images of the mouth, teeth, and jaws. Radiography is painless, safe, and completely noninvasive.

When Is Dental Radiography Recommended?

Dental radiographs are generally obtained during a routine dental examination and cleaning. However, in cases of facial trauma or head trauma, dental radiographs may be taken to assess the extent of damage to the mouth, teeth, and jaws.

Dental radiographs can help your veterinarian evaluate the health of tooth roots and identify a variety of problems that are not visible just by looking at your pet’s teeth, including:

- Tumors involving the bones of the jaw
- Tooth impactions (teeth that are wedged in or can’t erupt normally)
- Tooth fractures
- Tooth root abscesses
- Retained teeth (teeth that failed to erupt at the proper time)
- Feline resorptive lesions (painful erosions on the tooth surface)

Because sedation is required for obtaining dental x-rays, your veterinarian may recommend blood work and other preanesthetic testing before taking dental radiographs of your pet. Sedation is needed so that your pet can be properly positioned for the radiographs to be taken. During the dental radiography procedure, your pet will be monitored closely to ensure a safe recovery from sedation.

Dental radiography generally takes only a few minutes. Some veterinarians use traditional dental radiography equipment, whereas other practices use digital radiography equipment. After examining the radiographs, your veterinarian can identify problem teeth or other issues that may need to be addressed during the dental cleaning. Veterinarians also use radiographs after procedures such as tooth extractions to confirm that all the tooth roots have been removed.

What Are the Benefits and Risks of Dental Radiography?
Dental radiography has many benefits and very minimal risks. It is very safe, completely painless, and noninvasive. It is available in many veterinary practices and generally takes only a few minutes.

The risks associated with dental radiography are minimal. Because the level of radiation exposure needed to perform radiography is very low, even pregnant females and very young pets can undergo radiography. In the vast majority of cases, the benefits of performing dental radiography far outweigh any possible risks. Dental radiography is a valuable tool for your veterinarian because it can provide important information about the health of your pet’s teeth and gums.
Desoxycorticosterone Pivalate (DOCP) for Addison's Disease

- Addison’s disease occurs when the body cannot produce adequate amounts of certain hormones, including a hormone called cortisol.
- Desoxycorticosterone pivalate (DOCP) is an injectable medication used to help manage Addison’s disease.
- Most pets with Addison’s disease respond well to appropriate treatment and can live normal life spans.

What Is Addison’s Disease?

Glucocorticoids (primarily cortisol) and mineralocorticoids are two important types of hormones produced by the body’s adrenal glands. Under normal conditions, the brain releases a hormone called adrenocorticotropic hormone (ACTH) that stimulates the adrenal glands to release their hormones. Addison’s disease occurs when either the brain doesn’t release adequate amounts of ACTH, or the adrenal glands fail to release their hormones in response to ACTH. The medical term for Addison’s disease is hypoadrenocorticism.

Glucocorticoids and mineralocorticoids help regulate numerous complex processes in the body and participate in critical functions, including the following:

- Maintaining the body’s fluid balance
- Maintaining the body’s balance of sodium and potassium
- Maintaining the integrity and functioning of blood vessels
- Regulating blood pressure and blood flow to vital organs, like the kidneys
- Supporting cardiac function
- Controlling blood sugar levels and carbohydrate metabolism
- Helping to counteract the effects of stress
- Helping to maintain immune system function

The body has highly developed systems called feedback mechanisms that control how much of these hormones the adrenal glands produce and release, based on the body’s needs. During times of physical or emotional stress, the body tends to increase the production and release of glucocorticoids (cortisol) to help it deal with the stressful episode. In contrast, when the body is receiving cortisol from an outside source (like a cortisone pill or injection), it reduces the amount of cortisol that the adrenal glands produce.

In most cases, the cause of Addison’s disease is not determined. Sometimes, the body’s immune system can damage the adrenal glands’ cells so extensively that they can’t release hormones when they need to. In other cases, such as a brain tumor, the part of the brain that should release ACTH is unable to. However, Addison’s disease can also occur if a pet that is receiving cortisol medication suddenly stops getting it. In this case, the body has reduced its own cortisol production and can’t increase it quickly enough to compensate when the medication is discontinued. This is why steroid medications (such as prednisone) should not be discontinued suddenly, but must instead be gradually reduced and then discontinued.
Addison’s disease is most commonly diagnosed in dogs, although it does occur rarely in cats. Young to middle-aged dogs are generally affected, and females are more commonly affected than males.

**What Are the Clinical Signs of Addison’s Disease?**

The clinical signs associated with Addison’s disease can vary greatly and can resemble those of other diseases. They include the following:

- Vomiting and diarrhea
- Decreased appetite
- Increased drinking and urination
- Dehydration
- Weakness and collapsing episodes
- Abdominal pain
- Weight loss
- Weak pulses and slow heart rate

These clinical signs can vary in severity, and many owners report that the problems seem to "wax and wane," sometimes seeming to resolve on their own and sometimes responding temporarily to very nonspecific treatment. Because pets with Addison’s disease have a reduced ability to handle stress, the emotional stress of visiting a boarding kennel or the excitement of a family gathering can cause clinical signs to resurface.

Diagnosis of Addison’s disease can be complicated; generally more than one type of test is needed to confirm a diagnosis.

**What Is Desoxycorticosterone Pivalate (DOCP)?**

Some pets with Addison’s disease arrive at the veterinary office in a state of life-threatening crisis. Low blood pressure, shock, dehydration, impaired heart function, and other complications of the disease can be fatal if not treated immediately and aggressively. In these cases, hospitalization for emergency intravenous fluid therapy and other stabilization is necessary.

In other cases, the clinical signs of Addison’s disease are more subtle. As long as the pet is stable, treatment can begin on an outpatient basis.

The primary treatment for Addison’s disease consists of giving the body the adrenal gland hormones it is unable to produce on its own. Glucocorticoid supplementation commonly involves administering prednisone or hydrocortisone pills. Most pets also need mineralocorticoid supplements; these are available in pill and injectable forms.

A popular mineralocorticoid formulation is injectable desoxycorticosterone pivalate (DOCP); this medication can be given as an injection every 21 to 30 days. DOCP replaces a hormone that regulates sodium and potassium balance, promotes improved cardiac functioning and blood flow to the kidneys, and helps maintain the body’s blood pressure and fluid balance. DOCP injections
are given into a muscle (intramuscularly). Your veterinarian can give injections at his or her office, but some pet owners can be shown how to give the injections at home.

Medications for Addison’s disease only replace missing hormones; they don’t cure the disease. Therefore, pets with Addison’s disease need to receive medications for the rest of their lives. Periodic veterinary examinations and repeat blood testing are required for the life of the pet, and sometimes medication dosages need to be adjusted. Your veterinarian may also want to discuss modifying your pet’s medication during times of stress, when the body’s need for these hormones may increase. Fortunately, pets that receive proper treatment for Addison’s disease can have a normal life span and enjoy a good quality of life.
**Dewclaw Removal**

- Dewclaw removal may be recommended if the dewclaw is deformed or if extra dewclaws are present.
- Dewclaw removal may also be recommended for hunting or working dogs or if there is a risk of trauma to the toe.
- Dewclaw removal is frequently performed when pets are very young (between 3 and 5 days old).
- Most pets recover very well following dewclaw removal surgery.

**What Are Dewclaws?**

Dewclaws are the toes on the inner edge of your pet’s paws. They look like thumbs because they are up higher than the other four toes and they don’t touch the ground when your pet is walking. Some pets only have dewclaws on their front paws, whereas others have dewclaws on their front and rear paws. Some pets are born without any dewclaws, and others are born with extra ones.

**Why Are Dewclaws Removed?**

Sometimes, as for hunting dogs or other working dogs, the dewclaws are removed to prevent trauma to them. For pets born with deformed or extra dewclaws, removal is often recommended to prevent trauma to the dewclaws during normal play and activity.

**When Are Dewclaws Removed?**

In many cases, dewclaws are removed when a newborn is between 3 and 5 days old. If the procedure is not done during that time, it is recommended to wait until the pet is at least 12 weeks old. Often, dewclaws are removed while the pet is undergoing spaying or neutering.

**How Are Dewclaws Removed?**

Removing the dewclaws is a surgical procedure. If the pet is very young (3 to 5 days old), the area can be “numbed” (with local anesthesia) to complete the surgery. For older pets, full (general) anesthesia is recommended; this means that the pet is completely unconscious for the surgery.

Because the toe is removed through an opening (incision) made in the skin, the area is thoroughly cleaned and shaved before surgery to reduce the risk of infection. Once the toe is removed, stitches or surgical glue is used to close the opening. Sometimes, the paw is bandaged for a few days to help keep the area clean and dry.

**What At-Home Care Is Needed Following Dewclaw Removal?**

Most pets recover very well following dewclaw removal surgery. Medications are sometimes prescribed and may include antibiotics or pain medications. In some cases, the paw is bandaged for a few days to keep the area clean and dry. You should check the bandage several times daily.
for moisture, slippage, bad odor, or soiling. If there is no bandage, check the paw frequently for swelling, bleeding, or oozing.

Although your pet doesn’t walk on the dewclaws, it is often recommended to minimize jumping and running for a few days after surgery.

Most pets eat, drink, and behave normally after surgery. Notify your veterinarian if your pet seems lethargic (tired) or doesn’t want to eat or drink. Also notify your veterinarian if your pet seems uncomfortable or if any other problems are observed.
Deworming and Prevention of Gastrointestinal Parasites in Dogs and Cats

- Gastrointestinal parasites can cause serious illness in pets, and some parasites can infect humans.
- Deworming involves administering medication to treat and control gastrointestinal parasites. Your veterinarian can recommend the most appropriate deworming medications for your pet.
- Any new pet entering your home should be tested for parasites as soon as possible and treated if parasites are found.

What Are Gastrointestinal Parasites?

Gastrointestinal (GI) parasites include any parasites that live in the stomach or intestines of a host. A variety of GI parasites affect dogs and cats. They range from roundworms and tapeworms, which are visible with the naked eye, to microscopic organisms like coccidia and Giardia. Regardless of their size, GI parasites can cause serious illness and sometimes even death in pets. Some parasites are zoonotic, which means humans can become infected. The following are the most common GI parasites in pets:

- **Roundworms**: Roundworms are visible with the naked eye and resemble small pieces of spaghetti. In humans, roundworms can lead to larva migrans, an illness caused by migration of young worms through body organs such as the liver, lungs, and nervous system. Young roundworms may also travel to the eye, where they can cause blindness.
- **Hookworms**: These worms attach to the intestinal wall and suck blood and other nutrients from their hosts. Hookworms can cause severe blood loss and diarrhea in infected pets. Infective hookworm larvae in the environment can penetrate the skin and infect a new host. When this happens in humans, the condition is called cutaneous larva migrans. People with this condition may experience itchy skin lesions with a snakelike pattern.
- **Tapeworms**: Tapeworms are long, flat worms that are actually made up of numerous segments; each segment contains tapeworm eggs. Humans can become infected if they inadvertently eat tapeworm eggs or infected fleas (which can contain tapeworm eggs).
- **Giardia**: Giardia organisms are single-celled parasites that live in the intestines. Fecal-contaminated water, food, or soil can be sources of infection.
- **Coccidia**: Coccidia are microscopic GI parasites. They can cause severe diarrhea in some infected pets.
- **Whipworms**: Whipworms live in the large intestines of dogs and shed eggs into the environment. Female whipworms can produce over 2000 eggs daily, and environmental contamination can persist for years.

How Do Pets Become Infected With Gastrointestinal Parasites?

In most cases, eggs or infective stages of GI parasites are shed in the host’s fecal material. Once parasites are in the environment, other pets can be exposed through direct contact with feces or exposure to soil, water, or plants that have been contaminated with feces. Some GI parasites can remain in the environment for months to years.
Some parasites can infect small animals (like rodents); pets become infected when they prey on these small hosts and eat them. Some GI parasites can infect puppies and kittens when they nurse from their infected mothers, and puppies can sometimes become infected during fetal development.

Tapeworms are slightly different in that they can be transmitted by fleas. The immature stage of the tapeworm lives inside the flea. When a pet grooms a flea off of its hair, it eats the flea (and the tapeworm). The tapeworm then hatches inside the pet and continues its life cycle.

**What Are the Clinical Signs of Gastrointestinal Parasites?**

Diarrhea, vomiting, and weight loss can be among the clinical signs of GI parasite infection. However, many infected pets don’t show any clinical signs at all. The best way to tell if your pet is infected is to have him or her tested for parasites.

**What Is Deworming?**

Deworming involves administering (or in some cases, applying) medication to treat and control infections with GI parasites. Because puppies and kittens are commonly infected with GI parasites, many veterinarians routinely deworm these young patients several times. Fecal testing can detect GI parasites in most cases, but parasites are not detectable all the time. Even if testing does not confirm parasites, your veterinarian may recommend deworming as a precaution. This is not harmful to your pet.

Deworming medications come in a variety of formulations, including pills, chewable tablets, topical spot-on products that are applied to the skin between the shoulder blades, and liquid medications given by mouth. Your veterinarian can recommend the most appropriate deworming medications for your pet.

**How Can I Treat and Prevent Gastrointestinal Parasites?**

Your veterinarian can recommend several safe and effective medications to treat GI parasites. Fortunately, many monthly heartworm preventive medications also control some of these parasites, but there is no single medication that can treat and prevent all GI parasites. Here are some tips for protecting your pets:

- Use a monthly heartworm preventive that also targets GI parasites.
- For dogs, pick up fecal material promptly to reduce the risk of environmental contamination.
- For cats, clean the litterbox frequently to reduce the risk of spread in a multicat household or reinfection in a single-cat household. Also, cover sandboxes when not in use to discourage cats from depositing feces there.
- Encourage children to wash their hands after playing outside and before eating.
- Schedule regular checkups with your veterinarian, and bring a stool sample from your pet for parasite testing.
• Any new pet entering the home should be tested for GI parasites as soon as possible and treated if parasites are found.
• If possible, prevent your pet from killing and eating rodents and other small animals.
• Use effective flea control to reduce the risk of exposure to tapeworms.
Dexamethasone Suppression Test

- A dexamethasone suppression test is used to help diagnose Cushing disease (a condition involving the adrenal glands) in dogs.
- Cushing disease affects the way the body produces the hormone cortisol, which has many functions in the body.
- Dexamethasone suppression testing can usually be performed at your veterinarian’s office and takes a few hours to complete. The risks associated with dexamethasone suppression testing are minimal.

What Is a Dexamethasone Suppression Test?

Dexamethasone suppression testing is used to help diagnose Cushing disease, a condition that affects the adrenal glands in dogs. Cushing disease is much less common in cats.

What Is Cushing Disease?

Cortisol is a steroid hormone produced by the body’s adrenal glands. Under normal circumstances, the body has highly developed systems called feedback mechanisms that control how much cortisol the body produces. This allows the adrenal glands to produce/release higher or lower amounts of cortisol, based on the body’s needs. Cortisol affects many systems in the body, including the immune system and systems that control the body’s fluid balance. Cushing disease occurs when something in the body causes the adrenal glands to disregard the normal feedback mechanisms. Sometimes Cushing disease is caused by a tumor on one of the adrenal glands, which continues to make cortisol despite signals from the body telling it to stop. Sometimes, the adrenal glands are “tricked” by another gland (the pituitary gland in the brain) into continuing to produce too much cortisol.

Cushing disease eventually results in negative effects on the body due to the sustained overproduction and release of cortisol. Clinical signs associated with Cushing disease can include the following:

- Increased drinking and urination
- Increased appetite
- Thinning hair
- Muscle weakness
- Liver enlargement

Cortisol overproduction can also cause problems with the body’s regulation of sugar, a condition that can predispose a pet to developing diabetes.

What Is a Dexamethasone Suppression Test Used For?

A dexamethasone suppression test checks whether the body’s cortisol feedback mechanisms are working properly. Normally, if the body is given cortisol from an outside source (for example, in a pill or by injection), the adrenal glands “realize” that there is additional cortisol in the body,
and they respond by decreasing their own production and release of the hormone. However, if the feedback mechanisms are not working properly, the adrenal glands will continue to produce cortisol despite the introduction of additional quantities. This inappropriate response by the adrenal glands is consistent with a diagnosis of Cushing disease. Your veterinarian may also recommend additional testing to help confirm a diagnosis.

**How Is a Dexamethasone Suppression Test Performed?**

Your veterinarian will begin the test by drawing a small amount of blood from your dog to check the baseline (“starting”) cortisol level. Afterward, a very small dose of cortisol is given by injection. Repeat blood samples are then taken at specific intervals (a few hours apart) to measure the cortisol level and determine if the body’s response to the injection of cortisol is appropriate. The blood samples are submitted to a diagnostic laboratory. Results are generally available within a few days.

Your veterinarian will likely recommend that your dog remain in the hospital for the few hours that are needed to complete the dexamethasone suppression test. This is to avoid stress (for example, from a car ride), which can affect your dog’s cortisol level and reduce the accuracy of the final test result. Generally, dogs undergoing dexamethasone suppression testing are temporarily kept in a very quiet area of the hospital to reduce stress and excitement as the test is being performed. Your veterinarian may ask you to withhold food on the day of the test. You should mention any medications or supplements that your pet may be receiving, as some chemicals can affect the accuracy of the test. Be sure to address any questions or concerns with your veterinarian.

**What Are the Benefits and Risks of Dexamethasone Suppression Testing?**

There are very few risks associated with dexamethasone suppression testing. The amount of cortisol that is given by injection is very small and is not enough to cause side effects. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at your veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.

Diagnosing Cushing disease can be complicated, but early diagnosis can mean early treatment and a better chance at a normal life. Several different tests can be performed to diagnose Cushing disease, so your veterinarian may recommend performing multiple tests to help confirm the diagnosis.
Diabetes Insipidus in Cats

- Diabetes insipidus occurs when the body is unable to produce an adequate amount of the hormone vasopressin (also called anti-diuretic hormone [ADH]).
- Affected cats drink excessively because they lose excessive amounts of fluid through urination.
- With treatment, cats with diabetes insipidus can live a normal life span and enjoy a relatively normal life.

What Is Diabetes Insipidus?

When most of us think about diabetes, we think of a condition called diabetes mellitus. This is a disease in which the body doesn’t make an adequate amount of the hormone insulin or the body is unable to use its available insulin effectively. The result is an inability to regulate the body’s blood sugar level.

However, there is another form of diabetes called diabetes insipidus. Like diabetes mellitus, diabetes insipidus involves changes in one of the body’s hormone levels. Diabetes insipidus occurs when the body is unable to produce an adequate amount of the hormone vasopressin (also called anti-diuretic hormone [ADH]) or when the available vasopressin is not being used properly.

Normally, ADH is produced by the brain, enters the bloodstream, and affects several areas of the body, particularly the kidneys. ADH helps the kidneys retain water, which is necessary for keeping the body adequately hydrated. Diabetes insipidus occurs when the body doesn’t have enough ADH or when the kidneys can’t use it properly. The result is fluid loss by the body, leading to dehydration.

Because ADH is produced in the brain, medical conditions such as brain injury, brain inflammation, and brain tumors can sometimes interfere with the brain’s ability to produce a normal amount of the hormone. Conditions that can reduce the kidney’s ability to use ADH properly in cats include uterine and kidney infections.

What Are the Clinical Signs of Diabetes Insipidus?

Because ADH helps the body retain water, an inadequate amount of ADH (or an inability to use it properly) causes the body to lose too much water through urine production by the kidneys. A very common clinical sign associated with diabetes insipidus is increased production of abnormally dilute urine. The pet responds to this water loss (dehydration) by drinking more water, so cats with diabetes insipidus tend to urinate frequently and drink large amounts of water. Affected cats may also urinate outside the litterbox or use much more litter than normal.

In some cases, the cat may be so desperate for water that he or she stops eating (preferring instead to drink even more water) and begins to lose weight. Some cats also “steal” water from various sources around the home.
How Is Diabetes Insipidus Diagnosed?

Your veterinarian will begin the diagnostic process by obtaining a thorough medical history from you and performing a physical examination on your cat. Initial diagnostic tests may include a chemistry panel, a CBC (complete blood cell count), a thyroid hormone test, and urinalysis. These tests can help rule out kidney disease, thyroid disease, diabetes mellitus, and other medical conditions that tend to make cats drink more water and urinate excessively. If there is an underlying medical condition that may be causing diabetes insipidus, such as uterine or kidney infection, investigation of the underlying problem will likely be part of the diagnostic process.

Additional testing for diabetes insipidus may include additional blood testing and urinalysis as well as performance of a specific test to determine if your cat’s kidneys are able to produce concentrated urine. This test may require that your cat spend a day or more in the hospital. As part of the diagnostic plan, some veterinarians administer desmopressin (a synthetic replacement for ADH) to measure how the patient responds to ADH replacement.

Your veterinarian will evaluate your pet and discuss diagnostic testing options with you.

Treatment

Synthetic ADH substitutes are available for use in cats. Some of these agents are administered by injection, but some formulations are administered as drops into the eyes or nose. Weaning the pet onto a sodium-restricted diet may also be part of the recommended therapy for diabetes insipidus.

Some pet owners may elect not to treat diabetes insipidus. In this case, the pet must have unrestricted access to water at all times. If water is restricted in any way, the pet can quickly become dehydrated and suffer life-threatening complications. Also, the home environment and daily routine must be modified to allow for frequent urination. This may include purchasing additional litterboxes and changing them more frequently.

With treatment, cats with diabetes insipidus can live a normal life span and enjoy a relatively normal life. An untreated cat can also do very well, as long as plenty of water is always available.
Diarrhea

- Diarrhea is feces that is looser or more watery than normal.
- Pets with diarrhea may defecate more frequently than usual, have accidents in the house, and may have blood, mucus, or parasites in their feces.
- Puppies and kittens with diarrhea, as well as pets showing signs of vomiting and lethargy (tiredness), should be seen by a veterinarian immediately.
- There are numerous causes for diarrhea, including eating garbage or foreign material, a sudden change in diet, viruses, and bacterial overgrowth.
- Diagnostic tests may include fecal tests, blood work, abdominal radiographs (x-rays), abdominal ultrasound, and endoscopy with biopsy (tissue sample).
- Treatment varies with the cause but usually includes special diets and/or medications.

What Is Diarrhea?

A pet with diarrhea has looser or more watery feces than normal and sometimes more frequent stools as well.

Many cases of diarrhea may resolve in a day or two without treatment. Pets that experience diarrhea for more than a few days, or show more severe signs, such as vomiting, loss of appetite, or lethargy (tiredness), should be seen by a veterinarian immediately. Puppies and kittens with diarrhea are especially susceptible to dehydration and require a veterinary exam.

What Are the Signs of Diarrhea?

In addition to loose or watery stools, pets with diarrhea may show signs such as:

- Mucus or blood in the stools
- Worms in the stools
- Accidents in the house
- Defecating with increased frequency
- Straining to defecate

Other signs that may indicate a more serious problem:

- Nausea or vomiting
- Loss of appetite
- Lethargy (tiredness) or weakness
- Abdominal pain
- Weight loss

What Causes Diarrhea?

There are many causes for diarrhea. Most commonly, it occurs when a pet eats something that is not part of his or her normal diet, such as garbage, or when the diet is changed abruptly. When changing from one kind of pet food to another, it’s best to make a slow transition over a week,
gradually mixing in more of the new food and less of the old food. This transition allows the pet’s digestive system to adjust and decreases the likelihood of diarrhea.

Other potential causes of diarrhea include:

- Bacterial overgrowth in the digestive tract
- Viruses
- Parasites
- Ingestion of foreign objects, such as toys, bones, and fabric
- Food allergies
- Inflammatory bowel disease
- Antibiotics and other drugs
- Toxins
- Pancreatitis
- Diseases in other organs (such as liver disease)
- Cancer

How Is Diarrhea Diagnosed?

Diagnosis may depend on the severity of the pet’s clinical signs and the length of time the pet has experienced the problem. Diagnostic tests may include:

- Fecal tests for internal parasites, bacterial overgrowth, and viral infections, such as canine parvovirus
- General blood tests to check for systemic diseases (diseases that affect the whole body)
- Specific blood tests, such as thyroid panels, pancreatic tests, or feline leukemia virus tests
- Abdominal radiographs (x-rays) to visualize possible obstructions and foreign bodies
- Abdominal ultrasound
- Endoscopy and biopsy (tissue sample) for chronic diarrhea cases

What Are the Treatment and Outcome for Diarrhea?

Treatment varies depending on the cause. In mild cases, your veterinarian may recommend a bland diet (a diet that will be easy for your pet’s body to digest). If there is bacterial overgrowth, your pet may need probiotics or oral antibiotics to restore the normal balance of bacteria in the digestive tract. Medications to firm the stool or treat parasites may be necessary. Diarrhea caused by ingestion of foreign objects may require surgery.

More chronic cases of diarrhea are often treated with special diets and medications. In some cases, the cause may not be completely cured and may need to be managed throughout the pet’s life.
Digoxin Level Test

- Digoxin is a medication used to treat congestive heart failure and certain heart rhythm abnormalities in dogs and cats.
- A digoxin level test requires a blood sample from your dog or cat, and the test can be performed at the hospital on an outpatient basis.
- The test results help determine if the dose of digoxin is in the correct range for treating the condition without causing harmful effects.
- Signs of digoxin toxicosis (disease caused by poisoning) include mild gastrointestinal upset and worsening of the signs associated with the heart condition.
- Pets with digoxin toxicosis should be taken off the drug immediately.

What Is a Digoxin Level Test?

The medication digoxin is used to treat congestive heart failure and a condition in which the upper chambers of the heart (the atria) beat faster than normal. This drug has a narrow therapeutic range, meaning that there is a narrow margin between the dose that improves the condition and a dose that could be toxic.

Many factors can alter the metabolism of digoxin in dogs or cats, including other medications the pet may be taking at the same time. A digoxin level test measures the level of digoxin in the blood to determine if the dose is within the therapeutic range (the correct range for treating the condition). This ensures that the pet receives the benefits of the medication without any harmful effects.

The test requires a small blood sample from your pet. Ideally, the sample should be drawn 8 to 10 hours after the pill is administered. Most hospitals send the blood sample to an outside laboratory for analysis, and the results are usually available within a few days.

When Do Pets Need This Test?

A digoxin level test should be performed 1 or 2 weeks after the pet is initially started on the medication. Your veterinarian may also recommend the test if the following occurs:

- The dose of medication is changed.
- Concurrent (simultaneous) medications are altered.
- The pet gains or loses weight.
- The pet experiences any signs of digoxin toxicosis.

What Are the Signs of Digoxin Toxicosis?

While dogs and cats with kidney disease are at risk for developing side effects from digoxin, any pet could have a problem. Possible signs of toxicosis are mild gastrointestinal upset, including vomiting, diarrhea, loss of appetite, lethargy, or weight loss.
Pet owners may also notice worsening of signs associated with the heart condition, such as increased respiratory rate, difficulty breathing, coughing, fainting, or exercise intolerance. Rarely, seizures may occur. If you notice any of these signs in your pet, contact your veterinarian immediately.

**How Is Digoxin Toxicosis Treated?**

When digoxin toxicosis is suspected, administration of digoxin should be discontinued immediately. Some pets may be treated with intravenous fluids to help eliminate the medication from their systems. Early intervention affords the best prognosis.
Ear Cleaning

- Ear cleaning can help treat or prevent ear problems.
- Follow your veterinarian’s recommendations closely.
- Always put health and safety first. If the procedure seems dangerous to you or very painful for your pet, stop and consult your veterinarian.

The Basics

Ear cleaning can help treat or prevent ear problems. Some pets are prone to ear problems and may need regular ear cleanings between veterinary visits. Ear cleaning can help remove dirt and wax that can prevent medications from reaching inflamed areas. It can also get rid of allergens and microbes that may contribute to inflammation or infection.

Ear cleaning can be relatively easy, as long as you follow a few simple guidelines. The most important guideline is to always put health and safety first. If, for any reason, your pet becomes so agitated that you feel you are at risk of being bitten or scratched, stop. If the procedure seems excessively painful for your pet, stop and get your veterinarian’s advice.

Follow Recommendations

The ear is a very delicate structure. It is very important to closely follow your veterinarian’s recommendations regarding ear cleanings. Treating too frequently or too aggressively can make the problem worse, not better. Sensitive, already inflamed parts of the ear can be damaged. Because some ear washes contain chemicals and drying agents, it is important to use only products recommended by a veterinarian.

What You Need

- Old clothes
- Safe, easy-to-clean work area (e.g., tile or linoleum floor, water-resistant walls)
- Towel
- Nonirritating ear wash or rinse recommended by your veterinarian
- Cotton balls or tissues

Technique

There are several techniques for home ear cleaning. The simplest one is described here.

- Choose a space that’s easy to clean (e.g., bathroom, laundry room, shower stall), or take your pet outside. Ear cleaning can be messy.
- Wear old clothes and keep a towel handy.
- If necessary, gently restrain your pet (see Restraining Your Pet, below). You may need a helper.
- Hold the ear solution bottle just over the opening of the affected ear and gently squeeze the prescribed amount of solution into the ear. Do not squeeze the bottle too hard, as a
powerful stream can irritate tender, inflamed ear structures. **Note:** If an ear medication requires refrigeration, do not store it at room temperature; however, allow it to reach room temperature before use to make it more comfortable for your pet.

- Fold the ear flap down against your pet’s head and try to prevent your pet from shaking his or her head too much. Gently massage the very base of the ear to distribute the solution as far as possible into the ear canal. Ask your veterinarian to demonstrate this massage.
- Keep the solution in the ear for the prescribed amount of time.
- Allow your pet to shake his or her head to remove some of the solution. (This is the messy part.)
- Use cotton balls or tissues to gently wipe away any discharge, loosened debris, and remaining liquid from the ear flap, side of the neck, hair below the ear, and opening of the ear canal. Cotton swabs should not be used because a sudden shake of the head or slip of the hand could result in a cotton swab puncturing the delicate eardrum or pushing debris inside the inner ear canal.

**Signs of Ear Trouble**

- Odor
- Scratching/rubbing at ears or side of head
- Discharge
- Debris
- Shaking/tilting of the head
- Pain
- Head shyness (not wanting the head or ears to be touched)
- Irritability

**Restraining Your Pet**

Although some pets are willing to sit or lie quietly while you clean their ears, most object, at least at first. Here are some tips on how to keep your pet from wiggling while you work:

- Place your pet on a stable work surface that you can stand next to, and allow him or her to lie down, either in an upright “sphinx” position or flat on his or her side. While standing next to your pet, put the arm you will use to treat the ear over your pet’s shoulders, and use your upper arm and elbow to press your pet against your torso to help keep him or her still. You can wrap your other arm under or over your pet’s neck to hold the ear open and ear flap back. If necessary, move to your pet’s other side or turn your pet around to treat the other ear.
- If you don’t have a high work surface, you can use the same method while seated on the floor, either holding the front of your pet’s body partially against your body or on your lap. If you have a large dog, you can stand behind him or her and have him or her sit back against your legs. Sometimes it helps to back the pet into a corner.
- Small dogs and cats can be wrapped in a large towel and held against your body, leaving only the head free. Be sure not to wrap your small pet too tightly.
• If your pet struggles, talk to him or her calmly. Stop if he or she becomes extremely agitated. Massaging the base of the ears (unless they are painful) should feel good to the pet and may help calm him or her enough that you can resume treatment.
• Be sure to reward good behavior.
Ear Hematoma

- An ear hematoma is a pocket of blood that forms inside the exterior portion of the ear.
- Often, ear mites or an infection in the ear canal cause a pet to scratch or shake his or her head. If aggressive scratching or head shaking causes the blood vessels inside the ear to break, a hematoma can form.
- Diagnosis of the ear hematoma is made by physical exam; diagnosis of the underlying condition requires examination of the ear canal and a swab of the ear contents.
- Surgical correction is usually the most effective way to prevent recurrence and preserve the natural appearance of the ear.
- Treatment of any underlying condition is necessary to prevent further problems.

What Is an Ear Hematoma?

An ear hematoma is a pocket of blood that forms within the exterior portion of a pet’s ear. Although both dogs and cats can have ear hematomas, the condition is more common in dogs.

What Causes an Ear Hematoma?

Ear hematomas are usually caused by some kind of self-trauma—such as when a pet aggressively scratches at the ears or shakes his or her head, causing the ears to slap against the skull. This trauma can cause blood to leave the blood vessels and pool in a pocket between the skin flaps that make up the outer part of the ear.

Usually, there is an underlying cause for the scratching and head shaking, such as ear mites or bacterial and/or fungal infections of the ear canal. It is crucial to treat both the ear hematoma and the underlying parasites or infection.

What Are the Signs of an Ear Hematoma?

A pet with an ear hematoma will have a fluid-filled swelling on all or portions of the inner surface of the ear flap.

How Is an Ear Hematoma Diagnosed?

Your veterinarian can diagnose this condition with a physical exam. However, it is also important to diagnose underlying conditions that may lead to excessive scratching or head shaking. The veterinarian will most likely inspect the ear canal and swab it for a sample to examine under the microscope for signs of parasites or infection.

How Is an Ear Hematoma Treated?

Surgical repair is usually the most effective treatment for ear hematomas. While your pet is under anesthesia, your veterinarian will make an incision along the length of the hematoma on the inner surface of the ear. After the fluid and blood clots are removed, the inner surface of the ear is tacked down to the outer surface of the ear with sutures. The sutures hold the inner and
outer surfaces against each other so that when scar tissue forms, the two surfaces are smooth and not lumpy. The sutures generally stay in place for a few weeks. The incision is left open so that fluid will continue to drain as the ear heals. Eventually, the incision will heal on its own.

For dogs with droopy ears, the treated ear is often flipped up and bandaged against the head to prevent head shaking during recovery. An Elizabethan collar (a cone-shaped hood that fits over the pet’s head) is often recommended so pets can’t scratch at the ears.

As an alternative, several small incisions may be made on the inside surface of the ear with a laser. In this case, sutures are not needed.

Another treatment involves the placement of a small drain, or rubber tube, in the external portion of the ear. The drain is kept in place for several weeks as the fluid resolves and the ear heals. Some pets may not tolerate this, and cats’ ears are usually too small for this technique.

In some cases, veterinarians may draw out the fluid with a needle and syringe. Medication may also be injected into the space to reduce swelling and inflammation. However, it is very common for the hematoma to come back with this procedure.

If there is an underlying ear infection or ear mites, your pet will most likely need to have the ear canals cleaned and treated with ointment or drops. Resolution of the underlying problem will help prevent another ear hematoma.

Without treatment, the ear hematoma will eventually heal on its own, but your pet will probably experience weeks of discomfort. In addition, the two sides of the ear often form thickened, wrinkled scar tissue, so the ear won’t look or feel natural. If the underlying ear condition is not treated, your pet will continue to scratch or shake his or her head, and there’s the chance that the other ear may develop a hematoma.
Ear Infections and Your Pet

- Any pet can develop an ear infection, regardless of ear shape, exposure to water (swimming), or the amount of hair inside the ear canal.
- Underlying allergies or other illnesses can cause ear infections to develop.
- Diagnosis is based on physical examination findings, but diagnostic testing may be recommended to investigate underlying factors contributing to the infection.
- Treatment usually involves applying medication into the ears, but identifying and treating underlying causes helps ensure treatment success and reduces the likelihood of reinfection.

What Is an Ear Infection?

Ear infections generally begin as inflammation of the skin inside the outer ear canal. Once the inflammation is present, discharge, redness, and other characteristics of an ear infection become established.

Any pet can develop an ear infection regardless of ear shape, exposure to water (swimming), or the amount of hair inside the ear canal. Allergies and other systemic illnesses (illnesses that affect the entire body) are commonly involved in establishing ear infections and keeping them going.

The medical term for an ear infection is *otitis*. Ear infections tend to begin in the outer ear canal, but they can progress to involve the middle ear canal and inner ear.

What Causes Ear Infections?

Ear infections in dogs and cats are most often the result of an underlying problem. Conditions that can lead to development of an ear infection include the following:

- Allergies (food or inhalant allergy)
- Ear mites
- Polyps or other growths in the ear canal
- Systemic illnesses such as thyroid disease and adrenal gland disease (in dogs)
- Foreign bodies in the ears, including dirt, sand, or plant material

Ear infections begin with inflammation of the tissue inside the ear canal. Once the inflammation is established, bacteria and yeast take advantage of this environment to infect the ear. This means that when your veterinarian is trying to diagnose and treat an ear infection, the underlying cause must be considered, along with the ear infection itself and any other bacterial or yeast infections that may be complicating the condition.

What Are the Clinical Signs of an Ear Infection?
Ear infections are painful. Some pets may even try to bite someone who attempts to touch their ears or head. The clinical signs of otitis depend on the severity of the inflammation but may include the following:

- Shaking the head or rubbing the head and ears on the floor or on furniture
- Scratching the ears
- Discharge from the ears, which can sometimes have a very bad odor
- Redness of the ear canal and ear flap; the ears may also feel warm when touched

Some pets with severe otitis may cry or groan as they rub and scratch their ears. Some pets scratch so severely that their nails create wounds on the skin around their face, neck, and ears. If the otitis is severe or chronic, the outer ear canal can begin to thicken and become deformed. This thickening can make the ear opening very narrow, so cleaning the ears becomes more difficult. Ulcerations on the inside of the ear canal can also result from infection and trauma.

Chronic or severe ear infections that begin in the outer ear canal can damage the ear drum, causing hearing loss. Additionally, progression of the infection into the middle and inner ear can be associated with more severe clinical signs, including development of a head tilt, incoordination, inability to stand or walk, and increased pain.

**How Is an Ear Infection Diagnosed?**

A medical history and physical examination findings can provide valuable information for your veterinarian when trying to diagnose an ear infection. The medical history may include trying to determine how long the ear infection has been going on, whether it has occurred before, and whether any other signs of illness have been observed. Physical examination findings may reveal evidence of underlying illness, such as thyroid disease (in dogs).

Diagnosis of otitis is usually based on physical examination findings; redness, inflammation, discharge, and other changes within the ear can indicate an ear infection. Determining the cause of the infection generally requires diagnostic testing. For example, ear mites can be diagnosed by examining a small amount of ear debris under a microscope. If your veterinarian suspects a bacterial or yeast infection, he or she may recommend culture and sensitivity testing of the debris inside your pet’s ear. To perform this test, your veterinarian places a small, sterile swab into the outer area of your pet’s ear canal to collect some of the debris. This material is submitted to a diagnostic laboratory, which can analyze it to determine exactly which bacteria or yeast are present. This information helps your veterinarian determine the best medications to treat the infection. If an underlying illness such as thyroid disease, adrenal gland disease, or allergy is suspected, blood testing or other diagnostic tests may be recommended.

Your veterinarian will also likely clean your pet’s ears to remove as much debris as possible before treatment begins.

**How Is an Ear Infection Treated?**
Your veterinarian will likely prescribe medication (usually ointment or drops) that can be placed directly into your pet’s ear to treat the ear infection. If a secondary bacterial or yeast infection is present, oral antibiotics or antifungal medication may also be recommended. In some cases, your veterinarian may recommend oral or topical steroids to help reduce swelling and inflammation and make your pet more comfortable with having his or her ears handled. Of course, identifying and treating the underlying cause of the infection is critical to ensuring treatment success and reducing the chances of reinfection.

Thyroid disease and adrenal gland disease can generally be managed with medication, but therapy is long-term, frequently for the life of the pet. Similarly, pets that develop ear infections as a result of allergies may need to remain on a hypoallergenic diet or receive long-term treatment for inhalant allergies. In contrast, ear mite infestations resolve relatively quickly with treatment and only tend to come back if the pet is exposed to ear mites again.

In many cases, the ears may start looking better after only a few applications of medication. However, it is advised to give all medications as directed for the full course of treatment. Your veterinarian may recommend recheck exams during the course of treatment to monitor how well the condition is responding to therapy. Notify your veterinarian right away if your pet’s ears begin to look worse, if the problem seems to return after treatment is completed, or if other signs of illness are observed.

Regular ear cleaning is an important part of treating otitis. If you are uncomfortable cleaning your pet’s ears, ask your veterinary team to review ear cleaning procedures with you.

In some severe or chronic cases, surgery may be recommended to stop otitis from happening again.
Ear Mites in Dogs and Cats

- The scientific name for ear mites is *Otodectes cynotis*.
- Ear mites are contagious to other animals but not to humans.
- Ear mite infestation can cause secondary ear infections, but the mites and infections are both treatable with medication.

What Are Ear Mites?

Ear mites are small parasites that live on an animal’s body, particularly in the ears of dogs and cats. Ear mites sustain themselves by eating skin cells, blood, and earwax. They deposit their waste (a dark, crusty debris) in the ear of the host animal. They also mate and produce eggs in the ear of the host. The mite’s entire life cycle is only about 3 weeks, and the mite spends its whole life on the animal. Ear mites are contagious to some other animals (for example, cats, dogs, and ferrets), but they are not contagious to humans.

Signs of Ear Mites

- Shaking/rubbing of the head and ears
- Dark, crusty debris in the ears
- Itching/scratching
- Secondary ear infections
- Red and inflamed ears

Diagnosis and Treatment

Ear mites are microscopic. Your veterinarian can find them by examining ear debris under a microscope.

Fortunately, ear mite infestations are very treatable. If ear mites have caused a secondary ear infection, it should be treated while the ear mite infestation is being treated.

Your veterinarian may prescribe ear drops that kill the mites when the medication is applied into your pet’s ears. Some spot-on flea and tick medications also kill ear mites. Your veterinarian will examine your pet and recommend an appropriate treatment.

Because ear mites are contagious to other pets, all animals in the household should also be treated. If your pet goes outside frequently and can pick up ear mites again, consider regular use of a flea/tick medication that also controls ear mites.
Electrocardiography

- An electrocardiogram (ECG) is a test that helps to determine the heart’s rhythm and rate.
- Your veterinarian may need to combine ECG results with results of blood work, x-rays, and possibly cardiac ultrasound to get a clear idea of how your pet’s heart is functioning.
- An ECG is safe and noninvasive and takes only a few minutes to perform.

What Is Electrocardiography?

The body sends electrical impulses through the heart that stimulate heartbeats to occur at a consistent rhythm and rate. An electrocardiograph machine can detect and record electrical changes associated with the beating of the heart. Your veterinarian can interpret this information to determine your pet’s heart rhythm and rate. The process of using the electrocardiograph machine to assess heart rate and rhythm is called electrocardiography, and the result is an electrocardiogram (ECG).

The ECG can tell your veterinarian if your pet’s heart is beating too slowly or too quickly. It can also tell if the rhythm is abnormal (a condition called an arrhythmia) or if there is any type of delay in conduction (transmission) of the electrical impulses through the heart. A delay can be associated with problems such as thickened heart chambers or heart enlargement. However, the ECG is not generally used to evaluate the function of heart valves or to check the heart muscle for normal contractility (ability to contract). In many cases, your veterinarian will combine ECG results with results of blood work, x-rays, and possibly cardiac ultrasound to get a clear idea of how your pet’s heart is functioning. All of these tests can be performed as part of a cardiac examination.

How Is Electrocardiography Performed?

Electrocardiography generally takes only a few minutes and is not painful for your pet. Sedation is not required. Pets are generally encouraged to lie on their side during the procedure, but it can also be done if the pet is standing.

The heart's electrical impulses are recorded by attaching small electrodes to your pet’s limbs and chest. The ECG machine records these impulses as wavy lines onto a strip of ECG paper, which your veterinarian examines to determine the test results.

The electrical impulses associated with a normal heartbeat create a specific pattern on the ECG paper, and a normal heart rhythm creates a specific amount of space between each pattern. The pattern of an abnormal heartbeat or irregular heart rate looks different. Your veterinarian will interpret all of this information to determine if the ECG results are normal.

What Are the Benefits of Performing Electrocardiography?

An ECG is safe and noninvasive and takes only a few minutes to perform. An ECG shows the heart's electrical activity and identifies arrhythmias or alterations in heart rate. An ECG is useful
for determining if an animal has heart disease. The information provided by an ECG helps your veterinarian make appropriate treatment recommendations for your pet.
Endocarditis

- Endocarditis is an infection of the heart valves and/or inside lining of the heart.
- The disease is more common in dogs than cats and usually affects male dogs.
- Endocarditis occurs when bacteria from another location in the body travel through the blood to the heart.
- Signs of endocarditis include coughing, difficulty breathing, getting tired quickly, and fainting episodes.
- Diagnosis may require blood tests, radiographs (x-rays), electrocardiograms (ECGs), and an echocardiogram (an ultrasonic examination of the heart).
- Treatment includes antibiotics and medications for heart failure.

What Is Endocarditis?

Endocarditis is the infection of the heart valves and/or inside lining of the heart. In most cases, the infection involves bacteria, but a fungus may also be responsible. The disease typically occurs in dogs, especially mid-size to larger breeds, and is rare in cats. Male dogs are most commonly affected.

What Causes This Condition?

Endocarditis is often initiated by a bacterial infection somewhere else in the body, such as the mouth, urinary tract, prostate, lungs, or bones. Bacteria from these locations can spread to the bloodstream. When the bacteria-filled blood flows through the heart, the heart valves can become infected.

In addition to bacteria, platelets and fibrin (substances responsible for clotting) build up on the valves, forming clumps known as vegetations. These vegetations eventually interfere with heart valve function, often leading to heart failure. The left side of the heart, which receives blood from the lungs, is most often infected, resulting in lung congestion.

Fragments of the vegetations can also break loose and travel through the blood to other parts of the body. These fragments can act like a clot and deprive tissues of oxygen, or cause infections in other locations, such as the joints, nervous system, and urinary tract.

What Are the Signs of Endocarditis?

The signs of endocarditis are usually associated with left-sided heart failure and lung congestion. These signs may include coughing, difficulty breathing, getting tired quickly, and fainting episodes. Other signs are more general or may be associated with clots or infections in other parts of the body. These signs include:

- Lethargy or weakness
- Weight loss
- Loss of appetite
- Fever
- Limping or lameness

**How Is This Disease Diagnosed?**

Diagnosis is often difficult and may require several tests and procedures. Blood tests are usually performed to check for signs of infection and to determine if other organs are infected. The veterinarian will usually want to take several blood samples over a 24-hour period to be tested. The tests determine the exact bacteria involved and the most effective antibiotics to use against them.

Other procedures may include radiographs (x-rays) to assess the heart, as well as ECGs (electrocardiograms) to evaluate heart rhythm and function. An echocardiogram, which is a heart exam with an ultrasound machine, is often useful to help the veterinarian visualize the heart valves and identify vegetations.

**How Is Endocarditis Treated?**

Treatment usually involves antibiotics for a number of weeks. If the pet has heart failure, additional medications may be necessary to help the heart function properly and to relieve congestion in the lungs. Follow-up examinations are important to determine the effectiveness of treatment and to ensure that your pet is comfortable. Early diagnosis and treatment offers the best prognosis.
Endoscopy

- Endoscopy is a procedure that allows your veterinarian to look inside your pet’s body without surgery.
- A flexible or rigid scope with a camera attached is inserted into a body cavity to view internal organs and the interior of joints.
- Endoscopy can be used to diagnose and treat problems.
- General anesthesia is required.
- Endoscopy is a minimally invasive procedure.

What Is It?

Endoscopy is a procedure for looking inside your pet’s body using a flexible or rigid scope with camera and magnification capabilities. Endoscopy allows your veterinarian to see within a body cavity and examine the surface of organs, such as the liver or kidneys, or to see the structure of various joints, such as the knee.

How It Works

The endoscope is inserted through a body orifice (mouth, nose, anus) or a small incision in the abdomen, chest wall, or joint surface. The incision generally requires only a suture or two to close. The procedure is performed while your pet is under general anesthesia.

What Is It Used For?

Endoscopy provides your veterinarian with a full-color, magnified view of the area of interest. Direct visualization and biopsy can be useful in determining the cause of a problem and establishing a diagnosis. Endoscopy is also used for the following:

- Identifying and sometimes removing foreign bodies (objects)
- Performing minimally invasive biopsies and surgeries
- Visualizing strictures (abnormal narrowing of a passage), lesions (tissue damage), or masses
- Examining the interior of joints
- Helping to place a feeding tube

Types of Endoscopic Procedures

Endoscopy procedures are named after the organ or area they are intended to explore:

- **Gastroscopy**—Evaluation of organs that make up the gastrointestinal system
- **Laparoscopy**—Evaluation of organs of the abdominal cavity, including the kidneys, liver, and pancreas
- **Thoracoscopy**—Evaluation of the chest, or thoracic, cavity, which includes areas around the heart and lungs
- **Rhinoscopy**—Evaluation of the nasal passages and the back of the throat
- **Cytoscopy**—Evaluation of the urethra, bladder, and related structures; cytoscopy is useful for diagnosing many urinary tract disorders, such as bladder stones, cancer, infection, and congenital (existing since birth) abnormalities
- **Arthroscopy**—Evaluation of joints
- **Bronchoscopy**—Evaluation of the windpipe and large airways inside the lungs

**Benefits of Endoscopy**

Endoscopy allows minimally invasive diagnosis and treatment of many problems. It can help avoid more complicated surgery and reduce the amount of pain and recovery time. Patients are often discharged from the hospital within hours of undergoing the procedure. Endoscopic images can be captured and replayed on video, allowing veterinarians to not only review evaluations but also share images with owners to explain diagnostic or therapeutic options. Certain results, such as the presence of a foreign body (due to eating a non-food item such as plastic, rocks, or clothing), are available immediately.

**Foreign body (object) ingestion is a common problem in pets, particularly among puppies and kittens. The ability to identify and potentially remove foreign bodies without major surgery is a key benefit of endoscopy.**
Examination and Rabies Vaccine

- Regular examinations are essential to maintaining your pet’s health.
- A thorough physical examination checks every major body system.
- Periodic vaccine risk assessments help ensure that your pet is properly immunized against infectious diseases.
- Rabies is a deadly disease that is generally fatal in all species. Vaccination against rabies is required by law in most states.

Why Are Annual Examinations Important?

Regular physical examinations are essential to maintaining your pet’s health. A thorough examination checks every major body organ and system.

- **Eyes**—The eyes will be checked for redness, cloudiness, or discharge.
- **Ears**—Many pets suffer from ear infections. Your veterinarian will examine your pet’s ear canals for possible signs of an ear problem: debris, waxy buildup, or trauma caused by scratching.
- **Mouth**—Your veterinarian will look in your pet’s mouth for signs of dental disease and for broken or missing teeth. If he or she sees any problems, your veterinarian may recommend a thorough dental examination and cleaning for your pet.
- **Respiratory system**—Your veterinarian will listen to your pet’s heart and lungs.
- **Digestive system**—Your veterinarian will “palpate” (feel) your pet’s abdomen for signs of discomfort and to check that the major organs are the right size and shape.
- **Musculoskeletal system**—Your veterinarian will palpate all your pet’s major muscles and bones to check for signs of weakness or pain.
- **Skin and haircoat**—Your veterinarian will check of all your pet’s “lumps and bumps.” If anything suspicious is found, a biopsy or lump removal may be recommended.
- **Laboratory tests**—During a routine examination, your veterinarian may also want to take samples of your pet’s blood, urine, and feces to obtain additional information about your pet’s health or to ensure that specific body systems are functioning properly.

During your pet’s examination, your veterinarian will also ask you many questions about your pet’s behavior, lifestyle, and health history since your last visit. The answers to these questions will help your veterinarian determine what preventive care recommendations he or she should make in order to help keep your pet healthy. Based on your pet’s age, lifestyle, and disease risk, your veterinarian will recommend vaccinations for your pet. In virtually every state, vaccination against rabies is required by law.

What Is Rabies?

Rabies is a deadly disease caused by a virus that attacks the central nervous system. All warm-blooded animals, including wild animals, dogs, cats, and humans, can get rabies. Once clinical signs appear, rabies is generally fatal. However, the disease is also generally preventable through vaccination.
Rabies remains prevalent in wildlife populations—primarily raccoons, bats, foxes, and skunks. Pets are at risk of contracting the disease from wild animals and potentially transmitting it to humans.

The virus can have an incubation period lasting from days to months. Rabies is usually transmitted through contact with the saliva of an infected animal; most pets and people become infected through a bite wound. An animal’s saliva becomes infective once the virus has traveled through the animal’s nervous system from the initial bite site to reach the brain and, ultimately, the salivary glands. Once the virus enters the salivary glands, the animal can pass the infection to other animals or humans through its saliva. Animals with rabies are referred to as rabid.

**Prevention**

Because of the potentially serious human health implications, rabies vaccination of dogs is required by law in virtually all states, and many states also require cats to be vaccinated. Vaccination is the most effective way to prevent the disease in animals and, in doing so, to safeguard human health. Today’s rabies vaccines are very safe and effective.

Other forms of rabies prevention include:

- Keeping your pet away from wildlife.
- Ensuring that all other dogs or cats your pet comes in contact with are vaccinated.
- Minimizing contact with stray animals. Do not feed stray animals with unknown vaccination status or allow them to remain near your home and pets.

**Vaccination helps protect your pet from unnecessary euthanasia or extended quarantine if he or she has contact with a rabid animal. Any pet that bites a person and has an unknown or out-of-date vaccination status may be subject to quarantine or euthanasia, depending on state laws.**
Exercising Your Cat

- Regular exercise is important to your cat’s health because it burns calories, reduces appetite, maintains muscle tone, and increases metabolism (the rate at which calories are burned).
- You can help your cat become more active and stay fit by scheduling regular playtimes.
- Consult your veterinarian before beginning an exercise program for your cat.

Cats are notorious for preferring sleep to exercise. However, regular exercise is important to your cat’s health because it burns calories, reduces appetite, maintains muscle tone, and increases metabolism (the rate at which calories are burned). Here are some ideas to get your cat moving:

- Leave out tissue paper and empty cardboard boxes and paper bags to inspire play
- Provide fresh catnip
- Encourage your cat to chase toys, sticks with attached feathers, balls, or flashlight pointers (never point these at an animal’s or person’s eyes)
- Provide a cat tree to inspire climbing
- Provide scratching posts or pads
- Encourage play with other pets (set up play dates with the pets of friends or relatives; consider adopting another pet)
- Train your cat to do tricks for low-calorie or small treats (e.g., train your cat to run to you from across the house or climb a cat “tree” when you shake the treat container; reward your cat with just one treat)
- Provide specially designed activity toys that require your cat to do some work to remove a treat

You can help your cat become more active and stay fit by scheduling regular playtimes. Consult your veterinarian before beginning an exercise program for your cat.

Note: Choose cat toys carefully. Cats may try to eat string or small parts of toys, which can be dangerous to their health. Do not leave toys out for cats to play with unattended.
Explaining Pet Loss to Children

Our companion animals are often treasured members of the family, and we mourn for them when they die or are euthanized. It is important to recognize your feelings of loss and grief and to express them in your own way. In addition, when your child is attached to a pet that dies or is euthanized, it is important to recognize his or her feelings of loss and help your child express those feelings.

The Human–Animal Bond

The human–animal bond is increasingly recognized as a powerful and unique relationship. This bond offers much-needed comfort and companionship in our hectic lives, even improving our mood and blood pressure! When our beloved animals die or are euthanized, it is important to recognize our feelings of bereavement and to express them. Families often have a pet for a number of years, so children grow up with the pet as part of the family. Unfortunately, dogs and cats usually live for only 10 to 15 years and smaller animals usually live for fewer years, so a child may lose a few pets before reaching adulthood. Recognizing the importance of the pet in your child’s life and preparing your child for the loss are crucial to helping your child cope with grief.

What to Do

Children are often very attached to the family pet, so loss of a pet can be very traumatic for a child. Honesty is the best policy when explaining a pet’s death to your child, but you should use language appropriate for your child’s age. Your child wants to understand what happened, so use simple terms; however, do not say that the pet “was put to sleep” because your child may become afraid to sleep. Your child needs time to grieve and may want to memorialize the pet by making a scrapbook or having a memorial service. Talk with your veterinarian about obtaining your pet’s ashes and burying them (if your municipality permits this). Ask about other memorials that your veterinarian may offer, such as making a paw print for a keepsake that your child may treasure. To help your child focus on happy memories, share funny stories about your pet and frame a picture of your child with your pet.

Seek Assistance

Talk with your veterinarian about ways to help your child cope. It may be helpful for your veterinarian to talk with your child. It is important for parents to inform school officials that their child has lost a pet. If your child shows behavioral changes or signs of depression, your child may need to talk with a professional counselor.

Many veterinary schools offer a pet-loss support hotline and support groups for small animal owners experiencing the loss of a pet. Several good sources of information on pet loss are available, including Argus Institute (for families and veterinary medicine) at the College of Veterinary Medicine & Biomedical Sciences at Colorado State University (www.argusinstitute.colostate.edu).
What to Do If Your Child’s Pet Dies or Is Euthanized

- Honesty is the best policy when explaining a pet’s death to your child, but use language appropriate for your child’s age.
- Memorialize the pet by making a scrapbook or having a memorial service.
- Talk with your veterinarian about obtaining your pet’s ashes and burying them.
- Ask your veterinarian about memorials that he or she may offer, such as making a paw print as a keepsake for your child.
- To help your child focus on happy memories, share funny stories about your pet and frame a picture of your child with your pet.
Eye Discharge

- Some pets produce more tears than others, so increased wetness of the eye is not always a medical problem.
- Eye discharge becomes a problem when it is excessive, abnormal, or accompanied by other signs of a problem (such as squinting, rubbing, or sneezing).
- Depending on the cause of the eye discharge, drops or ointments applied directly to the eye are effective in many cases.

What Is Eye Discharge?

Eye discharge can refer to any type of fluid that comes from the eye. Most healthy pets have eyes that are clear, bright, and have minimal discharge. However, some types of eye discharge are completely normal. Each time your pet blinks, tears are released from tear ducts and bathe the surface of the eye to provide moisture and deliver oxygen and nutrients. Some pets produce more tears than others, so increased wetness of the eye is not always a medical problem. Some pets can also have crusty material at the corners of their eyes when they wake up. This is usually easy to clean with a damp tissue and is not considered a problem in most cases.

Tear staining occurs in some dogs and cats. Animal tears contain components that can cause brown staining of the fur around the eyes. In pets with light-colored fur, this discoloration can be more noticeable than in pets with darker fur. Tear staining is not generally considered a medical problem, but can sometimes be minimized by keeping the facial fur trimmed close and wiping the eyes daily with a damp tissue to remove excess material. If tear staining is excessive, ask your veterinarian about other management options.

When Is Eye Discharge a Problem?

Eye discharge becomes a problem when it is excessive, abnormal, or accompanied by other signs of a problem. A small amount of clear discharge can be considered normal, but excessive tearing or consistent watering should be investigated. Normally, tears produced around the eyes drain out of the nose, through the nasolacrimal ducts. Occasionally, these ducts can become blocked, causing the clear discharge to spill out onto the face.

Similarly, discharge that becomes thick or starts to look like mucus or pus can indicate an eye infection or other problem. Even if eye discharge does not seem excessive or abnormal, if it is accompanied by other clinical signs such as squinting, sneezing, or rubbing the eyes with a paw or against other objects (such as furniture or the floor) this can indicate an eye infection or other problem. Eye discharge can also occur with some systemic illnesses (illnesses that affect the entire body), such as an upper respiratory tract infection.

Dogs and cats that have short, flat noses or “pushed in” faces, like Persian cats and Pekingese dogs, sometimes have folds of skin on their faces (right under the eyes) that become moist and infected from being consistently wet from tears. Also, the hair on their faces sometimes brushes the surface of the eyes, scraping against the cornea (the clear covering of the surface of the eye) and causing irritation and increased eye discharge.
Dry eye is a condition in which tear production is too low to keep the surface of the eye moist. Instead of tears bathing the cornea with each blink, the inner eyelids scrape against the cornea, causing trauma and irritation. Pets with dry eye tend to develop a thick white or green discharge from the eyes in response to the cornea becoming excessively dry and irritated. These pets may also squint or rub their eyes because dry eye can be painful.

Irritating airborne substances can cause redness, excessive watering, and other problems with the eyes. Common airborne irritants include cigarette smoke, dust, dirt, pollen, and sprays/perfumes used around the home.

**How Is Eye Discharge Diagnosed?**

Medical history and physical examination findings can provide valuable information for your veterinarian. Medical history may include trying to determine how long the eye discharge has been present and whether any other signs of illness have been observed. Physical examination findings may reveal evidence of underlying illness.

If the pet is squinting because the eyes are painful, your veterinarian may begin the eye examination by applying a drop of liquid topical anesthetic directly to the eye. This is not painful, and after a few minutes it makes the surface of the eye numb so examination can proceed. During examination, your veterinarian will likely look for redness, puffiness, foreign bodies, wounds, or other changes that may explain the eye discharge.

While examining your pet’s eyes, your veterinarian may also perform tests to make sure your pet’s tear production is adequate, to check the cornea for scratches or other injuries, and to determine if the nasolacrimal ducts are blocked.

**How Is Eye Discharge Treated?**

If your pet has an infection or inflammation involving the eyes, drops or ointments applied directly to the eyes are effective in most cases. If tear production is inadequate (as with dry eye), long-term medication may be recommended to control the problem. If the nasolacrimal ducts are blocked, flushing them with sterile eyewash may help clear any obstructions.

Certain grooming practices, such as keeping the hair on the face trimmed closer, can help reduce tear staining and minimize contact of facial hair for dogs and cats that have flat faces.

If your pet does not tolerate dust, cigarette smoke, and other airborne irritants, your veterinarian can help you devise a plan for reducing these irritants around your home.
Fecal Analysis

- Fecal analysis helps your veterinarian determine if your pet has intestinal parasites.
- Only a small sample of your pet’s stool is required to perform a fecal analysis.
- Fecal analysis may be recommended if your pet develops diarrhea, weight loss, or vomiting; however, even pets that don’t seem ill can benefit from periodic fecal evaluations.

What Is a Fecal Analysis?

A fecal analysis is a test that examines your pet’s stool to detect intestinal parasites, including worms (hookworms, roundworms, whipworms) and other organisms (coccidia, Giardia). It can also detect other abnormalities, such as increased numbers of bacteria in the stool. If your pet develops diarrhea, vomiting, or weight loss (clinical signs frequently associated with parasites), your veterinarian may want to perform a fecal analysis to help determine if parasites are part of the problem. However, some pets have intestinal parasites without any obvious clinical signs, so your veterinarian may recommend performing a fecal analysis during your pet’s regular wellness examination visits.

How Is a Fecal Analysis Performed?

Your veterinarian may request that you bring in a fresh sample of your pet’s stool. The sample should be placed in a clean, labeled container or a leak-proof plastic bag. Your veterinarian can also obtain a fresh stool sample during a physical examination. To do this, your veterinarian may choose to use a fecal loop, which is a small plastic wand with a loop on the end. After applying lubricant, your veterinarian can gently insert the loop into your pet’s rectum and collect a sample of fecal material.

A fecal analysis begins with a visual examination of the stool sample to look for worms, blood, mucus, or foreign material such as grass, bone fragments, or other items the pet may have eaten. Your veterinarian will also examine the stool for abnormal color, consistency, or odor.

Some worms can be seen in the stool. For example, roundworms are long slender worms that look similar to spaghetti. Another worm that may be seen in the stool is a tapeworm. Adult tapeworms grow into a long, segmented parasites in the intestines. As they age, segments containing eggs break off and pass out in the stool. These segments look like pieces of rice and can sometimes be seen near the pet’s rear end or in the stool. Many other types of parasites are only visible by looking for them under a microscope. Parasite eggs, which are commonly shed in the stool of infected animals, are also visible under a microscope.

There are several tests that your veterinarian may perform as part of a fecal analysis:

- *Direct fecal smear*. In this test, a small amount of stool is placed on a microscope slide, mixed with a very small amount of water or saline, and examined under a microscope. Bacteria and some single-celled parasites can sometimes be identified using this method.
• **Fecal flotation**: In this test, a sample of stool is placed in a plastic container and mixed with a small amount of a special solution. Parasite eggs then float to the top of this solution. A clean microscope slide is placed on the rim of the container to collect the eggs, which your veterinarian can see under the microscope.

• **Fecal centrifugation**: This test is similar to fecal flotation, but the fecal material and special solution are mixed together in a test tube, which is then placed into a centrifuge. A centrifuge is a machine that spins the tube in a circle very rapidly. The spinning creates a force inside the tube that causes heavy material (such as fecal debris) to sink quickly to the bottom, and lighter material (such as parasite eggs) to float to the top. Your veterinarian then collects material from the top of the test tube and examines it under the microscope. Studies have shown that fecal centrifugation may permit the detection of more parasites than some other forms of fecal analysis.

• **Special testing**: If your veterinarian suspects that your pet is infected with *Giardia* or a specific type of bacteria, specific testing to detect these problems may be recommended.

**What Is a Fecal Analysis Used For?**

Fecal analysis is performed mainly to identify parasites. Sometimes, stool may be checked for dangerous bacteria, like salmonella, or for viral infections like parvovirus and coronavirus. These tests are usually only performed when the pet is suspected of having these diseases and are not routine.

**Benefits of Fecal Analysis**

Fecal analysis is most commonly used to help identify the eggs of parasites such as hookworms, whipworms, and roundworms. Because there is no single medication that can treat every possible parasite, accurate diagnosis is important so that the correct treatment can be given.

Some intestinal parasites, such as roundworms and hookworms, are zoonotic. This means that they can infect people. Periodically testing your pets for parasites is a good way to help protect your other family members.

Although some pets infected with intestinal parasites develop diarrhea or other clinical signs, many pets don’t show any signs at all. The only way to identify these pets and treat them for parasites is to test them periodically for evidence of infection. Fecal analysis is a good way to identify infected pets.
**Fecal Centrifugation Testing**

- Intestinal parasites can cause serious illness and even death in pets.
- Some parasites are zoonotic, which means humans can become infected.
- Fecal centrifugation testing can identify intestinal parasites, which is important for determining the best treatment and helping to ensure a full recovery.
- Even pets receiving parasite preventive medication need periodic parasite testing, because no single medication is effective against all parasites.

**What Is Fecal Centrifugation?**

Roundworms, hookworms, whipworms, and other intestinal parasites are relatively common in pets, but that doesn’t mean that they can’t cause serious illness. Young, sick, or debilitated pets can even die if they are heavily infected with parasites. If your pet has parasites, accurate diagnosis, including identification of the parasite(s) present, is important to determine the best treatment and help ensure a full recovery. Fecal diagnostic testing, such as fecal centrifugation, is an important part of this process.

**Why Does My Pet Need a Fecal Centrifugation Test?**

Parasites can cause clinical signs such as diarrhea, vomiting, and weight loss. If your pet is showing any suspicious signs, your veterinarian may recommend fecal centrifugation testing to determine if parasites are the cause. However, some pets don’t develop clinical signs, so periodic testing of healthy pets is also recommended. Your pet’s routine wellness examination is a convenient time to perform parasite testing. Even pets that regularly receive parasite preventive medication should be tested periodically, because there is no single medication that is effective against all parasites.

Any new pets (adult pets or puppies/kittens) that you would like to bring into your home should be tested for parasites before being introduced to your other pets. Many parasites are transmitted through contact with fecal material, so if your new pet has worms, he or she can infect your other pets. Even if your new pet seems perfectly healthy, you should schedule an examination with your veterinarian. Parasites, viruses, and other medical problems aren’t always apparent, so your veterinarian may recommend fecal centrifugation testing, along with some other diagnostic tests to help ensure that your new pet is healthy before being introduced to your other pets and family members.

Some intestinal parasites, such as roundworms and hookworms, are zoonotic. This means that humans can become infected. Periodically testing your pets for parasites is a good way to help protect your other family members from dangerous zoonotic parasites.

**How Is Fecal Centrifugation Performed?**

To test for intestinal parasites, your veterinarian needs a stool sample from your pet. Ask your veterinarian for a stool specimen container. Otherwise, a clean dry container or a plastic bag can also be used to hold the sample. A fresh sample is preferable to a sample that is more than a day...
old, and only a small amount (approximately a teaspoonful) is generally needed for testing. Also, if you have multiple cats sharing a litterbox, or multiple dogs using the same exercise area, many veterinarians will accept a representative sample from your household of pets.

If you aren’t comfortable collecting a specimen at home, your veterinarian can obtain a stool sample during an office visit. This can be performed during a routine rectal examination of your pet, or your veterinarian may choose to use a fecal loop. A fecal loop is a small plastic wand with a small loop on the end. After applying lubricant, your veterinarian can gently insert the loop into your pet’s rectum and collect a sample of fecal material.

To perform fecal centrifugation, your veterinarian places a small amount of fecal material into a test tube and mixes it with a special fecal flotation solution. The solution is formulated so that the eggs of many parasites (such as whipworms, hookworms, and roundworms) will float to the top of the solution. Your veterinarian then covers the top of the tube with a microscope coverslip and places the tube into a centrifuge, a machine that spins the tube in a circle very rapidly. The spinning creates a force inside the tube that causes heavy material (such as fecal debris) to sink quickly to the bottom and lighter material (such as parasite eggs) to float to the top. After a few minutes, your veterinarian collects the coverslip from the top of the tube, places it onto a microscope slide, and examines it under a microscope for identification of parasite eggs. Studies have shown that fecal centrifugation permits the detection of more parasite eggs than some other forms of fecal analysis.

Some veterinarians perform fecal centrifugation testing in the office, so results may be available the same day. Other practices send fecal material to an outside laboratory for centrifugation testing, so results may take a few days. Some veterinarians use other fecal diagnostic techniques (such as flotation or evaluation of fecal smears) to help diagnose parasites.

**What Are the Benefits of Fecal Centrifugation Testing?**

Fecal centrifugation testing for parasites helps identify zoonotic parasites that can pose a risk to children and other family members.

Although some pets infected with intestinal parasites develop diarrhea or other clinical signs, many pets don’t show any signs at all. The only way to identify infected pets and treat their parasites is to test them periodically for evidence of infection. Fecal centrifugation testing is a good way to identify infected pets.
Fecal Flotation and Giardia Test

- Intestinal parasites can cause serious illness and even death in pets.
- Some parasites are zoonotic, which means they can infect humans.
- Fecal flotation and Giardia testing can identify intestinal parasites, which is important for determining the best treatment and helping to ensure a full recovery.
- Even pets that are receiving regular parasite preventive medication need periodic parasite testing. No single medication is effective against all possible parasites.

What Are Fecal Flotation and Giardia Tests?

Roundworms, hookworms, whipworms, and microscopic intestinal parasites (like coccidia and Giardia) are relatively common in pets, but that doesn’t mean that they can’t cause serious illness. Young, sick, or debilitated pets can even die if they are heavily infected with parasites. If your pet has parasites, accurate diagnosis, including identification of the parasite(s) present, is important to determine the best treatment and help ensure a full recovery. Fecal diagnostic tests, such as fecal flotation and Giardia testing, are an important part of this process.

Why Does My Pet Need Fecal Flotation and Giardia Testing?

Parasites can cause clinical signs such as diarrhea, vomiting, and weight loss. If your pet is showing any suspicious signs, your veterinarian may recommend performing fecal flotation and Giardia testing to determine if parasites are the cause. However, some pets don’t develop clinical signs, so periodic testing of “healthy” pets is also recommended. Your pet’s routine wellness examination is a convenient time to perform parasite testing. Even pets that regularly receive parasite preventive medication (e.g., daily or monthly medication) should be tested periodically because no single medication is effective against all possible parasites.

Any new pets that are being introduced into your home (whether adult pets or puppies/kittens) should be tested for parasites before meeting your other pets. Many parasites are transmitted through contact with fecal material, so if your new pet has worms, he/she can infect your other pets. Even if your new pet seems perfectly healthy, you should schedule an examination with your veterinarian as soon as possible. Parasites, viruses, and other medical problems aren’t always apparent, so your veterinarian may recommend a fecal flotation and Giardia test, along with some other diagnostic tests, to help ensure that your new pet is healthy before playing with your other pets and family members.

Some intestinal parasites, such as roundworms and hookworms, are zoonotic. This means that they can infect humans. Periodically testing your pets for parasites is a good way to help protect your other family members.

How Are Fecal Flotation and Giardia Tests Performed?

To test for intestinal parasites, your veterinarian needs a stool sample from your pet. Ask your veterinarian for a stool specimen container. Otherwise, a clean, dry container or plastic bag can be used to hold the sample. A fresh sample is preferable to a sample that is more than a day old,
and only a small amount (approximately a teaspoonful) is generally needed for testing. Also, if you have multiple cats sharing a litterbox, or multiple dogs using the same exercise area, many veterinarians will accept a “representative” sample from your household of pets.

If you aren’t comfortable collecting a specimen at home, your veterinarian can obtain a stool sample during an office visit, either during a routine rectal examination of your pet or with a device called a **fecal loop**. A fecal loop is a small plastic wand with a small loop on the end. After applying lubricant, your veterinarian can gently insert the loop into your pet’s rectum and collect a sample of fecal material.

To perform a fecal flotation, your veterinarian places a small amount of fecal material into a small container and mixes it with a special solution. This solution is made so that the eggs of many parasites (such as whipworms, hookworms, and roundworms) will float to the top. Your veterinarian then covers the top of the container with a microscope cover slip and allows it to sit for a few minutes. During this time, the parasite eggs float to the top of the solution and stick to the cover slip. After a few minutes, your veterinarian collects the cover slip from the top of the tube, places it on a microscope slide, and examines it under a microscope to find and identify the eggs.

*Giardia* organisms can sometimes be identified using fecal flotation, but some veterinarians prefer to use a different test, called a SNAP test, to screen for *Giardia*. The SNAP test detects *Giardia antigens* (proteins produced by the parasite) in the fecal material of infected pets.

Some veterinarians perform fecal testing in the office, so results may be available the same day. Other practices use an outside laboratory for diagnostic testing, so results may take a few days. Some veterinarians use other diagnostic techniques (such as centrifugation or evaluation of fecal smears) to help identify parasites.

**What Are the Benefits of Fecal Flotation and *Giardia* Testing?**

Testing for parasites helps identify zoonotic parasites that can pose a risk to children and other family members.

Although some pets infected with intestinal parasites develop diarrhea or other clinical signs, many pets don’t show any signs at all. The only way to identify and treat infected pets is to test them periodically for evidence of infection. Fecal flotation and *Giardia* testing are helpful for identifying infected pets.
**Fecal Smear**

- A fecal smear is a thin layer of feces that is examined under a microscope.
- The smear is usually performed in combination with other tests to identify possible causes of diarrhea.
- Ideally, the sample should be examined within 30 minutes of collection.
- Fecal smears are generally used to identify *Giardia*, a protozoan parasite that causes diarrhea.
- Fecal smears are used to examine fecal cytology—the cells within a fecal sample.
- Identifying organisms in a fecal smear can help your veterinarian determine the most effective treatment for your pet’s diarrhea.

**What Is a Fecal Smear?**

A fecal smear (sometimes called a *direct fecal smear*) is a diagnostic test that helps identify possible causes of diarrhea in a cat or dog. It is generally conducted in combination with a fecal flotation test, which is used to screen for intestinal parasite eggs.

With a direct fecal smear, a thin film of feces is examined under a microscope for evidence of *Giardia*, a protozoan parasite that can cause diarrhea. A fecal smear can also be used to identify cellular abnormalities, bacterial or fungal organisms, and in some cases, parasite eggs.

**How Is the Test Performed?**

The key to a good fecal smear is to start with as fresh a sample as possible. Since *Giardia* is identified by observing the organism swimming across the slide, a direct fecal smear should be examined within 30 minutes of collection, before the organisms die or disappear.

If you are unable to obtain a fresh sample, your veterinarian can usually retrieve a specimen with a gloved finger or an instrument called a fecal loop. If you can’t bring your pet to the veterinarian right away, fecal samples should be stored in the refrigerator, but not frozen, until the sample can be delivered.

Once a sample is obtained, a direct fecal smear is made by spreading a thin film of feces on a glass slide and adding a few drops of saline. The slide is then examined under a microscope for evidence of microscopic organisms.

A fecal smear can also be used to examine fecal cytology—the cells contained in the specimen. In this case, the slide is stained with special dyes to facilitate visualization of cells, bacteria, and fungi. *Clostridium* and *Campylobacter* are two types of bacteria that often cause diarrhea. Occasionally, fungal organisms may be identified. Cell abnormalities may help detect infection, hemorrhage, and in some cases, cancer.

**What Are the Benefits of a Fecal Smear?**
A fecal smear is an important diagnostic tool that can help your veterinarian identify probable causes of diarrhea and determine the best treatment for your pet.

The amount of feces used for a fecal smear is small, so it may be necessary to repeat fecal smears to increase the likelihood of finding organisms such as *Giardia*. In some cases, a fecal smear result may be inconclusive. Your veterinarian may recommend a commercial test that may more effectively detect *Giardia* by identifying its proteins.

The information obtained from fecal smears, including fecal cytology, can help your veterinarian find the best solution to resolving your pet’s intestinal problem.
Feeding Your New Kitten

- Proper nutrition is especially important for kittens, which need two to three times as many calories and nutrients as adult cats.
- Cow’s milk should never be given to kittens or cats because it can give them diarrhea.
- Feed a name-brand kitten food with the American Association of Feed Control Officials (AAFCO) statement on the bag or label, starting when your kitten is 3 to 4 weeks old.

Proper nutrition is especially important for kittens, which need two to three times as many calories and nutrients as adult cats. A mother cat’s milk provides all of a kitten’s nutritional needs during the first 4 weeks of life. A newborn kitten may nurse every 1 to 2 hours.

If you find an orphaned kitten, ask your veterinarian or an animal welfare group to help you find a mother cat with a small litter because she may be able to nurse the kitten. If you cannot find a foster mother cat, ask your veterinarian to teach you how to bottle feed the kitten with a commercial milk replacer for kittens. Cow’s milk should never be given to kittens or cats because it can give them diarrhea.

At 3 to 4 weeks of age, give your kitten a commercial milk replacer for kittens and small amounts of moist, easily chewable, commercial kitten food in shallow bowls four to six times each day. Feed a name-brand kitten food with the American Association of Feed Control Officials (AAFCO) statement on the bag or label until your kitten is approximately 9 to 12 months old. You can warm the milk replacer and mix it with the kitten food. By 6 to 7 weeks of age, offer your kitten a dry commercial kitten food. At 8 to 10 weeks of age, most kittens are completely weaned from their mother’s milk. At 6 to 12 weeks of age, feed your kitten four times a day and gradually decrease the amount of milk replacer. At 3 to 6 months of age, feed your kitten commercial kitten food three times a day. When your kitten is 6 months of age, begin feeding him or her twice daily.

An average birth weight for kittens is about 3.5 ounces, depending on breed and litter size. During the first weeks of life, a healthy kitten’s body weight may double or triple. A kitten should gain 0.25 to 0.5 ounce daily until weaning (8 to 10 weeks of age).
Feline Anesthesia

- Anesthesia is useful for many procedures, including surgery, biopsies, x-rays, and dental exams and cleanings.
- Your veterinarian may select local anesthesia, injectable general anesthesia, or inhaled general anesthesia to keep your pet pain-free during surgical or diagnostic procedures.
- Your veterinarian is extensively trained in performing anesthesia and will take every possible precaution to help ensure that your pet awakens safely.

Anesthesia is defined as “the loss of ability to feel pain.” However, the term is more commonly used to refer to a state of deep sedation or unconsciousness during which the patient is unable to feel pain.

Two forms of anesthesia are used in cats. For some patients, local anesthesia is an option. This involves causing localized numbness by injecting medication into a focal area of the skin or applying a medication onto an area of the skin. The area affected can include the skin, underlying muscles, and nerves.

Medication used for local anesthesia does not cause the patient to fall asleep; when deep sedation or unconsciousness is required, general anesthesia is a better option. Medications used for general anesthesia commonly are administered by injection or inhaled through an anesthetic mask or breathing tube that is connected to an anesthesia machine.

When Is Anesthesia Used?

Anesthesia has many uses in cats. Local anesthesia may be an option if your veterinarian needs to remove a small growth on your cat’s skin, perform a biopsy of a growth or area of skin, use stitches to close a small cut or wound, or perform any type of minimally painful procedure during which unconsciousness is not required.

General anesthesia is used for more invasive surgeries and procedures that are likely to be very painful. Examples include repairing a broken bone or surgery involving the abdominal or chest cavities.

Surgery is not the only time anesthesia is recommended. Cats generally require anesthesia or very heavy sedation before dental cleanings, dental x-rays, or complete dental examinations. Anesthesia is sometimes used for taking x-rays of other areas of the body, especially if the patient is in pain and positioning for x-rays would result in more pain. General anesthesia also tends to cause muscle relaxation, which has additional advantages when x-rays are required.

Sometimes local anesthesia and general anesthesia are used together for the same procedure. For example, some veterinarians use general anesthesia to place the patient into a state of unconsciousness and then inject a local anesthetic agent into the skin and underlying tissues where surgery will be performed. The numbing effect of the local anesthetic can reduce the amount of pain the patient experiences when he or she wakes up from general anesthesia.
How Is Anesthesia Performed?

Pre-anesthetic Evaluation

Your veterinarian may recommend a pre-anesthetic evaluation before placing your pet under general anesthesia. This process is generally not necessary for local anesthesia. The pre-anesthetic evaluation may include a physical examination to ensure that your pet is healthy enough for anesthesia. Pre-anesthetic blood work may also be recommended to help identify medical problems that may increase the risks associated with surgery or anesthesia. Pre-anesthetic blood work can help identify medical conditions such as infection, anemia (a low number of red blood cells), low blood sugar, inadequate blood-clotting ability, liver disease, or kidney disease.

If your pet has any pre-existing medical issues, such as a heart problem, your veterinarian may recommend additional testing to determine if any precautions are recommended or if anesthesia should be postponed or cancelled due to health reasons.

Some practices perform the pre-anesthetic evaluation on the day of anesthesia. However, some veterinarians perform this testing a few days or weeks before the procedure is scheduled. This is a common practice before performing an elective surgical procedure such as a dental cleaning, spay surgery, or castration surgery.

Inducing and Maintaining General Anesthesia

The process of sedating a patient and preparing him or her for entering general anesthesia is called induction. Once induction is accomplished, the patient is maintained under general anesthesia until the procedure (surgery, x-rays, biopsy, dental cleaning, or other procedure) is complete and the patient is permitted to awaken.

Induction generally begins with administration of a sedative. This helps relax the patient so the rest of the induction activities can proceed. During this time, an intravenous catheter may be placed and administration of intravenous fluids initiated. Once the patient is relaxed, additional medications are given to “induce” a deeper level of sedation leading to general anesthesia. If injectable anesthetic medication is used, this medication is continued until the patient is permitted to wake up. If inhalant anesthesia is chosen, a breathing tube is inserted into the patient’s main airway (or sometimes an anesthetic mask is placed over the mouth and nose) and connected to a machine that delivers a carefully calculated mixture of oxygen and inhalant anesthetic. The patient inhales this mixture until the procedure is completed and the patient is permitted to awaken.

Both injectable and inhaled general anesthesia will safely keep your pet asleep and free from pain. Whichever method of anesthesia is chosen, your veterinarian will take every precaution to help ensure that your pet remains healthy and awakens safely from anesthesia. Veterinary nurses observe and monitor patients that are under general anesthesia. Additionally, monitoring equipment is generally used to constantly measure heart rate, breathing, oxygen usage, and blood pressure.
When the procedure is completed, the anesthetic agent is discontinued and the patient is monitored until he or she is fully awake and recovered from anesthesia.

**What Are The Benefits and Risks of Anesthesia?**

Keeping patients pain-free during surgery is an important goal of anesthesia, but there are many others. If a cat has an injury that is too painful to be examined with the patient awake, anesthesia may be the best way to facilitate a thorough examination. Additional procedures, such as placing a splint or cast on a broken leg, taking x-rays of a painful injury, or cleaning and dressing a serious wound can frequently be accomplished more efficiently if the patient is under anesthesia.

Many dental procedures, including dental cleaning, extracting an infected or broken tooth, taking dental x-rays, or performing dental restoration are generally not possible without anesthesia.

As with any medical procedure, anesthesia is not without its risks. Some patients may react negatively to the anesthetic medication, or experience fluctuations in heart rate, breathing, or blood pressure. Your veterinarian is extensively trained in performing anesthesia and your veterinary care team will take every possible precaution to help ensure that your pet awakens safely. Be sure to address any questions or concerns with your veterinarian.
Feline Arthritis

- Thinning of joint cartilage can lead to a vicious cycle of joint deterioration, reduced mobility, and pain.
- Supportive care is important, and treatment may include pain medication, NSAIDs, corticosteroids, supplements, massage, acupuncture, warm compresses, and/or surgery.
- Regular, moderate exercise may help delay feline arthritis.

What Is It?

Arthritis is a joint problem that can reduce mobility and cause pain. Arthritis can be caused by injury, infection, the body’s own immune system, or developmental problems. The most common form of arthritis is called **osteoarthritis** (*osteo* = bone; *arthr* = joint; *itis* = inflammation) or **degenerative joint disease**. Normally, joints form smooth connections between bones. Osteoarthritis involves thinning of joint cartilage (a protective cushioning between bones), buildup of fluid within the joint, and the formation of bony growths within the joint. Over time, this can lead to reduced joint mobility as well as pain.

Signs and Diagnosis

Signs of arthritis include the following:

- Stiffness after exercise
- Wasting away of muscle
- Limited movement
- Joint swelling
- Trouble getting up, laying down, walking, climbing stairs, or jumping
- A grating sound in a joint

Recognizing arthritis in cats can be difficult because the condition progresses slowly and cats don't complain about their aching joints. Also, some owners assume that signs of arthritis are “normal” in older animals.

Bringing your cat in for an annual checkup can help your veterinarian identify clinical signs early. Radiography (x-rays) can reveal bony growths and joint abnormalities.

Treatment

- Getting or keeping your cat slim can help by decreasing the load on his or her joints.
- Feeding your cat the right amount of high-quality food should help with weight control.
- Carefully monitored exercise on soft surfaces can help affected cats. Ask your veterinarian for more details.
- Because arthritis is aggravated by the cold and damp, keep your cat warm and dry. Padded cat beds can help.
- Warm compresses can soothe affected joints.
Massage can increase your cat’s flexibility, circulation, and sense of well-being. Professional animal massage therapists are available.

Pain medication, including nonsteroidal antiinflammatory drugs (commonly called NSAIDs), may help relieve signs. Never give your cat a drug without your veterinarian’s recommendation.

NSAIDs are commonly prescribed by veterinarians to reduce pain and inflammation associated with arthritis.

Corticosteroids can be used to suppress inflammation, but they are usually used for short periods.

Disease-modifying osteoarthritis drugs (DMOADs) can be an important part of managing osteoarthritis.

Glucosamine and chondroitin have been used to help manage arthritis in animals.

Acupuncture isn’t just for people. It’s painless and has shown some success in animals.

Surgery may be a good choice in advanced cases of feline arthritis. Your veterinarian can tell you more.

A low-stress environment, plenty of affection, and supportive care can help improve your cat’s quality of life.

**Aids for Arthritic Cats**

- Slip-free flooring
- Soft bedding
- Ramps (instead of steps)
- A warm, dry environment
- Help with grooming

**Prevention**

Regular, moderate exercise and a high-quality diet can help delay aging, manage body weight, and keep your cat’s musculoskeletal system in good shape. Ask your veterinarian to recommend an exercise program and a diet that are appropriate for your cat.

**Caution: Many human and canine pain relievers are poisonous to cats.**
Feline Asthma

- Feline asthma can be a life-threatening condition.
- Affected cats show signs of breathing difficulty, coughing, and wheezing.
- Long-term treatment is often necessary to control the clinical signs and promote easier breathing.

What Is Feline Asthma?

Feline asthma is a respiratory condition that involves constriction and inflammation of the airways in the lungs. Any cat can develop asthma. The underlying cause of asthma remains unknown, but allergens in the air have been implicated in some cases. When a cat develops asthma, mucus forms in the respiratory tract, and the airway walls swell and spasm. These changes can cause wheezing, coughing, and difficulty breathing. Without treatment, a severe asthma attack can even be fatal.

Signs of Feline Asthma

- Coughing
- Wheezing
- Lethargy (tiredness)
- Open-mouth breathing
- Difficulty breathing

Clinical signs of feline asthma can occur very quickly or more slowly over a period of days or weeks. Mild clinical signs may be limited to occasional coughing. Some cats also vomit or stop eating. A severe asthma attack can be associated with signs such as open-mouth breathing with the neck extended and exaggerated chest movements as the cat struggles to breathe. Severe asthma attacks are considered a medical emergency. If you suspect that your cat is having breathing problems, contact your veterinarian immediately.

The clinical signs associated with feline asthma can resemble those of other respiratory problems. For example, feline heartworm disease can cause asthma-like clinical signs known as HARD (heartworm-associated respiratory disease). Heart disease, bronchitis, and respiratory infections can cause clinical signs similar to those of feline asthma.

Diagnosis of Feline Asthma

No single test can diagnose feline asthma. Diagnosis often starts by evaluating your cat’s medical history for episodes of occasional coughing, wheezing, or abnormal breathing. Physical examination may reveal a cough when the throat is rubbed, wheezing over the trachea (a large airway in your cat’s neck), and abnormal sounds when your veterinarian listens to your cat’s lungs using a stethoscope. In some cases, wheezing and abnormal lung sounds can even be heard without using a stethoscope.
An x-ray of a cat with asthma may show an abnormal pattern in the lungs. However, in some cases, the x-rays appear normal.

Asthma can look similar to other respiratory diseases, such as heartworm infection, heart disease, and respiratory infection, so your veterinarian may recommend special tests to help rule out those conditions.

Treatment of Feline Asthma

There is no cure for feline asthma. Treatment focuses on administering medications that open up (or dilate) the airways, reduce inflammation, and promote easier breathing.

**Asthma attack:** If your cat is experiencing an asthma attack, contact your veterinarian immediately for treatment. Keeping your cat calm is very important during transport, as an excited cat may have even more difficulty breathing. When you arrive, your veterinarian will administer medications to help dilate your cat’s airways, reduce inflammation, and help your cat breathe easier. Oxygen therapy is also sometimes necessary. If your cat is having a serious asthma attack, your veterinarian may recommend hospitalization for continued treatment and observation.

**Maintenance treatment:** Cats that are diagnosed with asthma usually require long-term medical treatment. Medications are available to dilate the airways, reduce inflammation, and promote easier breathing. There is even a cat inhaler that can be used to relieve asthma attacks. After evaluating your cat, your veterinarian will recommend the best medications to control your cat’s asthma.

Although the underlying cause of asthma is often unknown, some veterinarians recommend trying to remove potential allergens like dust, aerosols, and smoke from the cat’s environment. A common source of dust can be cat litter. Fortunately, you can find low-dust brands of cat litter at many pet stores and retail outlets. In addition, using an air purifier that contains a HEPA filter may help to remove allergens from the air.
**Feline Bordetellosis**

- Feline bordetellosis is a contagious respiratory infection caused by the bacterium *Bordetella bronchiseptica*.
- Signs of this disease include sneezing, nasal and eye discharge, difficulty breathing, fever, enlarged lymph nodes and, less often, coughing.
- The bacterium is transmitted to cats through contact with infected cats, and sometimes dogs, or by exposure to secretions from the nose, throat, or eyes of infected animals.
- People, especially those with compromised immune systems, may be at risk for contracting the infection.
- Diagnosis is made by observing clinical signs or by culturing the throat, nose, or lungs of infected animals.
- Cats with bordetellosis are treated with antibiotics, and in cases of severe infection, may need to be hospitalized.
- A vaccine is available but is generally only used in cats at high risk for this infection.

**What Is Feline Bordetellosis?**

Feline bordetellosis is a contagious respiratory infection caused by the bacterium *Bordetella bronchiseptica*. While this bacterium may be the primary cause of the disease, it can also be secondary (related) to various viral infections. Cats of all ages may contract this disease, although it typically occurs in younger cats.

**What Are the Signs of Feline Bordetellosis?**

Signs of feline bordetellosis can range from mild to severe. Infected cats may experience sneezing, nasal and eye discharge, loss of appetite, fever, and enlarged lymph nodes. If the bacterium invades the lungs, cats can show more severe signs, such as difficulty breathing and coughing. In some cases, infection may lead to death.

**How Is the Infection Transmitted?**

The infection is spread primarily through direct contact with an infected animal. Exposure to secretions from the nose, throat, or eyes of an infected animal may also result in infection. Dogs harboring *B. bronchiseptica* infection, also known as *kennel cough*, may transmit the infection to cats as well. It’s also possible for people, especially those with compromised immune systems, to contract the infection from animals in the household.

**How Is the Disease Diagnosed?**

Respiratory infections may be diagnosed based on associated clinical signs. In some cases, the veterinarian may recommend that samples from the throat, nose, or lungs be submitted for culture (testing for bacteria) to determine the exact cause and most effective treatment.

**How Is the Disease Treated?**
In cats with mild respiratory signs, the infection may be self-limiting, meaning that it may resolve on its own. Other cats are typically treated with an oral antibiotic, such as a tetracycline. In some cases, cats may require hospitalization. All cats with respiratory infections should be isolated from other animals and susceptible people to prevent further transmission of the disease.

**Can the Disease Be Prevented?**

A vaccine to help prevent feline bordetellosis is available and may be given to kittens aged 1 month or older. However, it is generally only used for cats and kittens with prior exposure to shelters, boarding facilities, or breeding sites where the potential for infection is high or to prevent infection when the pet will be exposed to other cats at groomers, boarding facilities, or cat shows.
Feline Calicivirus

- Along with the rhinotracheitis virus, feline calicivirus (FCV) is responsible for most feline upper respiratory infections.
- Cats that go outside or spend time around other cats are at increased risk for exposure to FCV infection.
- Vaccination can protect cats from disease associated with FCV.

What Is Calicivirus?

Feline upper airway infections, sometimes called upper respiratory infections, are very common. They resemble the common cold in people and are characterized by clinical signs such as sneezing, wheezing, and discharge from the eyes and nose. Along with the rhinotracheitis virus, feline calicivirus (FCV) is responsible for most feline upper respiratory infections.

Calicivirus is highly contagious among cats but is not contagious to humans. There are several types of FCV, and the severity of illness they cause can vary.

How Do Cats Become Infected With Calicivirus?

Calicivirus is spread among cats through respiratory secretions (mucus and droplets from the nose and mouth) and discharge from the eyes. Most commonly, infection is spread by direct contact with an infected cat that is sneezing. However, FCV can live in the environment for weeks, and contaminated food and water bowls, litterboxes, and other items can help spread the virus. Fortunately, FCV can be killed by cleaning contaminated areas with a dilute bleach solution.

Some cats that recover from FCV become carriers of the virus. This means they can infect other cats even though they don’t appear to be sick themselves.

Because FCV is highly contagious, easily spread, and has a carrier state, it can be difficult to eliminate from a multicat household or from a group of cats that goes outside and can be exposed to other cats.

What Are the Signs of Calicivirus?

The most common clinical signs of FCV are associated with the upper respiratory infection that the virus tends to cause. However, young or very sick cats can develop more serious complications. Clinical signs include the following:

- Ulcers in the mouth and on the tongue
- Gingivitis (inflammation of the gums)
- Sneezing and congestion
- Open-mouthed breathing
- Lethargy (tiredness)
- Red, runny eyes
- Runny nose
- Loss of appetite

In some cases, the respiratory infection associated with FCV can progress to severe pneumonia. Also, FCV-associated mouth and tongue ulcers are very painful, causing some cats to refuse to eat or drink.

One type of FCV, called **virulent systemic calicivirus** (VS-FCV), causes more serious clinical signs and can cause death in more than 30% of infected cats. Clinical signs associated with VS-FCV include those of other FCV strains, with the addition of more severe complications:

- Fever
- Edema (fluid accumulation under the skin) of the face and legs
- Ulcers, sores, and hair loss on the face and feet
- Difficulty breathing
- Vomiting and diarrhea
- Limping

VS-FCV was first reported in the late 1990s and occurred as outbreaks at animal shelters and catteries. Fortunately, the virus does not seem to be spreading to the general cat population.

**How Is Calicivirus Diagnosed and Treated?**

Sophisticated testing of body fluids can be used to diagnose FCV infection, but most veterinarians make the diagnosis based on clinical signs. No medication can cure FCV. Treatment is mainly supportive and consists of administering fluids to combat dehydration, offering soft food until mouth ulcers heal, administering antibiotics to help treat secondary bacterial infections, and prescribing other medications as needed to help control other clinical signs.

**How Can Calicivirus Be Prevented?**

Several vaccines are available for preventing disease associated with FCV. There is also a vaccine against VS-FCV. All of the available FCV vaccines have been tested and found to be safe and effective when administered as directed.

The FCV vaccination is recommended for all cats. Kittens are generally vaccinated around 8 to 9 weeks of age (depending on vaccine label recommendations). Booster vaccinations are given 3 to 4 weeks later, followed by additional boosters every 1 to 3 years.

Cats that go outdoors, live with other cats, or visit grooming or boarding facilities are at greater risk for exposure to FCV compared with cats that stay indoors and have limited contact with other cats.

Keeping the environment clean can help prevent the spread of FCV. Be sure to wash your hands after handling an infected cat. Similarly, bowls, blankets, towels, toys, litterboxes, and other
items should be cleaned with a dilute bleach solution (if possible) to reduce the risk of further disease spread. Keeping sick cats separated from healthy cats can reduce the likelihood of spreading FCV.

Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. Any problems or signs of illness should be reported to your veterinarian before introducing the new cat to your other pets.

If your cat is known or suspected to be infected with FCV, contact your veterinarian promptly to discuss how you can protect your other pets.
Feline Chlamydiosis Vaccine

- Feline chlamydiosis is contagious among cats and tends to be spread through direct contact with infected cats.
- Vaccinating cats against feline chlamydiosis reduces the severity of clinical signs in infected cats.
- Separating sick cats from healthy ones and keeping the environment clean are good methods for preventing disease spread.

What Is Feline Chlamydiosis?

Feline chlamydiosis (also called *feline pneumonitis*) is caused by the bacterial organism *Chlamydophila felis* (*C. felis*). The *C. felis* organism does not live for very long in the environment, so infection is generally spread through direct or close contact with a sick cat. Because infected cats sometimes sneeze, contact with these droplets can also spread the infection.

Signs of Feline Chlamydiosis

The primary clinical sign associated with feline chlamydiosis infection is conjunctivitis (inflammation of the inner eyelids and associated tissues). When conjunctivitis occurs, the eyes can become bloodshot and often develop a discharge. The discharge may be watery or thicker, resembling mucus. One or both eyes may be affected. Sometimes an infected cat may squint or rub its eyes. The severity of infection can vary, so other clinical signs, such as fever and sneezing, may also be observed.

Because feline chlamydiosis can occur along with other organisms that cause a feline respiratory infection (commonly called a feline *cold*), clinical signs associated with the other organisms can also be observed. These can include a runny nose, lethargy (tiredness), coughing, and a more severe respiratory infection that can progress to pneumonia.

Diagnosis and Treatment

Diagnosis of feline chlamydiosis is generally made based on clinical signs and a history of exposure to the organism. When a definite diagnosis is required, the organism can be identified through bacterial culture testing of discharge from the eyes.

Treatment generally consists of administering antibiotics, which may be given by mouth or injection, applied as ointment or drops to the eyes, or given in a combination of these treatment methods. Depending on the severity of infection, many cats begin to improve within the first few days of treatment.

Following recovery, some cats can become chronically infected with the disease. For these cats, the clinical signs may return later in life and may require additional treatment.

Vaccination and Prevention
Several feline chlamydiosis vaccines are available, all of which have been tested and found to be safe and effective when administered as directed.

Kittens are generally vaccinated around 8 to 9 weeks of age according to the vaccine label directions. A booster vaccination is given 3 to 4 weeks later, followed by yearly boosters. Vaccination reduces the severity of clinical signs in an infected cat but does not prevent infection or shedding of the organism into the environment.

The feline chlamydiosis vaccine is not a required vaccine for all cats. Vaccination should be based on risk for exposure to the *C. felis* organism. Cats that go outside, live with other cats, or visit grooming or boarding facilities are at greater risk for exposure than cats that stay indoors and have limited contact with other cats. Ask your veterinarian if the feline chlamydiosis vaccination is recommended for your cat.

Feline chlamydiosis is contagious to other cats, but it is not generally considered contagious to humans. However, people who may have a compromised (weakened) immune system should notify their physician if their cat is diagnosed with feline chlamydiosis.

Routine household disinfectants and detergents kill the *C. felis* organism, so keeping the environment clean is a good way to reduce the risk of disease spread. Also, keeping sick cats separated from healthy cats can reduce the likelihood of transmission. Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. During that time, the new cat should be monitored closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.
Feline Diabetes Mellitus

- Most diabetic cats have diabetes mellitus type 2, meaning the body’s cells develop a “resistance” to insulin; sometimes the body fails to make enough insulin to serve its needs (diabetes mellitus type 1).
- After treatment for diabetes is started, periodic blood and urine testing may be recommended to help ensure that the current treatment (including insulin dosage) is adequate.
- Many cats live active, happy lives once their diabetes is well regulated. Some cats go into “remission” and no longer require insulin, whereas other cats need insulin for the rest of their lives.

What Is Diabetes?

Diabetes mellitus is an illness caused by the body’s inability to either make or use insulin, which is a hormone produced and released by specialized cells in the pancreas. Insulin permits the body’s cells to take sugar (glucose) from the blood and use it for their metabolism and other functions. Diabetes mellitus develops when the pancreas doesn’t make enough insulin or when the body’s cells are unable to use available insulin to take glucose from the blood.

Type 1 diabetes (referred to as “insulin dependent” diabetes) occurs when the pancreas doesn’t make enough insulin. Type 2 diabetes, also referred to as “relative insulin deficiency,” occurs when the body’s cells develop “insulin resistance,” meaning that they are unable to effectively use available insulin, or when the pancreas is producing some insulin, but not enough to serve the body’s needs. Most diabetic cats have type 2 diabetes. However, many of them still require insulin for adequate control of their illness.

What Are the Clinical Signs of Diabetes in Cats?

Diabetes can exist for a while before it begins to make an animal obviously ill. Clinical signs may vary depending on the stage of disease, but they can include the following:

- Increased drinking and urination
- Urinating outside of the litterbox
- Weight loss
- Vomiting
- Dehydration
- Lethargy (tiredness)
- Increase or decrease in appetite

How Is Diabetes Diagnosed?

Your veterinarian may suspect that your cat has diabetes if any suspicious clinical signs, such as increased drinking, have been observed at home. After performing a thorough physical examination, your veterinarian may recommend some of these tests to help confirm a diagnosis:
• **CBC (complete blood count) and chemistry profile**: When a pet is ill, these tests are commonly performed together during initial blood testing to provide information about the pet’s organ systems. The CBC and chemistry profile may show dehydration, an elevated blood sugar level, or other changes that can occur with diabetes.

• **Urinalysis**: Evaluation of a urine sample may show the presence of sugar (glucose) in the urine if a cat has diabetes.

• **Fructosamine**: Fructosamine is a protein in the blood that binds very securely to glucose. The fructosamine level is therefore a close estimation of the blood glucose level, but it is less likely to change due to stress and other factors that change the blood glucose level. Additionally, the fructosamine level indicates where the blood sugar levels have been during the previous 2 to 3 weeks. In a cat with diabetes, the blood sugar levels are likely high for long periods of time, which would be reflected by an increased fructosamine level.

**How Is Diabetes Treated?**

Because many cats have type 2 diabetes, insulin injections may not be required in all cases. Your veterinarian may first recommend dietary changes, weight loss and/or medication to control your cat’s diabetes. If this therapy is not successful, insulin injections are generally recommended to control the condition.

It is very helpful to write a medication schedule for your cat on the calendar, including the date and time that any medications, including insulin, need to be administered to maintain accurate records. This will help you avoid forgetting to give a dose of insulin to your cat and aid in tracking your cat’s treatment.

After treatment begins, periodic blood and urine tests are generally recommended. This helps ensure that the current treatment (including insulin dosage) is right for your cat. Your cat’s weight, appetite, drinking and urination, and attitude at home can all provide useful information that helps determine if diabetes is being well managed. Your veterinarian will consider all of these factors when making recommendations for continued management.

Many cats live active, happy lives once their diabetes is well regulated. Some cats even go into “remission,” meaning that they no longer require insulin. For other cats, insulin therapy must continue for the rest of their life.

**Can Diabetes Be Prevented?**

Certain medical conditions, such as being overweight or obese, can lead to insulin resistance and increase the risk of a cat developing diabetes. Keeping your cat’s weight within a healthy range can reduce the risk of diabetes. However, not all cases of diabetes are preventable. Scheduling regular checkups and wellness screening with your veterinarian can increase the chances of diagnosing diabetes early and initiating treatment as soon as possible.

Ask your veterinarian what steps you can take to keep your cat healthy and reduce the risk of diabetes.
Feline Distemper and Feline Leukemia

- Feline distemper and feline leukemia are serious infections that can be fatal.
- Cats that go outside are at increased risk for exposure to feline distemper and feline leukemia.
- Vaccination can protect cats from disease associated with feline distemper and feline leukemia.

What Are Feline Distemper and Feline Leukemia?

*Feline distemper* is the common name for the feline panleukopenia virus (FPV), also called *feline parvovirus*. Despite the name *feline distemper*, this contagious disease does not affect a cat’s temperament. Rather, FPV causes serious disease in infected cats and can be fatal.

Feline leukemia virus (FeLV) is also contagious among cats. Unlike many other viruses that enter specific cells in the body and destroy them, FeLV enters certain cells in a cat’s body and changes the cells’ genetic characteristics. This permits FeLV to continue reproducing within the cat each time infected cells divide. This allows FeLV to become dormant (inactive) in some cats, making disease transmission and prognosis (outlook) difficult to predict.

How Do Cats Become Infected With Feline Distemper and Feline Leukemia?

Once a cat is infected with FPV, it may shed virus in body fluids (most notably urine and feces) for a few days or up to 6 weeks. If another cat encounters an infected cat (or its body fluids) during this time, transmission is likely. However, FPV can also live in the environment, such as contaminated bedding and other items, for up to 2 years, so contact with contaminated objects can also spread the infection.

FeLV is generally transmitted when a cat comes into contact with saliva from an infected cat. Certain “social” behaviors, such as mutual grooming and sharing food or water bowls, can spread the disease. Kittens can become infected during fetal development or during the first days of life as their mothers nurse and care for them.

Unlike FPV, FeLV does not live for very long in the environment, so a cat must have contact with an infected cat for the disease to spread. However, predicting which cats can transmit the disease is complicated because some cats that are contagious don’t develop signs of infection.

Signs of Feline Distemper and Feline Leukemia

Feline distemper attacks the intestinal tract and the immune system, greatly reducing the number of white blood cells in the circulation. Your cat’s body needs white blood cells to help fight infection, so cats with FPV tend to develop severe infections involving the intestines. These infections can quickly overwhelm the body’s defenses, causing death. Other clinical signs can include the following:

- Fever
- Vomiting
- Lethargy (tiredness)
- Dehydration
- Diarrhea

Some cats become suddenly ill from FPV and die within hours of showing clinical signs. For many other cats, clinical signs become progressively worse over a period of days. Kittens infected before birth or during the first few days of life can develop severe brain and nerve damage, resulting in permanent difficulty standing or walking if the kitten survives the infection.

Some cats infected with FeLV do not develop clinical signs or long-term complications associated with the virus. The immune system of some cats can eliminate the infection before the cat becomes sick. In other cats, the virus can “hide” in the bone marrow, where it is difficult to detect until it begins to cause problems later in life. Other cats become carriers of the disease or experience various illnesses before eventually dying of FeLV-associated complications.

Because FeLV can affect almost any organ system in the body, clinical signs can vary significantly. Signs of FeLV can include the following:

- Fever
- Lethargy (tiredness)
- Leukemia (a low number of white blood cells)
- Anemia (a low number of red blood cells)
- Chronic respiratory infections
- Chronic dental and gum infections
- Cancer of the lymphatic system (and other cancers)

**Diagnosis and Treatment**

Sophisticated testing of blood and body fluids can be used to diagnose FPV infection, but many veterinarians make the diagnosis based on clinical signs and the presence of a severely low white blood cell count. Treatment is mainly supportive and consists of administering fluids to combat dehydration, antibiotics to help treat infections, and other medications to help control vomiting and other clinical signs.

Diagnosis of FeLV infection is more complicated because there are several stages of disease and not every cat handles FeLV infection the same way. Blood tests detect the disease in many cats, but for other cats, the bone marrow must be examined to confirm infection. Some cats may test positive on blood tests when they are young kittens but test negative later if their immune system has been able to eliminate the infection. Similarly, some cats may test negative at one point and test positive later, as the virus progresses through various stages in the body. Because FeLV infection can have many clinical presentations, your veterinarian may want to test your cat if he or she seems to be ill—especially if a fever is present. Some cats need to have multiple tests done to confirm infection.
No medication can eliminate FeLV. Most treatments are aimed at managing the clinical signs and complications.

**Vaccination and Prevention**

Several vaccines are available for preventing disease associated with FPV and FeLV. Most of the available FPV vaccines are combination vaccines that also protect against feline herpesvirus (rhinotracheitis) and calicivirus; some also protect against FeLV. All of the available FPV and FeLV vaccines have been tested and found to be safe and effective when administered as directed.

Kittens are generally vaccinated against FPV and FeLV around 8 to 9 weeks of age. Booster vaccinations are given 3 to 4 weeks later, followed by boosters every 1 to 3 years for FPV (depending on exposure risk) and annual boosters for FeLV (as long as the risk for exposure remains). Cats that go outdoors, live with other cats, or visit grooming or boarding facilities are at greater risk for exposure to FPV and FeLV compared with cats that stay indoors and have limited contact with other cats.

The FPV vaccination is recommended for all cats. But if risk for exposure to FeLV is low, your veterinarian may not recommend the FeLV vaccine for your cat. Ask your veterinarian about his or her recommendations for protecting your cat from FeLV.

Keeping the environment clean can help prevent the spread of FPV and FeLV. Although FPV can be killed in the environment by cleaning with a dilute bleach solution, the virus can live on surfaces for up to 2 years and is resistant to many other cleaning products and disinfectants. Be sure to wash hands and change clothes after handling an infected cat. Similarly, bowls, blankets, towels, toys, litterboxes, and other items should be cleaned with bleach (if possible) to reduce the risk of further disease spread. FeLV is killed by many disinfectants and does not live for very long in the environment, so a cat must have contact with an infected cat for the disease to spread. Keeping sick cats separated from healthy cats can reduce the likelihood of spreading FPV and FeLV.

Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. During that time, the new cat should be tested for FeLV and monitored closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.

FPV and FeLV are not considered contagious to humans but are contagious to cats. If your cat is known or suspected to be infected with either of these viruses, contact your veterinarian promptly to discuss how you can protect your other pets.
Feline Distemper and Rabies

- Feline distemper and rabies are serious infections that can be fatal.
- Cats that go outside are at increased risk for exposure to feline distemper and rabies.
- Vaccination can protect cats from disease associated with the feline distemper and rabies viruses.

What Are Feline Distemper and Rabies?

*Feline distemper* is the common name for the feline panleukopenia virus (FPV), which is sometimes called *feline parvovirus*. Despite the name *feline distemper virus*, infection with this virus does not affect a cat’s temperament. Rather, FPV causes serious disease in infected cats and can be fatal.

Rabies is a dangerous virus that infects animals and humans worldwide. The virus is generally fatal in all species, and any warmblooded animal can become infected. Foxes, skunks, coyotes, and certain rodents are implicated in many cases of exposure. Surprisingly, cats are more commonly involved in transmission of rabies than dogs. In fact, cats are the number-one domestic animal carrier of rabies in the United States.

How Do Cats Become Infected With Feline Distemper and Rabies?

Once a cat is infected with FPV, it may shed virus in body fluids (most notably urine and feces) for a few days or up to 6 weeks. If another cat encounters an infected cat (or its body fluids) during this time, transmission is likely. However, FPV can also live in the environment (such as contaminated bedding and other items) for a very long time, so contact with contaminated objects can also spread the infection.

Rabies is most commonly transmitted through contact with saliva from an infected animal. The most common means of contact with saliva is through bite wounds. Cats that go outside, fight with other cats, or encounter wild animals are at increased risk for exposure to rabies.

Signs of Feline Distemper and Rabies

Feline distemper attacks the intestinal tract and the immune system, greatly reducing the number of white blood cells in the circulation. Your cat’s body needs white blood cells to help fight infection, so cats with FPV tend to develop severe infections involving the intestines. These infections can quickly overwhelm the body’s defenses, causing death. Other clinical signs can include the following:

- Fever
- Vomiting
- Lethargy (tiredness)
- Dehydration
- Diarrhea
Some cats become suddenly ill from FPV and die within hours of showing clinical signs. For many other cats, clinical signs become progressively worse over a period of days. Kittens infected before birth or during the first few days of life can develop severe brain and nerve damage, resulting in permanent difficulty standing or walking if the kitten survives the infection.

The clinical signs of rabies can be vague and difficult to identify. The virus is usually introduced into the body through a bite wound from an infected animal. After entering the body, the rabies virus makes its way into the nervous system and then into the salivary glands (glands in the neck that produce saliva). Once the virus enters the salivary glands, the animal can pass the infection to other animals and humans through saliva. Unfortunately, early clinical signs may not be apparent before the animal becomes infective, which means that an infected cat can spread the disease before it shows signs of being sick.

Clinical signs of rabies progress through several stages, and not all infected cats show evidence of all stages:

- **Early signs:** Fever, acting nervous or agitated, hiding
- **Later signs:** Aggression, increased agitation, erratic behavior
- **End stage:** Muscle weakness and paralysis, coma, death

The incubation period associated with rabies can be as brief as a few days or as long as several months. Death can occur from respiratory failure, seizures, or other complications.

**Diagnosis and Treatment**

Sophisticated testing of blood and body fluids can be used to diagnose FPV, but many veterinarians make the diagnosis based on clinical signs and the presence of a severely low white blood cell count. Treatment is mainly supportive, consisting of administering fluids to prevent dehydration, antibiotics to treat infections, and other medications to help control vomiting and other clinical signs.

Unfortunately, no diagnostic tests are considered accurate enough to confirm rabies in a living animal. The confirmation tests are generally performed by examining and testing the brain after the animal has died or been euthanized. Additionally, there are no effective treatments for rabies in animals. Because of the high fatality rate associated with rabies infection, the best way to protect your cat is to minimize exposure to animals that may transmit the infection and keep your cat’s rabies vaccination up to date.

**Vaccination and Prevention**

Several available vaccines are indicated for preventing disease associated with FPV and rabies. Most of the available FPV vaccines are combination vaccines that also protect against feline herpesvirus and calicivirus. Available rabies vaccines may protect against rabies only or may be combination formulations that protect against other feline viruses. All of the available FPV and rabies vaccines have been tested and found to be safe and effective when administered as directed.
Kittens are generally vaccinated against FPV around 8 to 9 weeks of age. A booster vaccination is given 3 to 4 weeks later, followed by boosters every 1 to 3 years (depending on exposure risk). Initial rabies vaccinations are generally given to kittens between 12 and 16 weeks of age. A booster vaccination is given a year later. Depending on which rabies vaccine is used, subsequent boosters may be given every 1 to 3 years.

The FPV and rabies vaccinations are recommended for all cats. Some municipalities have regulations mandating that cats receive vaccinations against rabies; vaccination against FPV is not required by law but is highly recommended for medical reasons.

Cats that go outside, live with other cats, or visit grooming or boarding facilities are at greater risk for exposure to FPV compared with cats that stay indoors and have limited contact with other cats. Similarly, cats that go outside, where they can encounter stray or wild animals, are at greater risk for exposure to rabies. Ask your veterinarian about the recommended protocol for protecting your cat from these infectious diseases.

Feline distemper is highly contagious among cats. Although FPV can be killed in the environment by cleaning with a dilute bleach solution, the virus can live on surfaces for up to 2 years and is resistant to many other cleaning products and disinfectants. Be sure to wash your hands and change clothes after handling an infected cat. Similarly, bowls, blankets, towels, toys, litterboxes, and other items should be cleaned with bleach (if possible) to reduce the risk of further disease spread. Keeping sick cats separated from healthy cats can also reduce the likelihood of transmission.

A new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. During that time, the new cat should be monitored closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.

Feline distemper is not considered contagious to humans. In contrast, rabies is contagious to any warm-blooded animal—including humans. If your cat is known or suspected to have either of these diseases, contact your veterinarian promptly. It is also important to discuss how you can protect your other pets and family members.
Feline Hypertrophic Cardiomyopathy

- Feline hypertrophic cardiomyopathy (HCM) is an inherited disease of the heart muscle; however, the specifics of its genetic inheritance are not fully understood.
- With HCM, the heart walls become so thickened and rigid that very little blood is able to be pumped through the heart.
- Medications to lessen the workload on the heart can help stabilize a critical patient and decrease the likelihood of entering another crisis.
- Cats with HCM may never show signs of illness, may die without warning, or may develop acute or chronic heart failure.

What Is Feline Hypertrophic Cardiomyopathy?

Hypertrophic cardiomyopathy (HCM) is a disease of the heart muscle. The exact way the disease occurs in cats is unknown, but the result is that the heart muscle becomes extremely thickened with normal and abnormal cells. The thickened muscle can’t relax and contract normally, so HCM decreases the amount of blood that the heart can handle. Heart failure results because there is so little room for blood to collect and be pumped out to the rest of the body. HCM can present itself in a number of ways:

- **Asymptomatic HCM:** The cat has no clinical signs of illness. The diagnosis of HCM is made without evidence of heart failure.
- **Chronic congestive heart failure:** A mild to moderate amount of fluid builds up in and around the lungs.
- **Acute congestive heart failure:** Sudden fluid buildup in the lungs causes a cardiac crisis.
- **Blood clot formation:** Irregular blood flow in the heart leads to clots being sent out to the body.
- **Sudden death:** The heart stops because it is unable to produce a normal beat.

HCM is believed to have a genetic component because families of Maine coon cats, American short-haired cats, and Persian cats have been found to pass the disease to their offspring. The most common cats affected, however, are domestic short-haired cats. Male cats are affected more often than female cats. HCM is a progressive disease and can be found in kittens as early as 3 months of age and adult cats well into their senior years.

What Are the Signs of Feline Hypertrophic Cardiomyopathy?

If there is relatively mild heart muscle thickening, cats can live a long, full life with HCM and never have any problems. The worry comes when there is more severe heart muscle thickening. When not enough blood is being pumped out from the heart to the rest of the body, the following signs can be seen:

- Increased respiratory rate and effort, caused by fluid in and around the lungs
- Severe leg pain, neurologic signs, and kidney failure, caused by clots that form in the heart and move out toward the legs, brain, and kidneys
• Sudden death, which occurs when the heart stops beating normally because the muscle no longer works or a clot forms in the heart and blood cannot be pumped through

What Is the Diagnosis for This Disease?

Heart failure is defined as a condition in which fluid builds up in or around the lungs as a result of impaired heart functioning. HCM must be distinguished from other causes of heart failure such as hyperthyroidism, high blood pressure, and heart defects.

The diagnosis of HCM is based on medical history, physical exam findings, and specific tests that look closer at heart functioning and the health of the heart and lungs. During physical exam, a stethoscope is used to listen to the heart and lungs to detect a heart murmur, abnormal heart rate or rhythm, or chest fluid. Murmurs are “extra” sounds (in between the heartbeats) heard when blood is flowing abnormally through the heart. Some cats with HCM don’t have heart murmurs. If there is fluid in the chest, the lungs can sound abnormally loud or quiet. Feeling the legs and feet for warmth and pulses helps detect clots that may have lodged in the arteries carrying blood through the body. When HCM is suspected after a physical exam, some or all of these tests may be recommended to confirm the diagnosis:

• Blood tests: to look for thyroid, kidney, liver, or other diseases
• Blood pressure check: to check for high or low blood pressure
• Radiographs (x-rays): to look for fluid in the chest and evaluate the size and position of the heart
• Echocardiogram (heart ultrasound): to measure the thickness of the heart walls, look at the motion of heart valves, and see blood clots
• Electrocardiogram (ECG): to evaluate heart rate and rhythm

How Is Feline Hypertrophic Cardiomyopathy Treated?

• Acute heart failure: If a cat is having severe breathing problems or is otherwise unstable, diagnostic tests may need to be postponed or limited until the patient can withstand them. Too much stress can be fatal in a cat suffering from heart failure. Medications may be given to calm your cat or take some of the load off of the heart, oxygen may be administered to ease breathing, and fluid may be removed from the chest to allow the lungs to fill with air more effectively. Hospitalization may be necessary to get the heart failure under control.
• Chronic heart failure: In order to prevent a crisis in a stable HCM patient with some degree of heart failure, medications may be prescribed to decrease the amount of work the heart has to perform.
• Blood clot formation: Anticlotting medications may help during a crisis and prevent new clots.
• Asymptomatic HCM: Generally, no treatment is prescribed until there is evidence that the heart is unable to successfully send blood to the rest of the body. There is no evidence that early treatment prevents the onset of heart failure.

What Is the Outcome for Pets With This Disease?
In many cases, heart failure never occurs, and cats with mild HCM may lead long, full lives. Sadly, once a cat with HCM enters heart failure, the chances of survival past 1 to 2 years are slim. It is difficult to predict what will happen once your cat is diagnosed with HCM. The progression of the disease varies from cat to cat, and cats can live for years or die suddenly. There is no cure for HCM, but severe, acute heart failure can sometimes be prevented by using medications to keep chronic heart failure under control.

The most important thing to remember is your role in managing this disease. Watching your cat for changes in respiratory rate and effort is key to catching heart failure early and monitoring the effectiveness of treatment once it has begun.
Feline Hypervocalization

- Excessive vocalization is called hypervocalization.
- If you think that your cat might be hypervocalizing because of pain, take him or her to your veterinarian.
- The most common reason that cats hypervocalize is that they have learned that it helps them get what they want.

Most cat owners appreciate some vocalization—meowing, purring, etc.—from their cats. The many sounds that cats make help us communicate with them by telling us what they like, dislike, want, and need. However, some cats vocalize excessively, which can become annoying to owners. Excessive vocalization is called hypervocalization.

Siamese cats and other Asian breeds known for being talkative usually can’t be trained to be quieter. Other cats hypervocalize for various reasons. Some cats hypervocalize when they’re in pain. If you think that your cat might be hypervocalizing because of pain, take him or her to your veterinarian.

The most common reason that cats hypervocalize is that they have learned that it helps them get what they want, whether it is to be let outside, fed, or petted. These hypervocalizers know that their owner will give in for some peace and quiet. Once the owner gives in, even if it takes half an hour, the cat learns that vocalizing works. The only way to reduce this type of hypervocalization is to ignore it and not reward it. You might have to wear earplugs or confine your cat to a room—whatever it takes to avoid giving in to your cat’s unwanted attention-seeking behavior. In addition, when you think that your cat is about to begin vocalizing, distract him or her with an interactive toy before the vocalizing begins. The interactive session with your cat will probably give him or her some much-needed mental and physical activity. At the end of the session, feed your cat or allow him or her to take a nap. In addition to being a distraction, interactive sessions can reduce hypervocalization caused by a lack of stimulation.

Cats may also hypervocalize as they become older and their senses decline. A common time for this type of hypervocalizing is when the house is dark at night. If your senior cat starts to hypervocalize, take him or her to your veterinarian to ensure that he or she is not in pain. If your cat hypervocalizes at night, call out to him or her to help your cat find you. It might help to confine your cat to your room at night.
Feline Immunodeficiency Virus

- Infection with feline immunodeficiency virus (FIV) is a contagious, untreatable disease.
- Cats that go outside are at increased risk for exposure to FIV.
- Vaccination can help prevent infection with FIV.

What Is Feline Immunodeficiency Virus?

Feline immunodeficiency virus (FIV) is contagious among cats. Although FIV is not contagious to humans, FIV has some similarities to the human immunodeficiency virus (HIV) and has been used to help researchers better understand HIV.

How Do Cats Become Infected With Feline Immunodeficiency Virus?

FIV is generally transmitted to a cat through direct contact with saliva from an infected cat. Most cats are exposed through bite wounds sustained during fights with FIV-infected cats. Due to the territorial behavior and related aggression of cats (particularly male cats), cats that are permitted to roam outside tend to be at increased risk for exposure to FIV.

FIV is killed by many disinfectants and does not live very long in the environment, so contact with an infected cat is necessary for disease transmission.

Signs of Feline Immunodeficiency Virus

Not every cat that becomes infected with FIV develops clinical signs. In fact, some cats can live a relatively normal life span after becoming infected. Similar to HIV, FIV causes illness by attacking the patient’s immune system. Therefore, FIV-infected cats tend to develop clinical signs related to secondary (related) infections and not necessarily to the presence of the virus itself. Clinical signs can include the following:

- Fever
- Lymph node enlargement
- Chronic dental, oral, and gum infections
- Chronic eye infections
- Chronic diarrhea
- Chronic respiratory infections
- Chronic skin and ear infections
- Weight loss

When FIV-positive cats continue to spend time outside, they are at increased risk for exposure to other viruses, parasites, and infections that their bodies may be unable to handle. Additionally, they are likely to sustain wounds (through cat fights or other trauma) that may become infected or may fail to heal properly due to the cat’s compromised immune function. Most veterinarians recommend keeping FIV-positive cats indoors. This not only protects them from various injuries and infections that are common in outdoor cats but also reduces the likelihood that they will spread FIV to other cats.
Diagnosis and Treatment

Because FIV can cause various clinical syndromes in the body, routine blood work (such as a chemistry panel and complete blood cell count [CBC]) may show evidence of non-specific infection but not necessarily help your veterinarian determine if your cat is infected with FIV.

Many veterinarians use a rapid-result test called a SNAP test to screen for FIV. The SNAP test is very accurate, can be performed in your veterinarian’s office using a very small amount of blood, and takes only a few minutes to complete. Because FIV infection can have many clinical presentations, your veterinarian may want to test your cat if he or she seems to be ill—especially if a fever or chronic, recurring illness is present. More sophisticated FIV testing is also available, but these tests must be performed at an outside laboratory, from which results take longer to receive.

Kittens whose mothers were infected with FIV may test positive when they are very young but test negative later (as the antibodies they received while nursing from their mother wear off). Therefore, some veterinarians recommend retesting young kittens when they are older (for example, at 6 months of age) to verify whether they are still positive.

If your cat tests positive for FIV, do not despair! This result does not necessarily mean that your cat will soon become sick and die. Some FIV-positive cats can live a relatively normal life span, as long as precautions are taken to protect them from wounds, parasites, and other infections that can make them sick and shorten their life span.

No medication can eliminate FIV. Most treatments are aimed at managing the clinical signs and associated complications. Keeping cats indoors goes a long way toward protecting them from disease complications.

Vaccination and Prevention

There is a vaccine available that can help to prevent infection with FIV. Kittens are generally vaccinated against FIV around 8 weeks of age. Two additional boosters are given 2 to 3 weeks apart (according to the vaccine label), followed by boosters each year as long as the risk for exposure remains. Cats that go outside (particularly male cats) are at greater risk for exposure to FIV compared with cats that stay indoors. If your cat’s exposure risk is low, your veterinarian may not recommend the FIV vaccine for your cat, so be sure to discuss this important point with your veterinarian.

As with other vaccines, the FIV vaccine causes the body to produce antibodies (cells that can recognize FIV and protect the body from infection). However, current FIV tests cannot tell the difference between FIV antibodies obtained through vaccination and those obtained through natural exposure to the disease (such as from a bite wound). This means that once a cat is vaccinated against FIV, there is no reliable way to tell if the cat is FIV-positive or merely FIV-vaccinated. This can become a cause for concern if a roaming cat is picked up by a shelter and subsequently tested for FIV, which is a common practice at shelters. Until this issue can be resolved, many veterinarians recommend implanting identification microchips in FIV-vaccinated
cats. This can help shelters identify the cat and avoid euthanasia or another unfortunate consequence of mistaken FIV status.

Because FIV is transmitted through direct contact and is easily killed by common disinfectants, keeping your cat indoors is a good way to reduce risk of exposure. Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and kept separate from all other household pets for a quarantine period of at least a few weeks. During this time, the new cat should be tested for FIV and monitored closely for signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.
Feline Leukemia and Rabies

- Feline leukemia and rabies are contagious, untreatable, and commonly fatal.
- Cats that go outside are at increased risk for exposure to feline leukemia and rabies.
- Vaccination can protect cats from disease associated with the feline leukemia and rabies viruses.

What Are Feline Leukemia and Rabies?

Feline leukemia virus (FeLV) is contagious among cats. Unlike many other viruses that enter specific cells in the body and destroy them, FeLV enters certain cells in a cat’s body and changes the cells’ genetic characteristics. This permits FeLV to continue reproducing within the cat each time infected cells divide. This allows FeLV to become dormant (inactive) in some cats, making disease transmission and prognosis (outlook) difficult to predict.

Rabies virus is dangerous and infects animals and humans worldwide. Rabies is generally fatal in all species, and any warm-blooded animal can become infected. Foxes, skunks, coyotes, and certain rodents spread the disease in many cases. Surprisingly, cats are more commonly involved in spreading rabies than dogs are. In fact, cats are the number-one domestic animal carrier of rabies in the United States.

How Do Cats Become Infected With Feline Leukemia and Rabies?

Feline leukemia is generally transmitted through contact with saliva from an infected cat. Certain “social” behaviors such as mutual grooming and sharing food or water bowls can spread the disease. Kittens can become infected during fetal development or during the first days of life as their mothers nurse and care for them.

FeLV is killed by many disinfectants and does not live for very long in the environment, so contact with an infected cat is necessary for disease spread. However, predicting which cats can transmit the disease is complicated because some cats that are contagious don’t develop signs of infection.

Like FeLV, rabies is also transmitted through contact with saliva from an infected animal. With rabies, however, the most common means of saliva contact is through bite wounds. Cats that go outside, fight with other cats, or encounter wild animals are at increased risk for exposure to rabies.

Signs of Feline Leukemia and Rabies

Not every cat that becomes infected with FeLV develops clinical signs. The immune system of some cats can eliminate the infection before the cat becomes sick. In other cats, the virus can “hide” in the bone marrow, where it is difficult to detect until it begins to cause problems later in life. Other cats become carriers of the disease or experience various illnesses before eventually dying of FeLV-associated complications.
Because FeLV can affect almost any organ system in the body, clinical signs can vary significantly. Signs include:

- Anemia (lack of red blood cells)
- Leukemia
- Immune suppression
- Fever
- Lethargy (tiredness)
- Chronic respiratory infections
- Chronic dental and gum infections
- Cancer of the lymphatic system (and other cancers)

The clinical signs of rabies can be vague and difficult to identify. The virus is usually introduced into the body through a bite wound from an infected animal. After entering the body, the rabies virus makes its way into the nervous system and then into the salivary glands (glands in the neck that produce saliva). Once the virus enters the salivary glands, the animal can pass the infection to other animals and humans through saliva. The incubation period associated with rabies can be as brief as a few days or as long as several months. Death can occur from respiratory failure, seizures, or other complications. Unfortunately, early clinical signs may not be apparent before the animal becomes infective, which means that an infected cat can spread the disease before it shows signs of being sick.

Clinical signs of rabies progress through several stages, and not all infected cats show evidence of all stages:

- **Early signs**: Fever, acting nervous or agitated, hiding
- **Later signs**: Aggression, increased agitation, erratic behavior
- **End stage**: Muscle weakness and paralysis, coma, death

**Diagnosis and Treatment**

Because there are several stages of FeLV infection and cats can handle the infection differently, diagnosis is not always straightforward. Blood tests detect the disease in many cats, but for other cats, the bone marrow must be examined to confirm infection. Some cats may test positive on blood tests when they are young kittens but test negative later on if their immune system has been able to eliminate the infection. Similarly, some cats may test negative at one point and test positive later on as the virus progresses through various stages in the body. Because FeLV can have many clinical presentations, your veterinarian may want to test your cat if it seems to be ill—especially if a fever is present. Some cats need to have multiple tests done to confirm infection.

No medication can eliminate FeLV. Most treatments are aimed at managing the clinical signs and complications. Therapy may include blood transfusions, intravenous fluids and feedings, chemotherapy, and antibiotics.
The tests used to confirm a diagnosis of rabies are performed by examining and testing the brain after the animal has died or been euthanized. Unfortunately, there are no diagnostic tests considered accurate enough to confirm rabies in a living animal. As with FeLV infection, there are no effective treatments for rabies in animals. Because of the high fatality rate associated with rabies, the best way to protect your cat is to minimize exposure to animals that may transmit the infection and keep your cat’s rabies vaccination up to date.

**Vaccination and Prevention**

Several vaccines are available for preventing disease associated with FeLV infection and rabies. Some of the available FeLV vaccines are combination vaccines that also protect against feline herpesvirus, panleukopenia (feline distemper), and calicivirus. Available rabies vaccines may be single-organism vaccines or combination formulations that protect against other feline viruses. All of the available FeLV and rabies vaccines have been tested and found to be safe and effective when administered as directed.

Kittens are generally vaccinated against FeLV around 8 to 9 weeks of age. A booster vaccination is given 3 to 4 weeks later, followed by boosters each year as long as the risk for exposure remains. If risk for exposure is low, your veterinarian may not recommend the FeLV vaccine for your cat.

Initial rabies vaccinations are generally given to kittens between 12 and 16 weeks of age. A booster vaccination is given a year later. Depending on which rabies vaccine is used, subsequent boosters may be given every 1 to 3 years.

Some municipalities have regulations mandating that cats receive vaccinations against rabies. Vaccination against FeLV is not required by law but is highly recommended for cats at risk for exposure to the virus. Cats that go outside or live with other cats are at greater risk for exposure to FeLV compared with cats that stay indoors and have limited contact with other cats. Similarly, cats that go outside where they can encounter stray or wild animals are at greater risk for exposure to rabies. Ask your veterinarian about how to protect your cat from these infectious diseases.

Because FeLV is transmitted through contact, keeping sick cats separated from healthy cats can reduce the likelihood of transmission. Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. During that time, the new cat should be tested for FeLV and monitored closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.

Feline leukemia is not considered contagious to humans. In contrast, rabies is contagious (and fatal) to any warm-blooded animal, including humans. If your cat is known or suspected to have either of these diseases, contact your veterinarian promptly to discuss how you can protect your other pets and family members.
Feline Leukemia Virus

- Feline leukemia is a contagious, untreatable disease that can be fatal.
- Feline leukemia has been linked to the development of certain cancers in cats.
- Cats that go outside are at increased risk for exposure to feline leukemia.
- Vaccination can aid in the prevention of disease associated with feline leukemia.

What Is Feline Leukemia?

Feline leukemia virus (FeLV) is contagious among cats. Unlike many other viruses that enter specific cells in the body and destroy them, FeLV enters certain cells in a cat’s body and changes the cells’ genetic characteristics. This permits FeLV to continue reproducing within the cat each time infected cells divide. This allows FeLV to become dormant (inactive) in some cats, making disease transmission and prognosis (outlook) difficult to predict.

How Do Cats Become Infected With Feline Leukemia?

Feline leukemia is generally transmitted through contact with saliva from an infected cat. Certain “social” behaviors such as mutual grooming and sharing food or water bowls can spread the disease. Kittens can become infected during fetal development or during the first days of life as their mothers nurse and care for them.

FeLV is killed by many disinfectants and does not live for very long in the environment, so contact with an infected cat is necessary for disease spread. However, predicting which cats can transmit the disease is complicated because some cats that are contagious don’t develop signs of infection.

Signs of Feline Leukemia

Not every cat that becomes infected with FeLV develops clinical signs or long-term complications associated with the virus. The immune system of some cats can eliminate the infection before the cat becomes sick. In other cats, the virus can “hide” in the bone marrow, where it is difficult to detect until it begins to cause problems later in life. Still other cats become carriers of the disease or experience various illnesses and immune suppression before eventually dying of FeLV-associated complications.

Because FeLV can affect almost any organ system in the body, clinical signs can vary significantly. Some of the signs are:

- Anemia (lack of red blood cells)
- Leukemia
- Immune suppression
- Fever
- Lethargy (tiredness)
- Chronic respiratory infections
- Chronic dental, oral, and gum infections
• Cancer of the lymphatic system (and other cancers)

**Diagnosis and Treatment**

Because there are several stages of disease and not every cat handles FeLV infection the same way, diagnosis is not always straightforward. Blood tests detect the disease in many cats, but for other cats, the bone marrow must be examined to confirm infection. Some cats may test positive on blood tests when they are young kittens but test negative later on if their immune system has been able to eliminate the infection. Similarly, some cats may test negative at one point and test positive later on, as the virus progresses through various stages in the body. Because FeLV infection can have many clinical presentations, your veterinarian may want to test your cat if he or she seems to be ill—especially if a fever is present. Some cats need to have multiple tests done to confirm infection.

No medication can eliminate FeLV. Most treatments are aimed at managing the clinical signs and complications. Cats that are anemic may receive blood transfusions; cats that are dehydrated or not eating may receive intravenous fluids and feedings; chemotherapy is sometimes helpful in managing cancers; and antibiotics may be used to treat associated infections.

**Vaccination and Prevention**

Several vaccines are available for preventing disease associated with FeLV. All of the available FeLV vaccines have been tested and found to be safe and effective when administered as directed.

Kittens are generally vaccinated against FeLV around 8 to 9 weeks of age. A booster vaccination is given 3 to 4 weeks later according to the vaccine label, followed by boosters each year as long as the risk for exposure remains. Cats that go outside or live with other cats are at greater risk for exposure to FeLV compared with cats that stay indoors and have limited contact with other cats. If risk for exposure is low, your veterinarian may not recommend the FeLV vaccine for your cat. Ask your veterinarian about how to protect your cat from this disease.

Because FeLV is transmitted through contact, keeping sick cats separated from healthy cats can reduce the likelihood of transmission. Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. During that time, the new cat should be tested for FeLV and monitored closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.
Feline Nutrition

- Proper nutrition can help ensure that your cat has optimal health, resistance to disease, a healthy haircoat, a good quality of life, and a long life span.
- The best way to ensure that your cat is properly nourished is to provide a high-quality, well-balanced food that is appropriate for his or her age and/or condition.
- When buying cat food, make sure that an AAFCO statement is on the bag or label.
- Cats must eat meat and should never be fed a regular diet of dog or people food.
- Because dry food promotes healthy teeth and gums, it is generally preferred to canned food.
- Always provide your cat with fresh, clean water.

What You Need to Know

Proper nutrition can help ensure that your cat has optimal health, resistance to disease, a healthy haircoat, and energy. These factors can result in fewer behavioral problems, a good quality of life, and a long life span.

Cats require high-quality fat and protein in their diet. They can’t be vegetarians because their bodies require essential nutrients, such as taurine, from meat. Dog food and people food don’t contain enough of these nutrients for cats; therefore, cats should never be fed a regular diet of dog or people food.

There are many cat foods to choose from, and their quality differs. Name-brand cat foods are supported by research and quality standards to provide complete, balanced nutrition for your cat; if you feed your cat one of these foods, nutritional supplements should not be given unless your veterinarian recommends them. When buying cat food, make sure that an American Association of Feed Control Officials (AAFCO) feeding trial statement is on the bag or label.

Diets formulated for the various stages of a cat’s life are widely available. Many specialty diets formulated for specific problems (e.g., obesity, urinary tract disorder, kidney disease) are available only by prescription through veterinarians.

Because dry food promotes healthy teeth and gums, it is generally preferred to canned food. However, canned food has a longer shelf life, a higher water content, and can be helpful for improving the appetite of a cat that has stopped eating.

Proper nutrition is especially important for kittens, which need more calories, fat, protein, vitamins, and minerals than adult cats. Kittens should be fed a specially formulated, name-brand kitten food several times a day until they are approximately 9 to 12 months old. The number of daily feedings can gradually be decreased as kittens age.

Pregnant and nursing cats also have increased nutritional needs. Ask your veterinarian for details.

Always provide your cat with fresh, clean water.
Feeding

Cats should be fed in a quiet area, away from busy areas of the house. If you have multiple cats that don’t get along, having more than one feeding station can help reduce tension. If your cat is a finicky eater, you can try various high-quality foods to find something he or she likes. If your cat is an adult and does not overeat, you can leave out dry food all the time; this is called free-choice or free feeding. Your veterinarian can help determine if this feeding method is appropriate for your cat. Canned food shouldn’t be left out because it dries quickly, becomes unappealing, and can spoil. Scheduled feedings are recommended for canned food eaters and multicat households in which specialty diets are required. Most adult cats should be fed at least twice daily.

Overfeeding

Overfeeding can lead to serious problems, such as obesity, heart disease, and arthritis, resulting in a shortened life span. Your veterinarian can recommend a proper type and amount of food to maintain your cat’s ideal weight. No more than a few small treats (made for cats) should be given daily.

Lack of Appetite

Lack of appetite can be a sign of serious illness in cats. If your cat is not eating enough or doesn’t eat for more than 1 day, make an appointment with your veterinarian.

Some Foods That Are Bad for Cats

- Milk can give your cat diarrhea. After weaning, cats become lactose intolerant.
- Table scraps can turn your cat into a beggar and upset his or her stomach and nutritional balance.
- Do not feed your cat chocolate, onions, garlic, chives, grapes, raisins, coffee, caffeine, alcohol, or salt.
Feline Obesity

- Obesity (the storage of excess fat) is usually caused by excessive food intake and insufficient exercise.
- One of the biggest problems in pets is overfeeding.
- By examining your cat, your veterinarian can determine whether he or she is overweight or obese and help you create a weight-loss program.
- Cats can develop many obesity-related health problems.
- The most effective weight-loss plans involve increasing activity and feeding fewer calories.

The Basics

Obesity (the storage of excess fat) is usually caused by excessive food intake and insufficient exercise. One of the biggest problems in cats is overfeeding, which can lead to serious problems, including obesity, heart disease, and arthritis, resulting in a shortened life span. Your veterinarian can recommend a proper type and amount of food to maintain your cat’s ideal weight.

Obesity is more common in older, less active cats. Cats that are fed table scraps and snacks are more likely to be overweight than cats that are fed only a commercial cat food.

There are many obesity-related health problems (see below), so it’s important to bring your cat in for annual veterinary checkups. By examining your cat, your veterinarian can tell you whether your cat is overweight or obese and how to treat him or her.

Losing weight can help your cat live longer, avoid disease, and feel better, especially on hot days.

Is Your Cat Overweight?

An average domestic shorthaired cat should weigh 8 to 10 lb (3.6 to 4.5 kg). Here’s how to tell if your cat is fat:

- If you put a hand on either side of your cat and firmly stroke his or her sides, you should be able to feel the ribs. This indicates that your cat is probably a proper weight. If you can’t feel the ribs, your cat is overweight. (If you can see the ribs, your cat is underweight.)
- If you stand above your cat and look down at him or her, your cat’s waistline should be detectable as a slight indentation just behind the ribs.
- A swinging pouch between your cat’s hind legs is a sign that your cat is overweight.
- Your cat’s anal area should look clean. Some obese cats have trouble grooming this area.
- If your cat snores or wheezes, it could be a sign of obesity.

What to Do
Consult your veterinarian before changing your cat’s eating and exercise habits. Your veterinarian can recommend an appropriate diet and exercise program for safe weight loss.

When helping your cat lose weight, slower is safer. “Crash” diets aren’t appropriate. If your cat gained the weight slowly, he or she can lose it slowly. When on a weight-loss program, your cat should lose approximately 1 lb per month.

The most effective weight-loss plans involve increasing activity and feeding fewer calories. The more convenient you make it, the better the chance of sticking with it.

**Diet**

There are several dietary strategies for helping your cat lose weight. The best way to ensure that your cat is properly nourished is to provide a high-quality, well-balanced food that is appropriate for his or her age and/or condition. When buying cat food, make sure that the American Association of Feed Control Officials (AAFCO) statement is on the bag or label. Your veterinarian may suggest one or more of the following (be sure to use a measuring cup to keep track of how much you’re feeding your cat):

- **Feed your cat smaller meals more often.** This helps your cat burn more calories and keeps him or her from begging for food. However, don’t feed more food per day. Instead, use a measuring cup to divide your cat's daily ration into three or more feedings.
- **Feed your cat less of his or her regular food per day.** This strategy is most effective with increased activity. First check with your veterinarian to ensure that your cat will receive the right amount of nutrients.
- **Instead of feeding your cat less, gradually switch him or her to a low-calorie food recommended by your veterinarian.** The change should be slow because a sudden switch could upset your cat’s stomach. Combine the new food with your cat’s usual food in increasingly larger proportions over several weeks until you are only providing the new food.
- **Don’t feed your cat table scraps, which have a lot of calories and could upset your cat’s stomach.** Give feline-formulated treats only on special occasions, such as birthdays, holidays, or good visits to the veterinarian.

**Exercise**

You can help your cat become more active and lose weight by scheduling regular playtimes. Consult your veterinarian before beginning an exercise program for your cat. Leaving out empty cardboard boxes and paper bags, tissue paper, and catnip may inspire your cat to play. Here are some calorie-burning activities for your cat:

- Chasing (e.g., use string, sticks with attached feathers, balls, or flashlight pointers [never point these at an animal’s or person’s eyes])
- Climbing a cat tree
- Scratching on posts or pads
- Playing with other pets
- Performing tricks for low-calorie treats (e.g., train your cat to run to you from across the house or climb a cat “tree” when you shake the treat container)
- Trying to remove kibbles from specially designed activity toys

Consider adopting another pet so that your cat has a playmate to encourage activity.

**Obesity-Related Problems in Cats**

- Heart disease
- Reduced life span
- Liver problems
- Labored or difficult breathing
- Fatigue
- Greater risk for heatstroke
- Diabetes
- Ligament and joint problems, including arthritis
- Nonallergic skin conditions

**Cats must eat a meat-based cat food and should never be fed a regular diet of dog or people food.**
Feline Pancreatitis

- Pancreatitis is an inflammation of the pancreas, an organ in the abdomen that helps the body digest food.
- In cats, the clinical signs of pancreatitis can be vague, such as appetite loss, dehydration, and lethargy (tiredness).
- Treatment is aimed at supporting the patient, including nutritional supplementation, and minimizing clinical signs; cats with chronic pancreatitis can experience recurring episodes of the condition.

What Is Feline Pancreatitis?

The pancreas is an organ in the abdomen that is involved in helping the body digest food. The pancreas releases enzymes (proteins that are involved in chemical reactions in the body) into the digestive tract to help break down fats and promote digestion. When the pancreas becomes inflamed, the condition is referred to as pancreatitis.

When pancreatitis occurs, the pancreas releases enzymes and other substances into the surrounding area of the abdomen. These substances cause localized inflammation that damages the pancreas and nearby organs and can lead to life-threatening complications.

There are two forms of pancreatitis: acute (tends to occur suddenly) and chronic (tends to happen over time). Compared with dogs, cats are more likely to have the chronic form of the disease. Both forms can be mild or severe, and their clinical signs can be very similar.

Abdominal trauma (such as being hit by a car) and infection with some viruses and parasites have been associated with the development of pancreatitis in cats. Inflammatory bowel disease has also been associated with pancreatitis in cats. However, in most cases, it is not clear what causes pancreatitis in cats.

What Are the Clinical Signs of Feline Pancreatitis?

Unlike dogs, many cats with pancreatitis do not vomit and don’t exhibit obvious abdominal pain. The clinical signs associated with pancreatitis in cats may be limited to appetite loss, dehydration, and lethargy (tiredness). Some cats with pancreatitis have very mild signs that seem to resolve on their own, so the condition may remain undiagnosed.

How Is Feline Pancreatitis Diagnosed?

Obtaining information about your cat’s medical history and performing a physical examination can provide your veterinarian with valuable information that can help determine if your cat may have pancreatitis. However, the diagnosis of pancreatitis can be complicated, because there is no single test that can diagnose it in all cases. Initial diagnostic testing may include blood work such as a chemistry panel and complete blood cell count (CBC), radiographs (x-rays), and an abdominal ultrasound examination to rule out intestinal blockages and other causes for the clinical signs. Depending on your cat’s health, your veterinarian may also recommend a surgical
biopsy (removal of a tissue sample) to determine if your cat has pancreatitis. There are also specific blood tests that, when combined with other supporting information, can help diagnose pancreatitis; your veterinarian may recommend specific testing if pancreatitis is suspected.

Treatment and Outcome

Feline pancreatitis can be challenging to treat. There is no treatment that reverses the condition, so therapy is aimed at supporting the patient and minimizing the clinical signs until they resolve. Antibiotics are commonly given (although not always), as well as fluids and medications to relieve pain. If the cat is vomiting, medications can be administered to relieve this problem. If a cat with pancreatitis has not eaten for several days, your veterinarian may recommend nutritional supplementation early during the course of treatment. Some veterinarians provide nutrition through intravenous feeding (directly into a vein) or placement of a feeding tube. If the pet does not respond to medical treatment, there are also surgical procedures to treat pancreatitis.

The long-term outcome for a cat with pancreatitis can be difficult to predict, especially if the problem is chronic and likely to recur. Additionally, severe pancreatitis can cause life-threatening damage to the body, including peritonitis (an inflammation of the tissue lining the abdomen), hepatic lipidosis (fatty liver disease), kidney failure, and diabetes.

Cats with a history of pancreatitis should be monitored closely for evidence that the condition is recurring. Sometimes, a permanent diet change to a reduced-fat diet may be recommended.
Feline Senior Wellness

- As cats grow older, their bodies become less able to cope with physical or environmental stress.
- Cats are very good at hiding signs of illness, and health problems can appear quickly.
- Most experts agree that healthy senior cats should see their veterinarians every 6 months.

When Is a Cat “Senior”?

With many cats living well into their teens or even twenties, many owners wonder: When is a cat truly a senior citizen? The answer is that there is no specific age at which a cat becomes “senior.” Individual pets age at different rates. As a general guide, however, the American Association of Feline Practitioners (AAFP) has suggested the following age ranges:

- Mature to middle-aged: 7 to 10 years
- Senior: 11 to 14 years
- Geriatric: 15+ years

Knowing the general age of your cat can help you monitor him or her for early signs of any problems.

Health Issues in Senior Cats

As cats grow older, their bodies become less able to cope with physical or environmental stress. Their immune systems become weaker, and they are more prone to developing certain diseases or conditions, including:

- Arthritis
- Cancer
- Cognitive disorders
- Constipation
- Deafness
- Dental disease
- Diabetes mellitus
- Heart disease
- Hyperthyroidism
- Inflammatory bowel disease
- Kidney disease
- Retinal disease/vision problems

This is why regular senior wellness visits with your veterinarian are important for the long-term health of your cat.

The Senior Cat Wellness Exam
Just as with people, it’s important for feline patients to see their doctors more often as they age. Most experts agree that healthy senior cats should see their veterinarians every 6 months. A thorough senior wellness exam is designed to:

- Promote the longest and healthiest life possible
- Recognize and control known health risks for older cats
- Detect any signs of disease at their earliest, when they are the most treatable

During a senior wellness exam, your veterinarian will ask you questions to obtain a complete medical history for your cat and to determine if there have been any changes in health or behavior since the last visit. During the physical examination, your veterinarian will assess your cat’s overall appearance and body condition by listening to his or her heart and lungs; feeling for signs of pain, tumors, or other unusual changes in the neck and abdomen; checking joints for signs of arthritis or muscle weakness; and examining the ears, eyes, and mouth for any signs of disease.

A routine senior wellness exam should also include the following tests to check your cat’s blood for signs of disease and to assess your cat’s kidney and liver function:

- Blood pressure
- CBC (complete blood count)
- CHEM screen (liver and kidney function)
- Urinalysis
- T4 (thyroid function)

Most veterinarians recommend that this baseline laboratory testing be conducted at least once a year in cats that are 7 to 10 years old and more frequently in older cats.

Additional tests may be required depending on the results of routine screening tests. Which tests are necessary and how often they are performed are different for each cat, but, in general, the ones listed above will provide your veterinarian with a good “snapshot” of your senior cat’s health. Over time, these test results can be tracked and compared to help your veterinarian detect any developing health trends.

**Monitoring Your Senior Cat**

Cats age much more rapidly than people do and are very good at hiding signs of illness. Therefore, they may appear healthy for a long time only to become suddenly ill once their ability to compensate for an underlying disease is gone. You can help your veterinarian by keeping a close eye on your cat between exams.

Unexplained weight loss or weight gain is often an early sign of underlying disease. Weight management itself can also be an issue: Many mature or senior cats are obese, while geriatric cats often have trouble maintaining their weight and can become too thin. Obesity can contribute to the development of diabetes, osteoarthritis, and other conditions.
Behavior problems also become more common as pets age. If you note any changes in your cat’s behavior (e.g., unusual cries) or regular routines, such as grooming or litterbox habits, bring your cat in for a checkup and inform your veterinarian.

**Keeping up with Basic Care**

Along with paying more attention to your cat’s health as he or she ages, you should continue routine wellness care such as parasite prevention, dental care, nutritional management, and appropriate vaccination. Maintaining proper routine care becomes even more important as your pet’s immune system ages.

Also, take steps to ensure your cat’s comfort, such as making sure litterboxes and food bowls are still easily accessible to your old friend and that you give him or her plenty of attention and affection.
Feline Stomatitis

- Feline stomatitis is a severe, painful inflammation of a cat’s mouth and gums.
- Dental disease, certain viruses, and some other inflammatory conditions can cause feline stomatitis.
- The long-term outcome can vary. Many cats require long-term treatment to control the condition.

What Is Feline Stomatitis?

Feline stomatitis is a severe, painful inflammation of a cat’s mouth and gums. In most cases, the condition causes ulcers to form in the mouth; these ulcers can involve the lips, tongue, gums, and back of the throat. Cats of any age or breed can be affected.

There is no single cause of feline stomatitis. Dental disease (particularly periodontal disease) is commonly implicated as a cause of stomatitis in cats. Periodontal disease results from the accumulation of plaque (bacteria) on and around the teeth, which causes inflammation involving the gums and tooth support structures.

In many cases, the cause is assumed to be immune-mediated, meaning that the cat’s immune system attacks its own oral tissues as an abnormal response to bacteria in the mouth. Other medical conditions that can be associated with stomatitis include infection with viruses (such as feline leukemia virus [FeLV], feline immunodeficiency virus [FIV], and calicivirus) and bartonellosis.

What Are the Clinical Signs of Feline Stomatitis?

Feline stomatitis is extremely painful. In some cases, a cat suffering with this condition may be in too much pain to open his or her mouth to eat. In other cases, the cat may try to eat, but scream and drop the food as soon as it touches the mouth. Other clinical signs may include the following:

- Drooling (sometimes with blood)
- Unkempt hair coat (because grooming is painful)
- Refusal to eat
- Bad breath
- Weight loss
- Pawing at the face or mouth

How Is Feline Stomatitis Diagnosed?

Examining the mouth of a cat with stomatitis can be difficult because the cat is reluctant to open his or her mouth. Your veterinarian may recommend sedation to facilitate a more complete examination.
Results of basic blood tests, such as a chemistry panel and complete blood cell count (CBC), tend to be unremarkable in cats with stomatitis. However, your veterinarian may recommend specific testing for underlying diseases such as FeLV, FIV, and bartonellosis.

Sometimes, a small sample of tissue from the mouth is submitted to a laboratory for biopsy. However, the diagnosis is commonly based on clinical signs and physical examination findings. A dental examination and dental x-rays can help your veterinarian determine the extent of periodontal disease.

What Are the Treatment and Outcome for Feline Stomatitis?

Because the condition is very painful, initial treatment generally includes giving medication to control pain and inflammation. Antibiotics are also commonly administered. Some cats may be willing to eat soft food, so owners may be advised to puree canned food until the cat’s mouth heals.

Severe periodontal disease has been implicated as a cause of feline stomatitis. Although stomatitis is difficult to completely cure and treatment tends to be long term, your veterinarian will likely recommend managing dental disease as part of the overall treatment plan. A thorough dental cleaning may be recommended, and many cats do well if the molar and premolar teeth are removed. Because tooth surfaces provide areas for bacteria to attach, removing the teeth can help control periodontal disease and minimize the bacteria that provoke the immune system in cats with stomatitis. Cats tend to do very well without their teeth.

If the cat has an underlying illness that can be treated, such as bartonellosis, treatment should be pursued.

Long-term outcome can vary. Many cats with stomatitis require long-term treatment with anti-inflammatory medications (and antibiotics intermittently) to control the condition. At-home tooth brushing and other dental care are recommended to reduce the accumulation of plaque and associated inflammation in the mouth.
**Feline Upper Airway Infections**

- Cats, especially kittens, often get upper airway infections.
- Approximately 90% of all upper airway infections in cats are caused by two common viruses: feline herpesvirus-1 and feline calicivirus.
- Depending on their cause, upper airway infections can quickly become serious, especially in kittens. If your cat shows any signs of respiratory illness, make an appointment with your veterinarian right away.
- Treatment typically consists mostly of keeping your cat warm, comfortable, and eating and drinking properly.
- Feline herpesvirus-1 and feline calicivirus vaccines are considered “core,” meaning that they should be given to virtually every cat.

**What Are Upper Airway Infections?**

Upper airway infections in cats often resemble the common cold in people. Cats, especially kittens, often get upper airway infections. If your cat shows any signs of respiratory illness, such as sneezing, wheezing, or discharge from the eyes or nose (see box), make an appointment with your veterinarian right away. Depending on their cause, upper airway infections can quickly become serious, especially in kittens. In adult cats, untreated infections can lead to other (secondary) infections or damage delicate sinuses, resulting in chronic problems.

Approximately 90% of all upper airway infections in cats are caused by two common viruses: feline herpesvirus-1 and feline calicivirus. Feline herpesvirus is related to the virus that causes cold sores and chickenpox in people; however, people cannot get sick from the feline virus. Upper airway infections in cats can also be caused by fungi or bacteria. It is common for cats to be “co-infected”—infected with more than one agent (e.g., a virus and a bacterium) at the same time—which can make treatment and recovery longer and more difficult.

Signs of upper respiratory disease can also be linked to other serious problems, like allergies, dental disease, cancer, or the presence of a foreign object in the nose or the back of the mouth.

**Signs of Upper Airway Infections**

Signs of upper airway tract disease in cats depend on what is causing them. The most common ones are:

- Sneezing
- Watery or mucous discharge from the eyes or nose
- Cough
- Fever
- Lethargy
- Loss of appetite or weight

Less common signs include:
• Hoarse or weak “voice”
• Change in face shape
• Ulcers in the mouth or eyes

How Are These Diseases Spread?

Feline upper airway infections are spread the same way as the common cold: a healthy cat comes into contact with an object that has been used by an infected cat—for example, a shared food bowl or toy. Frequently disinfecting shared items can help reduce transmission risk. Feline calicivirus can also be spread when a healthy cat uses the same litterbox as an infected cat. And, just like the common cold, your hands can play a role in spreading these viruses, so if you have or touch a sick cat, wash your hands before touching another cat!

Even after they are no longer sick, many cats that have been infected with feline herpesvirus and calicivirus can transmit these viruses to other cats. Therefore, seek professional veterinary advice before introducing a new cat with an unknown vaccination history into your house or before placing your cat in an unfamiliar setting with other cats, such as a boarding facility.

Diagnosis and Treatment

Diagnosing the exact cause of an upper airway infection can be difficult; however, your veterinarian will perform a thorough physical examination and may perform additional tests such as blood tests and radiography (obtaining x-rays). When you take your cat to the veterinary office, it helps if you can remember what vaccinations your cat has had, when your cat might have been exposed to an infected cat, and when your cat began to show signs of being sick. Also, if your cat’s illness lasts an unusually long time or is accompanied by unusual pain, facial deformity, significant weight loss, or some other odd sign, additional diagnostic tests may be needed to rule out other problems.

As in people, very few drugs can control viral infections, so treatment typically consists mostly of keeping your cat warm, comfortable, and eating and drinking properly. Many sick cats lose their appetite because nasal congestion affects their sense of smell, so these cats may need to be tempted with warmed, moist cat food, baby food, or another delicious treat. Discharge from the nose and eyes should be gently cleared away if the cat will allow it, and any lesions in the mouth or eyes should be treated. You may be given a prescription for a broad-spectrum antibiotic to help combat any secondary bacterial infections. Dehydration can be a problem in seriously ill cats, so fluid therapy may be needed in some cases.

Prevention

Cats that are kept indoors are at a lower risk of contracting upper airway diseases. Cats that are allowed outside; have recently been in a shelter, boarding facility, or cattery; or live in a multicat household are at higher risk of contracting these diseases. Kittens, because of their immature immune systems, are also at higher risk.
Vaccines are available to help prevent or reduce the severity of the most common infections. Many vaccines may not be 100% effective in preventing a disease, but they do help limit how sick your cat becomes if he or she is infected. The American Association of Feline Practitioners (AAFP; http://www.catvets.com) considers feline herpesvirus-1 and feline calicivirus vaccines as “core,” meaning that they should be given to virtually every cat. They are usually given in a single combination vaccine. The current AAFP recommendations include vaccinating kittens as young as 6 weeks, accompanied by a series of booster shots. The number of boosters depends on the kitten’s age when the first shot is given. Consult your veterinarian about the best vaccination schedule for your individual cat.
Feline Urethral Obstruction

- Feline urethral obstruction is a potentially fatal condition, usually seen in male cats, during which urine is prevented from leaving the bladder.
- The urethra may be plugged with mucus, urinary sediment, or small bladder stones.
- Diet and bladder infections can have a role in the formation of urinary stones and sediment.
- Treatment involves relieving the blockage and treating complications caused by the obstruction.
- Feeding a special diet, increasing water intake, and treating urinary tract infections early can reduce the risk of future urethral obstructions.

What Is Feline Urethral Obstruction?

Urine flows from the kidneys down the ureters and into the bladder, where it is stored until it is released through the urethra. A urethral obstruction occurs when the urethra becomes blocked, preventing urination. There are many possible reasons for a blockage, including urinary stones, mucus or sediment plugs, blood clots, tumors, and scarring. Although any animal is susceptible to a urethral obstruction, male cats are at greater risk for urethral blockage than dogs or female cats because their urethras are narrow and long, making them easier to plug.

A urethral obstruction is usually caused by a buildup of solid material in the bladder that is unable to fit through the urinary opening. Urinary sediment (crystals), mucus, and inflammatory cells can accumulate in the urine and form a urethral plug. In addition, bladder stones (alone or in combination with other material) may get caught in the urethra on their way out of the body.

Urethral obstruction can cause life-threatening complications. If urine is prevented from exiting the bladder, pressure within the urinary tract can damage the kidneys. Urine contains metabolic waste products that the body needs to eliminate; urethral obstruction causes these toxins to build up. Another possible complication of urinary obstruction is scarring of the urethra, which makes it even narrower and prone to future blockages. In addition, the bladder wall may be stretched to the point where muscle function is lost; in the worst cases, it ruptures.

A urethral obstruction is an emergency situation, and you should go to your veterinarian immediately if you suspect that your pet is “blocked.” If not treated quickly, pets with a urinary obstruction can die from complications.

What Are Signs of Feline Urethral Obstruction?

If your male cat tries multiple times to urinate and produces just a few drops of urine or none at all, chances are good that he is completely or partially blocked. As the condition progresses, he may show evidence of abdominal pain and yowl when touched or when trying to urinate. Within 24 hours, he may become lethargic, not wanting to get up, move, or eat. If left untreated, a urinary obstruction can be fatal. It is very important to get your pet to the veterinarian as soon as you suspect a urinary obstruction.
How Is Feline Urethral Obstruction Diagnosed and Treated?

As soon as you arrive at your veterinarian’s office, your pet will be examined to determine if his bladder is enlarged and whether an obstruction is likely. If an obstruction is confirmed, hospitalization for emergency treatment and stabilization will likely be recommended. Diagnostic testing, procedures, and treatments will be aimed at evaluating the pet, relieving the obstruction, and addressing the complications associated with the obstruction. Your veterinarian may recommend any or all of the following:

**Diagnostics**

- Blood work to assess toxin levels and hydration status
- Urinalysis to look for an infection and/or crystals
- Urine culture to determine if there is an infection and, if so, what bacteria may be responsible
- Radiographs (x-rays) to look for bladder or urethral stones

**Procedures**

- Intravenous catheter placement, which allows for fluids and medications to be administered
- Removal of urine directly from the bladder, which allows for easier urinary catheter insertion
- Urinary catheter placement (under heavy sedation or general anesthesia), which provides a way to flush the bladder and keep it empty for 1 to 3 days while inflammation subsides

**Treatments**

- Intravenous fluids, which maintain blood pressure, correct dehydration, and help the body rid itself of toxins
- Antibiotics, which treat bacterial infections
- Antispasmodics, which relax the urethra in order to allow material to pass through it
- Cystotomy (surgery to remove bladder stones)
- Perineal urethrostomy, which is surgery to make the urethral opening permanently larger, thus reducing the risk of future obstructions
- Long-term dietary changes and urine monitoring

**How Can I Prevent Feline Urethral Obstruction?**

Unfortunately it is very difficult to prevent feline urethral obstructions, as it is not always known what causes them in the first place. Bladder infections may have a role in the formation of urinary sediment and stones, so infections should be treated promptly. Increasing water intake may also be beneficial. Several diets can help reduce the risk of urethral obstruction in cats that are prone to this problem. Ask your veterinarian if your cat should be on a special diet to reduce the risk of urethral obstruction.
Feline Urinary Problems

- Cats can develop serious urinary problems, so it’s important to learn how to recognize trouble signs early.
- If your cat is unable to urinate, this is an emergency requiring immediate veterinary attention.
- A veterinary checkup is very important for a cat that changes his or her litterbox habits.
- There are several effective methods for treating and preventing urinary problems in cats.

The Basics

Here’s how your cat’s urinary system works. The kidneys filter waste and toxins from the blood. These waste products then become part of the urine in the kidneys. Urine leaves the kidneys through narrow tubes called ureters, which empty into the bladder. When your cat urinates, the bladder is emptied through a tube called the urethra. Feline urinary problems are usually grouped into conditions of the lower urinary tract (the bladder and urethra) and the upper urinary tract (the kidneys and ureters).

Urinary problems can make it difficult for your cat to store or pass (eliminate) urine. Storage problems result in inappropriate leakage of urine; causes of storage problems include bladder muscle problems, nervous system problems, and injury to the urinary system. Elimination problems involve a decreased ability or an inability to urinate; causes include blockage by stones or growths, muscle problems, and nervous system problems. Cats with elimination problems usually try to urinate often but only release a small amount of urine. Urinary blockage is an emergency requiring immediate veterinary attention.

Signs and Diagnosis

A thorough examination and history of your cat can help your veterinarian determine whether your cat has a urinary problem. Ultrasonography, radiography (x-rays), and urine and blood testing may help make a diagnosis.

Here are some signs that your cat may have a urinary problem:

- Frequent trips to the litterbox, where your cat may or may not urinate
- Urinating outside the litterbox
- Blood in the urine
- Crying or straining when urinating
- Inability to urinate
- Urinating smaller amounts
- Disinterest in food or water
- Hiding
- Disinterest in being handled
- Vomiting
- Abdominal pain
**Treatment**

There are several effective treatments for feline urinary problems. Treatment may include surgery, a special diet, and/or medication, depending on the cause of the problem. Cats undergoing treatment need to be monitored and tested regularly.

**Prevention**

To help ensure that your cat’s urinary system is healthy, become familiar with your cat’s eating, drinking, and litterbox habits. Your cat is a creature of habit, so he or she probably goes to the litterbox around the same time every day. A change in your cat’s habits may be a clue that something is wrong. Watch out for anything suspicious, such as a litterbox that isn’t being used.

The following can help maintain your cat’s urinary system:

- Supply plenty of fresh water, and keep the bowl clean.
- Provide an adequate number of clean litterboxes (one per cat plus one more litterbox in multicat households).
- Encourage your cat to play and exercise, and keep him or her at a healthy weight.
- Bring your cat to your veterinarian at the first sign of trouble.
Feline Urine Marking

- Feline urine marking is a normal form of communication between cats.
- Cats mark with urine to claim their territory.
- Urine marking occurs most commonly in male cats that have not been neutered.
- A cat that is urine marking typically stands upright with its tail erect, and sprays a small amount of liquid on walls and other vertical surfaces.
- A diagnosis is made once other medical and behavioral reasons for urinating outside the litterbox have been ruled out.
- Neutering or spaying the cat is the most effective treatment.
- Treatment also may include methods to reduce stress in the cat’s environment and/or anti-anxiety medications.

What Is Feline Urine Marking?

Feline urine marking is a behavior in which cats mark a location with urine to notify other cats of their territory. Often it occurs near door and windows as a way to communicate to neighborhood tomcats wandering through the yard. Although this is a normal behavior in cats, most owners consider it unacceptable when it occurs in the house. Any cat can exhibit marking behaviors, but it tends to occur in male cats that have not been neutered.

Although hormones may be behind urine marking, stress and anxiety also are causes. Any changes in the household, such as the addition of other pets, workers in the house, or a recent vacation by the owner, may compel the cat to reassert its territory.

What Are The Signs Of Urine Marking?

A cat that is urine marking typically stands upright with its tail erect, and sprays a small amount of liquid on walls and other vertical surfaces. This is different than a cat that is simply urinating outside the box, and not attempting to mark its territory. In those cases, the cat will squat, and eliminate urine on a horizontal surface. Occasionally, a marking cat may spray on horizontal surfaces, such as bedding or laundry.

How Is Urine Marking Diagnosed?

Your veterinarian will probably want to check a urine sample to make sure that your cat doesn’t have a medical reason for urinating outside the litterbox. If the urinary tract is inflamed, infected, or irritated by urinary crystals, there are treatments that can relieve the signs and encourage the cat to return to the litterbox. Some other medical conditions, such as bladder stones, diabetes, and kidney disease, also can cause a cat to urinate outside the litterbox. Your veterinarian may recommend additional tests, such as blood work and x-rays, to investigate these and other possibilities.

There may be other reasons why your cat is eliminating outside the litterbox. Cats are fastidious creatures, and may avoid the box if it is not clean enough, if they don’t like the scent or texture
of the litter, or if the box is located near a high traffic area in the house. Again, in these cases, the cat is usually urinating on horizontal surfaces, rather than on vertical surfaces.

Once other causes of inappropriate elimination are ruled out, a diagnosis of feline urine marking may be made.

**How Is Urine Marking Treated?**

The most effective treatment for urine marking is to neuter or spay your cat, if it has not been done already. Ninety percent of male cats stop marking once they have been neutered.

Reducing stress in the cat’s environment may help, as well. Synthetic pheromone products are available from your veterinarian in spray or plug-in diffuser forms. These products have a calming effect on many cats.

To discourage neighborhood cats from approaching doors and windows, consider using a spray deterrent that is activated by motion detectors. You also should supply your cat a place to escape from children or other pets in the household, such as a room, cubby, or perch. If all else fails, ask your veterinarian if anti-anxiety medications may be appropriate for your pet.
Feline Vaccine Recommendations

- Vaccines are important for preventing infectious diseases.
- Over the years, the widespread use of vaccines has saved the lives of millions of cats.
- Vaccines are safe and generally well tolerated by most cats.
- Vaccine selection and scheduling should be an individualized choice that you and your veterinarian make together.

Companion animals today have the opportunity to live longer, healthier lives than ever before. One of the main reasons for this is the availability of vaccines that can protect pets from deadly infectious diseases. Over the past several decades, the widespread use of vaccines against diseases like panleukopenia and rabies has saved the lives of millions of cats. Unfortunately, infectious diseases still pose a significant threat to cats that are unvaccinated; so, although vaccine programs have been highly successful, pet owners and veterinarians cannot afford to become complacent about the importance of keeping pets up-to-date on their vaccinations.

Why Does My Cat Need Vaccines?

Vaccines are one of our most important tools against infectious diseases. Some of these diseases, such as rhinotracheitis, can be transmitted directly from cat to cat. If your cat goes outside or is ever around other cats, such as at a grooming salon or day-care facility, your cat may be exposed to infectious diseases. Even cats that appear healthy may be sick, so keeping your cat’s vaccines up-to-date is a good way to protect your pet from illness.

Even if your cat doesn’t have contact with other cats, some diseases can be transmitted indirectly. For example, panleukopenia infection is potentially fatal and is spread through contact with body fluids (mostly urine and feces) from an infected cat. Once a cat is infected with panleukopenia, it may shed virus in body fluids for a few days or up to 6 weeks. Panleukopenia can live in the environment (such as on contaminated bedding, food bowls, litterboxes, and other items) for a very long time, so contact with contaminated objects can spread the infection to other cats. Additionally, if a pet owner is handling an infected cat, failure to change clothes and wash hands thoroughly with the correct disinfectant can expose other cats to the disease. So even if your cat never has direct contact with a cat infected with panleukopenia, exposure can occur in this way. Even completely indoor cats that have limited contact with other animals are not completely protected from infectious diseases.

How Do Vaccines Work?

Although there are many types of vaccines, they tend to work through a similar principle. Most vaccines contain a very small portion of the virus or bacterium that is the infectious agent. Some vaccines contain small quantities of the entire virus or bacterium, whereas others contain particles that are part of the infectious organism. When this material is introduced into the body in a vaccine, the body’s immune system responds through a series of steps that include making antibodies and modifying other cells that will recognize the target organism later. When the vaccinated individual encounters the “real” organism later, the body recognizes the organism and reacts to protect the vaccinated individual from becoming sick.
Are Vaccines Safe?

All of the available vaccines for cats have been thoroughly tested and found to be safe when administered as directed. Most cats tolerate vaccines very well, although reactions can occur in some cases. Some cats can seem a little “tired” after receiving vaccines. Notify your veterinarian if your cat develops breathing problems or vomiting after receiving a vaccine. You should also tell your veterinarian if your cat has ever had a problem in the past after receiving a vaccine.

Which Vaccines Does My Cat Need?

Many vaccines are available for cats, but every cat does not need to receive every available vaccine. So how do you know which vaccines your cat should have? The American Association of Feline Practitioners (AAFP) has developed a summary of vaccine recommendations to help veterinarians clarify how to best protect cats through the use of vaccine programs. AAFP evaluated the available vaccines and categorized them to provide guidelines on how commonly they should be used. Vaccines are categorized as core, non-core, or not recommended. A core vaccine is one that all cats should receive. The core vaccines for cats are rabies, rhinotracheitis (feline herpesvirus-1), panleukopenia (feline distemper), and calicivirus. Non-core vaccines are optional ones that cats can benefit from based on their risk for exposure to the disease. Examples include the vaccines against feline leukemia virus and feline immunodeficiency virus (or feline AIDS). Categorization of a vaccine as “not recommended” does not mean that the vaccine is bad or dangerous. This designation simply means that widespread use of the vaccine is not currently recommended.

Because core vaccines are recommended for all cats, your veterinarian will recommend keeping your cat’s vaccines against rabies, rhinotracheitis, panleukopenia, and calicivirus up-to-date at all times. The decision regarding non-core vaccines should be made after you and your veterinarian have discussed the vaccines in question and whether your cat might benefit from receiving them. Factors to consider include your cat’s lifestyle (how much time your cat spends outside), where you live, where you travel with your cat, and how often your cat has contact with other cats. Remember that vaccine recommendations can change: if your cat’s lifestyle changes, your veterinarian may want to discuss modifying the vaccine recommendations to ensure that your cat is well protected.

What Is the Recommended Schedule for Vaccines?

Kittens generally receive their first vaccines when they are around 6 to 8 weeks of age (depending on the vaccine and manufacturer’s recommendations). Booster vaccines are generally given 3 to 4 weeks later. Your veterinarian can discuss with you which vaccines your kitten will receive at your “kitten checkup” visits. Vaccines are generally repeated a year later.

Although kittens are considered especially vulnerable to some diseases, it is also very important for adult cats to be up-to-date on vaccines. Traditionally, many vaccines were repeated yearly, during regular checkup examinations. However, research has shown that some vaccines can protect cats for longer than 1 year. In light of research findings, the AAFP guidelines note that some vaccines can be given every 3 years. The decision regarding how often your cat needs
vaccine boosters depends on several factors, including your cat’s overall health status and risk for exposure to the diseases in question. Your veterinarian may recommend annual boosters after considering your cat’s lifestyle and disease exposure risk. The decision regarding how often to administer any vaccine (annually, every 3 years, or not at all) should be an individualized choice that you and your veterinarian make together.

Vaccination remains one of the most important services your veterinarian offers, and although vaccination is a routine procedure, it should not be taken for granted. It also allows a regular opportunity for your veterinarian to perform a physical examination, which is very important for keeping your cat healthy. Protecting patients is your veterinarian’s primary goal, and developing an appropriate vaccine protocol for your pet is as important as any other area of medicine.
First Aid and Your Pet

- **One:** Remain calm and try to keep your pet calm. Approach your pet with caution. An animal in pain may bite or scratch.
- **Two:** If some sort of stabilization is possible (for example, direct pressure to slow down bleeding), try it—ideally while on the way to the veterinarian. If this is not possible, just get to the veterinarian as quickly as possible.
- **Three:** Even if your pet seems all right after an injury, take him or her to the veterinarian. Injuries involving an eye, the head, a large wound, breathing difficulty, sudden or severe swelling, pain, significant blood loss, or trauma (such as a car accident) should be seen immediately.

Dealing with an injured pet can be scary and frustrating. In many cases, you don’t know how bad the injury is, and your pet may not be acting normally. If your pet is injured, the first thing you need to do is try to remain calm. If possible, try to determine how severe the injury is, but remember that caution is extremely important when approaching an injured animal. Any pet, no matter how calm or friendly he or she may usually be, can bite or scratch when in pain.

While all injuries should be seen by your veterinarian as soon as possible, injuries involving an eye, the head, a large wound, difficulty breathing, sudden or severe swelling, pain, significant blood loss, or trauma (such as a car accident) should be seen immediately. Even if your pet appears to be normal after an accident, it’s possible for him or her to have internal injuries that you can’t see, so it’s important to go to your veterinarian as soon as possible.

**What to Do Before Transporting Your Pet**

In some cases, it’s obvious that your pet needs immediate transportation to your veterinarian for treatment. To reduce the risk of greater injury, however, you first need to stabilize your pet for transport.

If you think your dog may snap or try to bite because of pain, make a makeshift muzzle by wrapping something around the snout to hold the mouth closed. Be sure not to obstruct the nostrils! A necktie, stocking, belt, or long sock may work well. Wrap the muzzle, but don’t tie a knot—you may need to get it off in a hurry. If your pet is panting heavily or having problems breathing, don’t try to muzzle. Cats should not be muzzled.

If your pet is unable to move, you should handle him or her as little as possible to avoid further injury. Gently slide the pet onto a flat board, such as a piece of plywood covered with a blanket, and loosely strap him or her in place with tape or rope for transportation. For less serious injuries, try to scoop the pet up into a large blanket or towel and head for the car. If your cat becomes aggressive, use a towel or blanket (and thick leather gloves, if possible) to scoop him or her into a box or other sturdy container that restricts movement but has plenty of airflow.

**Bleeding**
If there is no apparent bleeding, take your pet to the veterinarian immediately. If there is quite a bit of bleeding, apply direct pressure to the wound. Sterile gauze is the best option, but a clean cotton T-shirt will also work.

Hold the material firmly in place until the blood clots. If the bleeding is on a limb or paw and it does not slow down after direct pressure, make a makeshift tourniquet and tie it between the wound and the heart. A tourniquet is simply something that wraps or ties around an area. It should be snug enough to compress the vessels and slow down blood flow, but not so tight that it is painful or can damage muscles or nerves in the area. You can use some of the same things you might use for a makeshift muzzle—a stocking, necktie, belt, or long sock will work. Be sure to loosen the tourniquet for 20 seconds every 5 minutes. Only use a tourniquet if absolutely necessary. A misapplied tourniquet can result in permanent disability or even the need for amputation. Never apply a tourniquet to your pet’s neck or tail.

Signs of internal bleeding aren’t always obvious, but they can include blood running from the nose, mouth, or rectum; coughing blood; blood in the urine; pale gums; or a rapid or weak pulse. In this case, minimize handling to prevent further damage, and keep your pet as warm, still, and quiet as possible on the way to the veterinary clinic.

**Fractures**

Without radiographs (x-rays), it may not be possible to tell if your pet has a fracture (a broken bone). If a limb is hanging or dangling, a fracture is likely. If your pet has a fracture, rest him or her on a flat, transportable surface, such as a piece of wood or tarpaulin, padded with blankets. You should not try to set a fracture. If you don’t know exactly where the break is (and how bad), you can make things worse. If a leg is clearly broken and the fracture is below the knee or wrist, you can try to wrap the area, first with cotton padding, then with something long and flexible, such as a magazine. This makeshift splint should extend one joint above and below the fracture. Secure it with tape and ensure that it is loose enough to maintain blood flow. If the fracture is above the knee or elbow, it will be very difficult to immobilize without making things worse, so just try to position the leg close to the body and get the pet to a veterinarian as quickly as possible. In most cases, it is best to handle the limb as little as possible and focus instead on getting your pet to the veterinary hospital.

If the injury is to an area that isn’t a limb, such as the spine, ribs, or hip, immobilize your pet as much as possible, carrying him or her on the transport that you created until he or she can be examined by your veterinarian.

Any injured animal, no matter how calm or friendly he or she may usually be, can bite or scratch when in pain, so use caution in handling an injured pet.

**Burns**

If your pet is burned with chemicals, flush the area immediately with large quantities of cool water. For burns from a heat source (fire, stovetop, etc.), gently flush with cool water or gently apply an ice pack wrapped in a soft towel.
Shock

Often, injuries can cause your pet to go into shock. The signs of shock can vary and may include a weak or forceful pulse, shallow or deep breathing, nervousness, and a dazed appearance. If your pet is in shock, keep him or her still, quiet, and warm and get to a veterinarian right away. If your pet is unconscious, keep his or her head level with the rest of the body and watch for signs of vomiting. If vomiting occurs, be prepared to tilt the head slightly below the rest of the body to prevent inhalation of the vomit, then return the head to the level position.

An Ounce of Prevention

To avoid panicking during a pet injury, prepare yourself ahead of time. Assemble a first aid kit that includes essential items like sterile gauze and bandage material, towels, and a thick blanket. In addition, know when your veterinarian’s office is open and the location of the nearest emergency clinic that is open after hours. Keep this information, including phone number and address, available where it’s easy to find.
Flea Allergy Dermatitis (FAD)

- Flea allergy dermatitis (FAD) is a severe allergic reaction to the bite of a flea.
- FAD can cause intense itching and painful skin wounds.
- Left untreated, affected animals can develop secondary skin infections.
- FAD can be treated by controlling fleas on the pet and removing fleas from the pet’s environment.
- Corticosteroids and antibiotics may be prescribed to treat itching and secondary skin infections.

What Is Flea Allergy Dermatitis?

Flea allergy dermatitis (FAD) is a severe allergic reaction to a flea bite. Both dogs and cats can develop FAD. Affected pets have an extreme allergic reaction to certain proteins in the flea’s saliva, which the flea injects into the pet’s skin during biting and feeding. Some pets are so allergic that even a single bite can cause a reaction.

FAD makes pets feel miserable, and if left untreated, the associated severe itching and inflammation can lead to excessive scratching and chewing that can damage the skin. Secondary bacterial or fungal infections can develop as a result.

What Are the Signs of Flea Allergy Dermatitis?

Discomfort and itching are among the first signs of FAD. FAD can be more severe during warm/humid weather, when fleas are more active. However, if a pet’s home environment is infested with fleas or the pet lives in a place that is warm year-round, FAD can be a chronic, year-round problem.

Affected animals may scratch, bite, lick, and chew excessively at itchy and inflamed areas. Red, oozing lesions called *hot spots* may develop in areas where the scratching is most intense—typically on the rump, tail, and legs. Affected dogs typically exhibit thinning of the hair along the rump and the base of the tail. Affected cats can remove large areas of hair and develop scabs that can cover most of their body.

Other signs include:

- Skin inflammation
- Hair loss
- Scabs
- Oozing or crusted sores (hot spots)
- Darkening or thickening of affected skin
- Unpleasant odor (resulting from secondary infection)

Diagnosis of Flea Allergy Dermatitis
Diagnosis is typically made through examination and on finding evidence of fleas. However, because a single bite can cause a reaction and because many pets, particularly cats, can do an excellent job of grooming fleas off of themselves, evidence of fleas may not be found. Allergy testing can help determine whether the pet has a sensitivity to flea saliva. Because pets that are allergic to fleas are often allergic to other substances, additional allergens may be tested for as well.

**Treatment and Prevention**

The only truly effective way to treat FAD is to completely prevent flea bites by removing fleas from your pet and its environment. Effective treatment targets adult (biting) fleas, but many products also target the other life stages of fleas (such as eggs and larvae), which can live in the environment and mature into adult fleas.

There are many safe, effective, and easy-to-administer flea-control products. These products are typically administered by applying the medication as a fluid directly to the animal’s skin—generally between the shoulder blades or at the back of the neck. Your veterinarian may recommend more than one product to most effectively kill fleas and break the flea life cycle.

Once an infestation is established in your home, fleas can be very difficult to eliminate. You may need to treat your pet repeatedly. In addition, fleas must be completely removed from the affected pet’s environment. Therefore, all other animals in the house must also be treated with flea-control products, and the house (and possibly the yard) may need to be treated with flea-control products as well.

Vacuuming rugs, throwing out old pet bedding, and laundering other items may also be recommended by your veterinarian to help remove fleas from your pet’s environment. Because many species of wildlife carry fleas, it may also be recommended that you secure your home and yard to prevent wildlife from inadvertently re-infesting your pet’s living and exercise areas.

Secondary skin infections that develop as a result of FAD may be treated with antibiotic or antifungal medications. In addition, your veterinarian may prescribe a short course of corticosteroids to reduce inflammation and itching so that irritated areas may heal.

There are more than 2000 species of fleas, but the one that most commonly afflicts dogs and cats is the cat flea (*Ctenocephalides felis*).
**Flea and Tick Prevention**

- Fleas and ticks are external parasites that can cause extreme discomfort and serious illness in pets and even people.
- Fleas and ticks are easily prevented from bothering your pet through the use of safe, easy to administer, effective products.
- Parasite prevention also may require treating your home and yard and keeping pets out of areas where fleas and/or ticks are likely to lurk.
- Flea or tick control products meant for dogs should never be used on cats and vice versa.

**What Are Fleas and Ticks?**

Fleas and ticks are external parasites that can cause extreme discomfort for your pet and can also cause serious diseases.

**Fleas**

Fleas are insects that are ubiquitous in the environment—meaning they can be found almost everywhere. There are more than 2000 species of fleas, but the common cat flea (*Ctenocephalides felis*) is the one that most commonly afflicts dogs and cats.

A disease of concern that can be caused by fleas is flea allergy dermatitis (FAD), which is a severe allergic reaction to flea bites. Some pets are so allergic that even a single bite can cause a reaction. FAD makes pets miserable. In severe cases, it can cause severe itching and inflammation that, if left untreated, can lead to excessive scratching and chewing that can damage the skin. Secondary bacterial or fungal infections can develop as a result.

Fleas can also play a role in transmitting parasites, such as tapeworms, and bacterial diseases, such as cat scratch fever (bartonellosis), to humans.

Finally, in very severe infestations, particularly in old, ill, or young animals, fleas can remove so much blood through feeding that they can weaken the animal.

Fleas are prevalent throughout the United States. They prefer warm, humid conditions, so infestations are typically worst during mid to late summer and early fall. In some parts of the country, they can be a significant problem year round. Even during the cooler months, fleas can survive very well indoors once an infestation has been established.

**Ticks**

Ticks are not insects, but they are closely related to spiders, scorpions, and mites. There are approximately 80 tick species found in the United States, but only a handful of them are of real concern to pets and people. Some of these include the brown dog tick (*Rhipicephalus sanguineus*), the deer tick (*Ixodes scapularis*), and the American dog tick (*Dermacentor variabilis*). The brown dog tick is the only species that can complete its entire lifecycle on a dog and can infest homes and kennels.
Tick bites can be painful and irritating, but the real concern with ticks is the number of serious diseases they can transmit, such as Lyme disease, babesiosis, anaplasmosis, ehrlichiosis, and Rocky Mountain spotted fever. These diseases can cause significant illness and even death in both pets and people.

Ticks are found in virtually every region of the United States. They are most prevalent in the early spring and late fall, although some species are well adapted to temperature extremes and can be found any time of year. In general, however, they prefer dark, moist, brushy places in which to lay their eggs.

**How Do I Know If My Pet Has Fleas and/or Ticks?**

Larger tick species can typically be seen or felt in the hair coat, especially once they are engorged after feeding. Deer ticks, on the other hand, are very tiny—about the size of the head of a pin in some stages—and can be harder to see.

Repetitive scratching is a telltale sign that your pet may have fleas. Adult fleas can be identified on the pet, but fleas in other stages of their life cycle (eggs, larvae, and pupae) can be harder to find. Adult fleas are tiny and can be hard to see, but flea combs can be used to remove fleas as well as flea dirt. Flea dirt is essentially flea feces, which is digested blood. To check your pet for fleas, run a flea comb through your pet’s fur and dump any hair and debris onto a white paper towel. Dampen it slightly with water. Any small, dark specks that stain the towel red are a clear indication your pet has fleas. Finally, excessive grooming is also a sign of a potential flea problem. Infested cats will groom themselves repeatedly in an effort to remove fleas.

**How Do I Prevent Fleas?**

There are many safe, effective, and easy to administer flea control products. These products are typically administered orally in tablet (or liquid) form or topically by applying the medication as a fluid directly to the animal’s skin—generally between the shoulder blades or at the back of the neck. Some flea control products are only active against adult fleas, whereas other products can also target other stages of the flea life cycle, such as eggs and larvae. In some cases, your veterinarian may recommend more than one product in order to most effectively kill fleas and break the flea life cycle.

Once an infestation is established, fleas can be very difficult to get rid of. You may need to treat your pet repeatedly. In addition, fleas must be completely removed from the affected pet’s environment. Therefore, all other animals in the house must also be treated with flea control products, and the house and yard may need to be treated as well.

Vacuuming rugs, throwing out old pet bedding, and laundering other items may also be recommended by your veterinarian to help remove fleas from your pet’s environment.

**How Do I Prevent Ticks?**
There are many safe, effective, and easy to administer tick control products. Many of the major flea control products also have formulations that will help prevent ticks. These products are typically administered topically by applying the medication as a fluid directly to the animal’s skin—generally between the shoulder blades or at the back of the neck.

Prevention also includes keeping pets out of “tick habitats,” such as heavily wooded areas or tall grass. As much as possible, create tick-free zones in your yard by keeping grass mown short and bushes cut back. Ticks like moist areas, so remove leaf litter from around your house. If necessary, you may need to treat your backyard with a pesticide to reduce the number of ticks.

Finally, make a habit of performing a “tick check” on your pet at least once a day, especially if he or she has any access to wooded or grassy areas where ticks may lurk. If you find a tick, grasp it with a pair of tweezers as close down to the mouthparts as you can reach. Exert a gentle, steady pressure until the tick lets go. There are also tick removal tools that are very easy to use. Never remove a tick with your bare fingers. Avoid using lighter fluid, matches, or other products that may irritate the skin or cause other injuries to your pet. When in doubt, ask your veterinary care team for assistance removing the tick.

Never use flea control products intended for dogs on cats. Some medications can be highly toxic to cats. Only use products on the species for which they are intended, and follow all label instructions.
Fluorescein Stain

- Fluorescein stain can be applied to the eye to detect injuries involving the cornea.
- Corneal scratches, ulcers, or other defects can be diagnosed using fluorescein staining.
- Performing a fluorescein stain takes only a few minutes and is not painful for your pet.

What Is a Fluorescein Stain?

A fluorescein test is a test that can help detect injuries to the cornea, which is the clear, thin layer of tissue that covers the front of the eye. The cornea must remain transparent to support vision, but this transparency makes detecting scratches or other injuries on the cornea very difficult because they are invisible.

Fluorescein is a green-tinted dye that fluoresces (glows) under blue light. A small amount of this dye applied to the surface of the eye (on top of the cornea) can be used to detect corneal injuries.

How Is a Fluorescein Stain Performed?

Fluorescein dye is available in several formulations, including a small paper strip that can be placed directly onto the eye and a liquid solution that can be applied into the eye.

Corneal injuries may be invisible, but they tend to be very painful. Animals with these injuries may have red, swollen, watery eyes, or may squint or rub their eyes. If your veterinarian suspects your pet may have an injury on the cornea, a small amount of fluorescein dye is applied to the surface of the cornea. If the corneal surface is intact, the fluorescein dye will not stick to the eye. However, if there is a scratch, ulcer, or defect on the cornea, the dye sticks to the injured area and can show your veterinarian where and how serious the injury is.

Performing a fluorescein stain takes only a few minutes and is not painful for your pet.

What Does a Fluorescein Stain Tell Your Veterinarian?

Fluorescein staining can tell your veterinarian if your pet has a scratch, ulcer, or other defect on the surface of the cornea. If there is an injury, the results of this test can show your veterinarian where and how serious the injury is.

Because the tear ducts in the eye normally drain through the nostrils, the fluorescein stain test can also help determine if your pet’s tear ducts are clogged. If the tear duct system is functioning normally, the green-colored dye is visible at the nostrils within a few minutes after being applied to the eye. If the dye is not visible at one or both nostrils, this could indicate clogging or other problems with the tear ducts.

Fluorescein staining is not painful and can provide valuable information about the condition of your pet’s eye and tear duct system.
Follow-up Examination

- A follow-up examination is a physical examination that is usually performed a few weeks after the initial examination.
- The examination is scheduled to evaluate the effectiveness of treatment, assess healing after a surgical procedure, or monitor the progression of a disease.
- In addition to the examination, diagnostic tests, such as blood tests or radiography (obtaining x-rays), may be needed.

What Is a Follow-up Examination?

If your pet is being treated by a veterinarian, it’s likely that you will be asked to return for a follow-up examination. This physical examination is usually scheduled a few weeks after the initial examination and may be done for a number of reasons, such as:

- To evaluate the effectiveness of a treatment or medication
- To assess healing after a surgical procedure
- To monitor the progression of a disease
- To determine if a medication is being maintained at the proper blood level
- To modify the treatment, if needed
- To ensure that there are no side effects to treatment

Depending on your pet’s condition, your veterinarian may recommend additional diagnostic tests at this time, such as blood tests or radiographs (x-rays).

What Should I Do Between Examinations?

It is important for you to follow your veterinarian’s directions exactly, including giving all of the medications as directed. Many treatments fail because doses of medications such as antibiotics are missed or stopped prematurely. If you have difficulty administering a medication or if your pet shows signs of side effects, such as lethargy, vomiting, diarrhea, or pain, consult your veterinarian.

You should not discontinue treatment because it does not appear to be working. Some medications require time to take effect. Also, a medication that is effective in one animal may not be effective in the next. Your veterinarian may need to try different medications, and evaluate their effects, before arriving at the one that is best for your pet. A follow-up examination allows your veterinarian to assess your pet’s response to treatment and adjust treatment recommendations as needed.

What Are the Benefits of a Follow-up Examination?

A follow-up examination is important for the comfort and welfare of your pet. Missed follow-up examinations can result in recurrence or worsening of your pet’s condition. The follow-up examination will enable your veterinarian to evaluate your pet’s progress and modify treatment as necessary to ensure that your pet is healthy and comfortable.
Food Allergy

- A food allergy is an immune response to something in the pet’s diet that did not cause problems in the past.
- Food allergies commonly cause itchiness and/or vomiting and diarrhea in dogs and cats.
- Food allergies are diagnosed with an elimination diet trial.
- Long-term treatment can be very successful if the offending ingredient is avoided.

What Is a Food Allergy?

Food allergy (also called food hypersensitivity) refers to a type of physical reaction to food. Food reactions are classified into two categories: those that are the result of immune system stimulation and those that are not. Food allergy occurs when the immune system begins to overreact to ingredients that the pet has eaten with no problems in the past. Food intolerance occurs when what is eaten has a direct, negative effect on the stomach and/or intestines, such as spoiled meat, chewed up toys, food additives, and abrupt changes in diet. Food intolerance is not an immune reaction.

The list of known food allergens (substances that pets can be allergic to) is extensive and includes beef, eggs, poultry, dairy, lamb, pork, fish, corn, wheat, soybeans, preservatives, and dyes.

Overall, the immune system’s job is to find threats to the body and destroy them by sending signals to activate special cells. An allergy results when this system misjudges a safe substance, and the cells cause damage to the surrounding tissues. This is why animals with food allergies often have vomiting and diarrhea. Food allergies can also cause skin problems because the signals released may act in other parts of the body, too.

Signs of a Food Allergy

- Skin
  - Itchiness (all over or even just in a few areas)
  - Skin infections
  - Ear infections
  - Hair loss
- Stomach and intestines
  - Vomiting
  - Diarrhea
  - Abdominal pain
  - Weight loss

Diagnosis and Treatment

Many diseases can cause either gastrointestinal signs or itchiness, so your veterinarian will want to rule them out to diagnose a food allergy. Food allergies tend not to be seasonal, and signs are
usually seen year round. The most obvious indicator of food allergy is that the signs clear up when the responsible ingredient is removed from the diet.

An **elimination diet** is the only proven way to determine which food is affecting your pet. Elimination diets consist of ingredients that haven’t been offered to the pet in the past, called **novel ingredients**. Your veterinarian will prescribe a diet that contains only novel ingredients. The elimination diet can be thought of as a diagnostic test that may last up to 10 weeks. This test takes so long because the allergen may continue to stimulate your pet’s immune system for weeks after it is eliminated from the diet. The elimination diet will be the only food that your pet is allowed to eat during the trial period. During this time period, **no other food, treats, or bones may be fed to your pet**. Even regular medications, such as heartworm preventives, must be given in a nonflavored form. It may be difficult, but this is very important to help your veterinarian determine the food that is affecting your pet. If you want to give your pet a treat during this period, you can offer him or her a small amount of the same food that is being used in the trial. Talk with your veterinarian about this option.

Your veterinarian will probably also need to treat your pet for concurrent skin infections or diarrhea at the beginning of the diet trial because these problems may not resolve without medication.

If the skin and gastrointestinal problems resolve during the trial, your veterinarian may then “challenge” your pet’s immune system by feeding the previous diet to see if the signs come back. Sometimes, the diet used for the elimination trial may continue to be fed after the trial is over, if it is balanced and formulated to provide complete nutrition for your pet.
Foreign Body Surgery

- A foreign body surgery is a procedure to remove an object from a pet’s digestive tract that will not pass through on its own.
- Diagnosis of a foreign body is usually made by physical examination and radiographs (x-rays).
- This is typically an emergency procedure that must be performed before injury occurs to the esophagus, stomach, or intestines.

What Is a Foreign Body Surgery?

Pets aren’t picky eaters. It’s common for them to eat objects, such as string, toys, rocks, and articles of clothing. Smaller objects may pass through the digestive tract uneventfully. Objects that don’t pass through easily may cause obstructions that can damage or perforate the digestive tract, which can lead to death. A foreign body surgery is an emergency procedure to retrieve an object before it damages the esophagus, stomach, or intestines.

What Types of Objects Are Typically Involved?

Dogs are more likely to eat foreign objects than cats. Common foreign objects found in dogs include bones, rawhides, corn cobs, and fishhooks. Some types of glue are particularly troublesome, because if a dog chews on the glue bottle, the glue expands in the stomach and can be difficult to remove. Of course, large or sharp objects and those containing poisonous substances should be removed as soon as possible.

For cats, eating string (such as dental floss or yarn) is especially dangerous. String can become lodged in the digestive tract and cut through the tender tissue as the continual motion of the intestines attempts to push it along. While most hairballs generally pass through the digestive system, some may become large enough to cause a blockage.

What Are the Signs of a Foreign Body?

The signs may vary depending on the location of the foreign body. If the object is in the esophagus, the pet may gag, cough, salivate, or gulp as if attempting to swallow. If the object is in the stomach or intestines, the pet most likely will vomit and may be lethargic (tired) and/or have a loss of appetite, vomiting, or diarrhea.

How Is a Foreign Body Diagnosed?

In some cases, the veterinarian may be able to feel the object with his or her hands while gently pressing on the pet’s abdomen during a physical examination. Usually, radiographs, or x-rays, are required.

While some objects, such as bones and metal, are obvious on radiographs, others, such as clothing, are not. In these cases, the veterinarian may have the animal swallow barium, which is a liquid that is visible on radiographs. A series of radiographs enables the veterinarian to watch
the barium move through the digestive tract. The barium may actually surround the object and make it visible, or the barium may stop moving, indicating the possible location of the obstruction.

If an animal shows signs of having eaten a foreign object, but the radiographs are inconclusive, a veterinarian may recommend an exploratory surgery. While this surgical procedure may enable the veterinarian to locate and remove the foreign body, occasionally, no foreign body is found.

**How Is the Surgery Performed?**

In most cases, animals suspected of having a foreign body undergo an abdominal surgery under general anesthesia. Depending on where the object is, the veterinarian may need to open the stomach and/or the intestines to remove it.

If the foreign body is in the esophagus within the chest, the veterinarian may recommend endoscopy to remove the object. In this procedure, the animal is anesthetized, and a flexible tube with a camera is placed down the animal’s esophagus. The camera enables the veterinarian to see the object and manipulate prongs or a basket at the end of the tube to grasp and retrieve it.

The advantage of endoscopy is that it is noninvasive and your pet will require less recovery time. If endoscopy is not available, the veterinarian will need to open your pet’s chest.

**What Are the Risks and Benefits of the Surgery?**

There are always risks associated with anesthesia and surgery. Performing blood tests will provide the veterinarian with information that will help him or her stabilize the pet before surgery.

A foreign body surgery is an invasive procedure that involves opening the abdomen or chest, as well as making incisions into the digestive tract. In addition to the risk of infection, there is always the possibility that the sutured area of the incision may come apart, requiring the veterinarian to perform another surgery.

Without emergency surgery, however, an obstruction caused by a foreign body can be fatal. Prompt diagnosis and surgical treatment can help eliminate the problem and set your pet on the road to recovery.

The best way to prevent a foreign body surgery is to remove small or chewable objects from the floor and yard. Keep strings and rubber bands in boxes or drawers, and cover wastebaskets to prevent curious pets from eating the contents.
Fructosamine Testing

- A fructosamine test is a blood test that helps monitor diabetic patients.
- Checking a pet’s fructosamine level can help your veterinarian ensure that a pet’s diabetes is being adequately managed.
- To perform a fructosamine test, a small amount of a pet’s blood is taken and submitted to a laboratory for analysis.
- The fructosamine level is used to estimate a pet’s average blood glucose level over the previous 2 to 3 weeks.

What Is Fructosamine Testing?

Fructosamine testing involves checking the level of fructosamine in the blood, and this testing is one of the ways a diabetic pet is monitored. Fructosamine is a protein that binds very strongly to glucose (sugar) in the blood. Because fructosamine occurs in proportion to blood glucose, it can provide an accurate estimate of the amount of glucose in the blood. When fructosamine is measured, it helps determine the average glucose level for the previous 2 to 3 weeks.

Fructosamine testing is often the preferred method for monitoring the glucose level in cats because it is not affected by stress, which can cause a sharp increase in the blood glucose level in cats. Fructosamine monitoring can be used in combination with blood glucose curve monitoring (which is a series of single glucose level checks) and other tools to help monitor diabetic patients.

How Is Fructosamine Testing Performed?

For a fructosamine test, a small amount of blood is taken from the patient and submitted to a laboratory for analysis. Drawing blood generally takes only a few seconds, and the test result is usually available within a few days. The analysis measures the amount of fructosamine protein in the blood sample. The test results indicate whether the animal has excellent, good, fair, or poor glucose control.

What Are the Benefits of Fructosamine Testing?

Fructosamine testing is a helpful tool for estimating blood glucose control in diabetic patients. Because this testing checks the glucose level for the previous 2 to 3 weeks, the fructosamine level is not affected by the stress that may occur during an office visit or when the blood sample is taken. Pets, especially cats, can become extremely stressed when visiting a veterinary office for any reason. Stress may cause an abnormal increase in the blood glucose level. If a diabetic cat is stressed when the glucose level is checked, the stress-related increase in glucose can result in a high blood glucose reading that doesn’t represent the cat’s true blood glucose level.

Checking the fructosamine level is a good way to distinguish between falsely high glucose from stress and truly high glucose from uncontrolled diabetes.

Many veterinarians recommend periodically checking the fructosamine level of stable diabetic patients and of recently diagnosed diabetic patients that are being stabilized (with or without
insulin). Your veterinarian will discuss with you how often this testing should be done. Combining fructosamine test results with other information about your pet, such as appetite consistency, weight gain or loss, and frequency of drinking and urination, helps your veterinarian determine if a pet’s diabetes is being well managed. If your pet is receiving insulin, this information will help your veterinarian determine if the insulin dosage is acceptable or if an adjustment should be made. Sometimes, your veterinarian may recommend additional testing (such as urine testing or direct measurement of the blood glucose level) to see how well your pet is responding to diabetes management.
**Fungal Culture**

- A fungal culture test is a method of identifying the specific fungus that may be causing an infection in or on the body.
- Performing a fungal culture test poses minimal risk to your pet, and in many cases, the information your veterinarian gains from this test is very valuable.

**What Is a Fungal Culture Test?**

A fungal culture test is a method of identifying a specific fungus that is infecting an animal. Fungal infections are relatively common in cats and dogs and include conditions such as ringworm. Ringworm can cause hair loss, itching, and a skin rash, but in most cases it is treatable and not life threatening. However, there are other fungal infections that can cause serious illness (such as pneumonia) and death in cats and dogs.

Fungal organisms can enter the body in several ways. Sometimes, they can be inhaled or can invade the body through wounds in the skin. Ringworm is transferred from pet to pet (and from pets to people) through direct contact or contact with contaminated objects such as bedding. Once a fungus infects the body, it sometimes spreads to other areas. Ringworm tends to affect only the skin. However, other fungal organisms can infect the nasal passages, lungs, kidneys, liver, brain, and lymph nodes.

As with any other diagnostic test, results of a fungal culture test must be combined with physical exam findings, a medical history, and other information to assess your pet’s health status and determine the best treatment plan.

**How Is a Fungal Culture Test Performed?**

Performing a fungal culture test involves putting a sample of the fungal organism into a special substance (called *culture medium*) and allowing it to grow for a period of time so that the fungal species can be identified.

To perform a fungal culture test, your veterinary team must obtain a sample of the suspected fungal organism from your pet. Many types of fungi can infect dogs and cats, so the type of sample that must be obtained can vary. For example, ringworm is commonly diagnosed by taking hair or skin flakes from an affected area. However, if a fungal organism has invaded the respiratory tract (nasal passages, airways, lungs), samples may include mucus from the nose or a biopsy sample taken from the affected area.

If a fungus has invaded another area of the body (such as the liver, spleen, or lymph nodes), biopsy samples from these tissues, bone marrow samples, blood samples, or other tissue and fluid samples may be needed for fungal culture testing.

Once the test sample is obtained and placed into a culture medium, the specimen is submitted to a diagnostic laboratory for continued processing and identification of the organism. For ringworm, some veterinarians can perform the fungal culture testing in their office. Either way,
results are generally available within 3 to 10 days, depending on the organism and testing procedures.

**What Does a Fungal Culture Test Tell Your Veterinarian?**

Because there are so many types of fungal organisms that can affect dogs and cats, fungal culture testing is a good way to identify the exact species present and help select the most appropriate medication to treat the infection.

**What Is a Fungal Culture Test Used For?**

In many cases, a fungal infection can look like another type of disease or infection. Performing a fungal culture test helps your veterinarian determine if the problem is really a fungal infection or another type of infection, perhaps one caused by a bacteria or virus.

Often, a fungal infection occurs along with another type of illness. For example, if a dog has a bacterial skin infection, the damage to the skin can allow a fungal organism to invade the area and become part of the problem. This is commonly referred to as an *opportunistic infection*, meaning that the fungal organism took advantage of the existing skin problem to set up its own infection. Ear infections are also commonly accompanied by opportunistic fungal infections. Similarly, if a pet’s immune system is not functioning properly due to another medical problem, an opportunistic fungal organism can invade the body. Because fungal infections can be opportunistic, finding fungi in a culture test does not necessarily confirm a fungal infection as the primary problem. Your veterinarian will interpret this information along with clinical signs, medical history, and perhaps other diagnostic testing (such as x-rays, blood work, or bacterial culture testing) to confirm a diagnosis.

**Are There Risks Associated With Performing a Fungal Culture Test?**

Very few risks are associated with performing a fungal culture test, and your veterinary team will take precautions to ensure that your pet is not injured while a sample for the culture is being obtained. In the case of ringworm, sampling may simply involve plucking a few hairs from your pet or scraping the surface of the skin. If sedation is necessary (as for a biopsy), your veterinarian may recommend additional blood work or preanesthetic evaluation before proceeding. Your pet will be monitored closely while sedated to help ensure a safe recovery.

Once the culture specimen is obtained, all further processing is performed at the veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.

Performing a fungal culture test poses minimal risk to your pet, and in many cases, the information your veterinarian gains from this test is very valuable.
Gastrointestinal Parasites in Cats

- Gastrointestinal (GI) parasites can cause serious illness in cats; some parasites can also infect humans.
- Your veterinarian can recommend medications to treat and control GI parasites.
- Any new pet entering your home should be tested for parasites as soon as possible.

What Are Gastrointestinal Parasites?

Gastrointestinal (GI) parasites include any parasites that live in the stomach or intestines of a host. A variety of GI parasites affect cats. They range from roundworms and tapeworms, which are visible with the naked eye, to microscopic organisms like coccidia and *Giardia*. Regardless of their size, GI parasites can cause serious illness in cats and sometimes even death. Some parasites are even *zoonotic*, which means that humans can become infected. The most common GI parasites in cats are:

- **Roundworms**: Roundworms are visible with the naked eye and resemble small pieces of spaghetti. In humans, roundworms can cause *larva migrans*, an illness caused by migration of young worms through body organs such as the liver, lungs, and nervous system. Young roundworms may also travel to the eye, where they can cause blindness.
- **Hookworms**: These worms attach to the intestinal wall and suck blood and other nutrients from their hosts. Hookworms can cause severe blood loss and diarrhea in infected cats. Infective hookworm larvae in the environment can penetrate the skin and infect a new host. When this happens in humans, the condition is called *cutaneous larva migrans*. People with this condition may experience itchy skin lesions with a snakelike pattern.
- **Tapeworms**: Tapeworms are long, flat worms that are actually made up of numerous segments; each segment contains tapeworm eggs. Humans can become infected if they inadvertently eat tapeworm eggs or infected fleas (which can contain tapeworm eggs).
- **Giardia**: *Giardia* organisms are a single-celled parasites that live in the intestines. Fecal-contaminated water, food, or soil can be sources of infection.
- **Coccidia**: Coccidia are microscopic GI parasites. They can cause severe diarrhea in some infected cats.

How Do Cats Become Infected With Gastrointestinal Parasites?

In most cases, eggs or infective stages of GI parasites are shed in fecal material. Once parasites are in the environment, cats can be exposed through direct contact with feces or exposure to soil, water, or plants that have been contaminated with feces. Cats that share litterboxes can infect each other and reinfect themselves after treatment. Some GI parasite eggs, larvae, and cysts can remain in the environment for months to years.

Some parasites can infect small animals (like rodents), and cats become infected when they prey on these small hosts and eat them. If a mother cat is infected, some GI parasites can infect kittens during nursing.
Tapeworms are slightly different in that they can be transmitted by fleas. The immature stage of the tapeworm lives inside the flea. When a cat grooms a flea off of its hair, it eats the flea (and the tapeworm). The tapeworm then hatches inside the cat and continues its life cycle.

**What Are the Clinical Signs of Gastrointestinal Parasites?**

Diarrhea, vomiting, and weight loss can be among the clinical signs of GI parasite infection. However, many infected cats don’t show any clinical signs at all. The best way to tell if your pet is infected is to have him or her tested for parasites.

**How Are Gastrointestinal Parasites Diagnosed?**

Fecal testing can detect GI parasites in most cases. But even if testing doesn’t confirm parasites, your veterinarian may recommend treatment as a precaution; this is not harmful for your pet. Some parasites (like roundworms and tapeworms) can be seen in feces or vomit from an infected pet. Tapeworm segments sometimes cling to the hair around the anus.

**How Can I Treat and Prevent Gastrointestinal Parasites?**

Your veterinarian can recommend several safe and effective medications to treat GI parasites. Fortunately, many monthly heartworm preventive medications also control some of these parasites, but no single medication can treat and prevent all GI parasites. Here are some tips for protecting your cat:

- Use a monthly heartworm preventive that also targets GI parasites.
- Clean the litterbox frequently to reduce the risk of spread in a multicat household or reinfestation in a single-cat household.
- Cover sandboxes when not in use to discourage cats from depositing feces there.
- Encourage children to wash their hands after playing outside and before eating.
- Schedule regular checkups with your veterinarian, and bring a stool sample for parasite testing.
- Have any new pet entering the home tested for GI parasites as soon as possible.
- If possible, prevent your cat from killing and eating rodents and other small animals.
- Use effective flea control to reduce the risk of exposure to tapeworms.
Getting a Pet Sitter

- Finding a pet sitter who you like and trust may take time, so begin your search long before your trip.
- To find a pet sitter, ask your veterinarian, favorite pet store, or pet-owning friends for a referral. You can also check the two major professional pet-sitting organizations—the National Association of Professional Pet Sitters (www.petsitters.org) and Pet Sitters International (www.petsit.com)—for a list of member pet sitters in your area.
- Professional pet sitters should be bonded and insured.
- Most sitters charge per visit.
- Get everything in writing.

It’s important to have someone you trust care for your pet while you’re away. Keeping your pet at home in the care of a pet sitter will spare your pet the stress and health risks associated with boarding facilities. A pet sitter will not only feed and play with your pet but also water plants, bring in the mail, and take out the trash. Some sitters may also perform grooming or behavior training. A pet sitter can help your home appear to be lived in, which can deter burglars. If you don’t have a neighbor, friend, or relative who can care for your pet when you’re away, consider hiring a professional pet sitter. Knowing that your pet is being cared for by a professional pet sitter can add to your peace of mind while you’re away.

Finding a Pet Sitter

Finding a pet sitter who you like and trust may take time, so begin your search long before your trip. Pet sitters become booked early, especially during holidays and popular vacation times. If your pet has special needs, such as insulin injections, you’ll need to find a sitter who can attend to them.

To find a pet sitter, ask your veterinarian, favorite pet store, or pet-owning friends for a referral. You can also check the two major professional pet-sitting organizations—the National Association of Professional Pet Sitters (www.petsitters.org) and Pet Sitters International (www.petsit.com)—for a list of member pet sitters in your area. If necessary, you can check under “Pet sitters” in the Yellow Pages of your telephone directory. Set up appointments to interview some pet sitters.

The Interview

Prepare your questions in advance. Ask the pet sitter if he or she is bonded and insured; professional sitters should be. Ask what the sitter will do during each visit, and get it in writing. Ask how long the sitter has been in business and what experience he or she has with animals outside of pet sitting. Ask for a written list of references; if the sitter doesn’t provide this, look for a different sitter. Make sure to check all references. Ask if the sitter will be the only one caring for your pet; larger services sometimes use various sitters for one client, but the person you interview should be the only one making visits. Ask if there will be a written contract or agreement; everything should be in writing. If your pet requires a prescribed medication or treatment, ask if the sitter can administer it.
The sitter should ask you questions about your pet’s care, including feeding, cleaning up, waste disposal, and games/activities/walks that your pet enjoys. Show the sitter where you keep your pet’s food, treats, bowls, bags for waste, toys, carrier, leash, and litterbox. Make sure that you have enough food and other supplies to last while you are away. Be prepared to reimburse the sitter if he or she has to purchase necessary supplies while you’re away.

Inform the sitter of your pet’s illnesses or odd habits. For example, if your pet hides from strangers, where are his or her favorite hiding spots? Does your pet try to escape from the house? Does your pet bite? The sitter will want to see your pet at each visit; seeing an empty food bowl is not enough to confirm that your pet is all right.

A Test Run

If you want to try out a pet sitter before hiring him or her for a long trip, hire the sitter to take care of your pet for one or two visits, even if you don’t go away. Don’t tell the sitter that you’re testing him or her; just say that you have a day trip (which might only be going to work for the day). The sitter’s performance will determine whether you use him or her in the future.

Preparing to Leave

When you hire a pet sitter, the sitter will ask you to sign a contract that includes the cost, liabilities, and dates of coverage. Make sure the sitter knows how many visits you’ll need.

Discuss the terms of payment, including whether payment is required up front. Most sitters charge per visit.

Give the sitter your house key and the name and phone number of someone who has a spare key.

Give the sitter the phone number of where you’ll be and the name and phone number of your veterinarian. Make sure the sitter knows where your pet’s carrier is in case of an emergency. Sitters must occasionally handle house-related emergencies, so provide the phone number of someone in your area who might be able to help if you are unreachable.

Give your veterinarian a letter stating that while you’re away, the sitter has the authority to seek treatment for your pet, and you’ll take responsibility for any fees. Give your veterinarian your out-of-town phone number.

Make sure that the sitter gives you his or her contact information. Ask the sitter to call or e-mail you after the first visit to confirm that everything went well. This will reassure you that the sitter has you on his or her schedule. If you don’t hear from the sitter within a few hours after the first visit, contact the sitter for confirmation.

Returning

If no one else in your area has your house key, it’s a good idea to have the sitter keep it until you've returned. This way, you’ll know that the sitter or someone else will be able to care for
your pet even if you’re delayed. If your return will be delayed, call the sitter to ask if he or she can take care of your pet for the additional time. If the sitter can’t cover the extra time, he or she might have a backup sitter. When you return, let the sitter know that you are home.

**Pet-Sitter Organizations**

**National Association of Professional Pet Sitters**  
Web site: [www.petsitters.org](http://www.petsitters.org)  
Email: napps@ahint.com  
Phone: 856-439-0324  
15000 Commerce Parkway, Suite C  
Mt. Laurel, New Jersey 08054

**Pet Sitters International**  
Web site: [www.petsit.com](http://www.petsit.com)  
Phone: 336-983-9222

**Sittercity**  
Web site: [www.sittercity.com](http://www.sittercity.com)  
Phone: 888-748-2489

**Questions to Ask a Pet Sitter**

- Are you bonded and insured? (Professional sitters should be.)
- What do you do in a visit, and how long does your typical visit last?
- How long have you been in business?
- What experience do you have with animals outside of pet sitting?
- Do you have a written list of references? (If the sitter doesn’t provide this, look for a different sitter. Make sure to check all references.)
- Will you be the only one making visits? (The person you interview should be the only one making visits.)
- Will there be a written contract or agreement? (Everything should be in writing.)
- Can you administer my pet’s prescribed medication or treatment?
Getting Your Cat Back on Its Feet

- The most effective way to treat lameness is to obtain an accurate diagnosis of what is wrong.
- Always strictly follow your veterinarian’s recommendations for rehabilitation and recovery.
- It is critical to keep all of your pet’s recommended follow-up appointments so that your veterinarian can monitor your pet’s progress.

My Cat Is Limping—Now What?

The most effective way to treat lameness is to obtain an accurate diagnosis of what is wrong. If your cat is limping, don’t try to guess what the problem is or wait to see if it gets better on its own. A veterinarian can evaluate your cat by a thorough physical examination; if necessary, laboratory tests can be performed and/or radiographs (x-rays) obtained. Lameness can be caused by many things— infections, fractures, soft tissue injuries, and arthritis, to name a few. Paying attention to signs that your cat is uncomfortable and having your cat evaluated quickly can help prevent smaller problems from becoming bigger ones.

When your cat is lame from either an injury or a joint problem, the most important point to remember is to strictly follow your veterinarian’s recommendations for rehabilitation and recovery. In some cases, these instructions may help your pet recover fully and perhaps avoid surgery. However, if surgery is required to treat a severe injury or replace a joint, careful rehabilitation becomes even more essential. A fracture or joint replacement site that becomes re-injured or infected can leave fewer treatment options for your cat.

Sprains, Strains, and Minor Surgery

For minor injuries, such as a pulled muscle, your veterinarian may first try prescribing antiinflammatory/pain medications as well as exercise and activity restrictions for your pet. Exercise restrictions usually include keeping your cat in a small space—for example, a crate with a bed, a litterbox with a low side(s), and food and water dishes. Closely following such instructions can sometimes keep minor injuries from requiring more involved and expensive surgery and treatment. You should only give your cat medications that are prescribed by a veterinarian.

Traumatic Injury and Joint Replacement

Complicated injuries require a more involved recovery period. Typically, full recovery from a complex fracture repair or joint surgery, such as hip replacement, can take up to 2 or 3 months. Some cats need 6 months of careful monitoring and rehabilitation before they are completely recovered.

Typically, when a cat is recovering from any kind of complex joint surgery, complete cage rest is prescribed (see below). If your cat has a broken bone, recovery is more complicated, and your cat’s leg will be immobilized in a molded splint or cast for a minimum of 4 to 6 weeks.
If Your Cat Needs Surgery

While your cat is recuperating at home, you will need to give him or her any prescribed medicines. Do not allow your pet to scratch or chew at the sutures or bandage. An Elizabethan collar—also known as an “e” collar—may be necessary to prevent your pet from chewing the wound. You will also need to check the cast or surgical site daily. If you notice any of the following signs, contact your veterinarian immediately:

- Swelling of the limb or surgical site
- Skin rash or pressure sores (red, blistered, or raw areas)
- Unusual smell or leakage from the surgical site
- Your cat seems uncomfortable

You’ll also want to monitor your cat’s behavior, appetite, and water intake. If any of these seem unusual—for example, if your cat seems strangely tired or agitated—again, contact your veterinarian.

At the end of the cage rest period, your cat may need an additional period of continued exercise restriction. After the exercise restriction period is over, you will get instructions on how to gradually increase your cat’s allowed activity level.

Physical therapy, including massage, may also be helpful to your cat’s recovery and may be prescribed.

Follow Up

It is critical to keep all of your pet’s recommended follow-up appointments so that your veterinarian can monitor your pet’s progress. If sutures were used, your veterinarian may need to remove them. If a cast was placed, your veterinarian will want to check it periodically and eventually remove it. Radiographs (x-rays) or other tests may be scheduled to assess healing.

Keeping Your Caged Cat—and Yourself—Sane

It’s hard to know whether cage rest is harder on the cat or on the owner. Keeping your cat confined can be difficult, but no matter how “sad” or how much “better” he or she seems to be, it is vitally important to follow all the instructions you get from your veterinarian. You can make the time go faster for your pet by keeping him or her occupied with plenty of toys and an occasional low-calorie treat; turning on a radio or television for “company” when no one is home can also help. Daily grooming can also be a welcome distraction for some cats. If your cat craves company, keeping the crate in a high-traffic area where there is plenty of activity can be another way to keep him or her entertained. If your pet is shy or nervous, you might want to keep the crate in a quiet room to reduce stress.
Giardiasis

- *Giardia* is a parasite that is found worldwide and in every region of the United States.
- Giardiasis (the disease that *Giardia* causes) can cause diarrhea, appetite loss, and vomiting.
- Giardiasis is transmitted to dogs and cats through contact with infected feces or with water, food, or soil that has been contaminated by infected feces.
- Pets can often be infected with *Giardia* without showing outward signs.
- The risk of infection can be reduced by avoiding high-risk environments and behaviors.

What Is Giardiasis?

Giardiasis is a diarrheal disease that can affect many species, including dogs, cats, and humans. It is caused by *Giardia*, a single-celled parasite that attacks the gastrointestinal tract of infected animals. Among experts, there is some question about (1) the number of *Giardia* subtypes that can cause disease in animals and (2) the potential of these subtypes to also infect humans. While humans are susceptible to infection with *Giardia*, infection by the same subtypes prevalent in animals is thought to be exceedingly rare but remains a point of controversy and investigation.

*Giardia* is found worldwide and in every region of the United States. According to the Companion Animal Parasite Council, approximately 16% of symptomatic dogs and approximately 10% of symptomatic cats have been found to be infected with *Giardia*. The parasite lives in the intestines of infected animals and humans, and infected individuals pass the parasite in their feces, in the form of cysts, into the environment. These cysts can remain infective for months, especially when conditions are cool and humid/moist. The infection is transmitted when a host ingests water from a contaminated pond, lake, or stream or ingests contaminated food or soil. Outbreaks of giardiasis are more common when animals are housed in crowded conditions, such as a kennel or shelter.

Signs of Giardiasis

Clinical signs of giardiasis typically develop within 5 to 16 days after exposure to *Giardia*. In many cases, infected pets show no or slight signs of disease. Signs can include:

- Weight loss
- Inappetence (appetite loss)
- Diarrhea (sometimes severe and with a very bad smell)
- Flatulence
- Vomiting
- Lethargy (tiredness)

Because these signs can also be caused by many other diseases and health problems, a complete physical examination and diagnostic testing may be recommended.

Diagnosis and Treatment
Several types of fecal tests can be used to diagnose giardiasis. In some cases, tests may need to be repeated more than once to obtain a definitive result.

In most cases, the disease course is mild. Some animals—particularly puppies, kittens, or animals with underlying health conditions—may have more severe diarrhea and vomiting and may require supportive therapy with fluids and anti-nausea medications. Dehydration can be a serious concern in such cases.

There are medications for treating giardiasis, but the infection can be difficult to cure, so multiple courses of treatment may be necessary. Pets should be bathed throughout treatment to remove infective cysts from the haircoat. Because pets that have been treated have no “immunity” against future infection, these pets can easily be reinfected. Therefore, living areas should be disinfected; ammonia, dilute bleach solution, or steam cleaning can be effective. If there are other pets in the household, medications may be administered to them as a preventive measure. Contaminated soil can remain infective for months under certain conditions, so walking treated dogs in a different area may reduce the risk of re-infection.

**Prevention**

*Giardia* is common in the environment. Outdoor dogs and cats, working or hunting dogs, and pets that swim or have contact with potentially contaminated water can be at risk for exposure. Preventive measures should include regular removal of feces from the yard or kennel. As much as possible, prevent pets from drinking from, or swimming in, lakes, streams, and ponds.

Your veterinarian may recommend testing new puppies or kittens or adult pets for *Giardia* before they are introduced to your other pets.

While it is considered controversial whether humans and pets can be infected by the same subtypes of *Giardia*, it is always a good idea to wash your hands after playing with your pet or disposing of fecal material.
Glaucoma Testing

- Glaucoma is a painful condition that can lead to blindness if left untreated.
- Glaucoma is less common in cats than in dogs.
- The process of measuring the pressure inside the eye is called tonometry. This procedure is used to diagnose glaucoma.

What Is Glaucoma?

The structures inside the eye, such as the iris and lens, are surrounded by fluid. Normally, the movement of fluid through the eye is well controlled. However, sometimes the fluid doesn’t circulate normally, and fluid pressure builds up inside the eye. Glaucoma is the general term used to describe increased pressure inside the eye.

Glaucoma is much more common in dogs than in cats, and it can have many causes. Primary glaucoma is often an inherited genetic condition and has been identified in some dog breeds, such as basset hounds, Chihuahuas, and Siberian huskies. It tends to affect both eyes but may not occur in both eyes at the same time. Secondary glaucoma means that the pressure inside the eye was normal until another condition caused an increased pressure in the eye. Conditions that can cause secondary glaucoma include trauma to the eye, inflammation involving the eye, or a tumor inside the eye. Glaucoma can also be classified as acute (for example, occurring suddenly in response to trauma) or chronic (pressure builds up over a period of time).

Glaucoma can damage several important structures inside the eye, including the optic nerve, the retina (tissue at the back of the eye that is necessary for vision), and the cornea (the clear membrane on the front of the eye). Untreated glaucoma can also damage the lens of the eye, leading to cataracts. Injury to any of these structures, alone or in combination, can lead to permanent blindness.

Signs of Glaucoma

Whether glaucoma occurs suddenly or over a longer period of time, the clinical signs can be similar:

- Pain (squinting, rubbing the eye or face against the floor or against furniture)
- Cloudiness or “bluish” discoloration of the cornea
- Tearing
- Red eyes
- Increased sensitivity to light
- Dilated pupils
- Unequally sized pupils
- Decreased appetite (due to pain)
- Partial or complete blindness
- “Head shyness” (reluctance to have the face or head touched/approached, due to pain and reduced vision)
**How Is Glaucoma Diagnosed?**

The process of measuring the pressure inside the eye is called *tonometry*; this is the test used to diagnose glaucoma. There are several ways to perform tonometry, and they all involve using a *tonometer*—a device that is applied to the surface of the eye that can help your veterinarian estimate the amount of pressure inside the eye.

Before performing tonometry, your veterinarian will likely put a few drops of solution into your pet’s eye to numb the surface of the eye (the cornea). This will improve your pet’s comfort level during the tonometry procedure.

Traditional tonometers use a tiny weighted platform that is placed on the surface of the cornea. By recording how much the weighted platform causes the cornea to indent and by comparing the reading to a standard table of pressure readings, your veterinarian can tell if the pressure inside your pet’s eye is higher than it should be. This finding would be consistent with a diagnosis of glaucoma.

Newer tonometers use a very similar principle, are battery operated and are slightly easier to use and interpret. Depending on the situation, your veterinarian may want to perform a full physical examination before performing tonometry. Physical exam findings, combined with information from your pet’s medical history, can provide valuable information about the possible cause of the problem and how long it has been going on. In some cases, your veterinarian may want to refer you to a veterinary eye specialist (a veterinary ophthalmologist) for tonometry to be performed and for treatment to begin.

**How Is Glaucoma Treated?**

Treatment of glaucoma is aimed at controlling the flow of fluid through the eye and reducing the pressure inside the eye. Glaucoma treatment may involve medication (drops placed into the eyes, pills given by mouth, or injections given in the hospital); however, in some cases, surgery is recommended. Your veterinarian may recommend referral to a veterinary ophthalmologist for initial treatment or for long-term management.

**Can Glaucoma Be Prevented?**

Most cases of glaucoma are not easily preventable. Primary glaucoma (the inherited form) eventually affects both eyes (although not always at the same time), so if one of your pet’s eyes is affected, your veterinarian may recommend treating both eyes to help decrease the start of glaucoma in the normal eye.

Even though glaucoma may not be preventable in many cases, early diagnosis and treatment may reduce the risk of permanent damage and blindness. Regular wellness examinations are important, as some of the early signs of glaucoma may be detected during physical exam. Also, monitoring your pet at home for any signs of discomfort or changes in attitude can also increase the chance of identifying problems like glaucoma.
Glucose and Fructosamine Testing

- Blood glucose and fructosamine tests are helpful tools for monitoring diabetic patients.
- The results of glucose and fructosamine testing can help your veterinarian ensure that your pet’s diabetes is being adequately managed.
- Only small amounts of blood are required to perform these tests.

What Are Glucose Testing and Fructosamine Testing?

In diabetic patients, spot-checking the blood glucose (or blood sugar) is a quick and direct way to tell what the level is. The rapid result permits quick detection and management of a dangerously low or an extremely high level. However, blood glucose testing provides only a “snapshot” of the total blood glucose “picture.” The test result does not indicate what the blood glucose level will be 2 hours later, 8 hours later, or the next day. Your veterinarian needs to do other testing to obtain this information.

Performing a blood glucose curve can provide some of the missing information. A blood glucose curve involves repeatedly measuring the blood glucose level every 1 to 2 hours over a period of time—usually 12 to 24 hours. Like a regular blood glucose measurement, a blood glucose curve also directly measures the blood sugar, but (compared with a single blood glucose reading) it tells your veterinarian more information about how the blood glucose level may be changing over time.

Fructosamine testing involves checking the fructosamine level in the blood, and this testing is another way to monitor diabetic pets. Fructosamine is a protein that binds very strongly to glucose in the blood. Because fructosamine occurs in proportion to blood glucose, it can provide an accurate estimate of the amount of glucose in the blood. When the fructosamine level is measured, it helps determine the average glucose level for the previous 2 to 3 weeks. Fructosamine monitoring is often the preferred method for monitoring the glucose level in cats because it is not affected by stress, which can cause a sharp increase in the blood glucose level in cats. Your veterinarian may recommend using fructosamine level monitoring alone or in combination with blood glucose testing, glucose curve monitoring, and other tools to help monitor your diabetic pet.

How Are Glucose Testing and Fructosamine Testing Performed?

Spot-checking your pet’s blood glucose level takes only a few minutes and requires only a small amount of blood. Your veterinary team will likely ask you when your pet’s most recent meal was eaten and when the most recent insulin injection was given because these variables can affect the blood glucose reading. Blood glucose spot-testing is generally done during an outpatient visit.

Blood glucose curves require a brief stay in the hospital. Your veterinary team will generally ask about your pet’s feeding and insulin schedule so the same schedule (or one as close as possible) can be continued while your pet is undergoing the blood glucose curve. During the blood glucose curve, blood is drawn every 1 to 2 hours, and the blood glucose level is measured and recorded. The resulting chart or table shows how the blood glucose level has changed during the measuring
period. Some veterinarians perform a curve for 8 to 12 hours, and some prefer 24-hour curves. During this time, your veterinary team will try to keep your pet’s stress and anxiety to a minimum, as stress can affect the blood glucose level in some patients, especially cats.

Fructosamine testing is generally done during an outpatient visit and requires a small blood sample that is submitted to a laboratory for analysis. Drawing blood generally takes only a few seconds, and the test result is usually available within a few days. The analysis measures the amount of fructosamine in the blood sample. The test results indicate whether the patient has excellent, good, fair, or poor glucose control.

**What Are the Benefits of Glucose and Fructosamine Testing?**

Diabetes is a complicated illness, and there are many approaches to managing diabetes in pets. Whether your veterinarian prefers to use blood glucose spot-testing, a glucose curve, fructosamine testing, or a combination of these, he or she will consider these results along with other valuable information, such as appetite consistency, weight gain or loss, and frequency of drinking and urination, to determine if your pet’s diabetes is being well managed. If your pet is receiving insulin, this information will help your veterinarian determine if the insulin dosage is acceptable or if an adjustment should be made. Your veterinarian will also discuss with you how often monitoring tests should be repeated. Your veterinarian may recommend additional testing (such as urine testing) to see how well your pet is responding to diabetes management.
Grief in Dogs and Cats

- Based on observed changes in behavior, it is thought that some dogs and cats grieve after losing a close human or animal companion.
- Dogs and cats seem to show a wide variety of responses to losing a companion.
- As in people, signs of grief in pets usually improve with time. However, there are things you can do to help your pet through this difficult period.

Do Dogs and Cats Really Grieve?

Whether animals feel emotions in the same way people do is a mystery. However, their behaviors are commonly interpreted as reliable expressions of mood—for example, relaxed, fearful, or aggressive. Based on observed changes in behavior, it is thought that some dogs and cats grieve after losing a close human or animal companion. In 1996, the ASPCA conducted a study of mourning in companion animals and found that more than half of dogs and cats had at least four behavioral changes after losing an animal companion. Many of these changes, such as eating less and changes in sleep patterns, were similar to behaviors exhibited by grieving people.

If you have recently lost a pet and other pets in the household are acting differently, it is possible that they miss the deceased pet and are experiencing grief.

Signs of Grief

Like people, dogs and cats seem to show a wide variety of responses to losing a companion. Behavior changes observed in the 1996 ASPCA study included:

- Eating less
- Restlessness or sleeping less
- Acting sluggish or sleeping more
- Vocalizing (barking, howling, meowing) more
- Avoiding contact or play with other family members
- Becoming “clingy”
- Seeming disoriented or confused

However, these behaviors are also signs of illness in pets. If your pet is exhibiting any of these behaviors, call your veterinarian and schedule an appointment to rule out health problems.

Some animals appear to look for the missing pet, or, if the deceased pet was taken to the veterinarian to be euthanized, they may wait by the door or window for him or her to come home.

Other changes in behavior among surviving pets may reflect shifts in relationships, especially if the deceased pet was a dominant member of the household.

Helping Your Pet Deal With the Loss of a Companion
Again, as in people, signs of grief in pets usually improve with time. However, there are things you can do to help your pet through this difficult period.

- If your pet is eating less or is not eating, encourage him or her to eat by making food more appealing. For example, slightly warming canned food can make it smell better to pets. However, be very careful to not overheat food, which can burn your pet’s mouth. If your pet refuses to eat at all, call your veterinarian.
- Spend extra time with your pet, whether on walks, during grooming, or playing games.
- Provide distractions for your pet. Hiding toys in his or her favorite places and putting a little dry food inside a puzzle toy are a couple of examples. Try not to accidentally reward behaviors that you do not want to continue. For example, do not try to distract a howling pet with treats, or the pet may learn to howl for treats. Wait until the pet is quiet, and then give him or her your attention.
- If the deceased pet had a favorite blanket or toy, leave it in the house for a while so that other pets understand that the missing pet is not returning.

Because you are also feeling the loss of your pet, it can be hard to concentrate, and your behavior can affect your other pets. Spending extra time bonding with them can help both you and them.

Whether and when to get a new pet is a very personal decision. However, trying to quickly “replace” a pet’s companion is usually not recommended. Pets already in the household may regard a new arrival as an intruder. Consider whether you and your pets are ready for a new family member.
Grooming Your Cat

- Regular brushing can help keep your cat’s skin and haircoat healthy.
- Groom your cat when he or she is relaxed, and start with short sessions.
- Try to make grooming a pleasant experience for your cat. If your cat seems uncomfortable with being groomed, stop.
- Ask your veterinarian about the best way to care for your cat’s nails and teeth.

Grooming Basics

Cats are known for grooming themselves, but a little help is never wasted. Regular brushing can help keep your cat’s skin and haircoat healthy and can be another way to strengthen the relationship between you and your pet.

If you and your cat are new to grooming, start slow. Choose a time when your cat is relaxed, and keep sessions short (5 to 10 minutes). Give your cat plenty of petting and praise (and perhaps a treat) for good behavior. As you pet your cat, try to handle all parts of his or her body, including the feet, so that your cat becomes used to this activity. If at any time your cat seems uncomfortable with being handled or groomed, stop.

Brushing Your Cat

Brushing your cat helps to remove dirt and loose, dead hair and to prevent mats and tangles. How often you need to brush your cat depends on the length and thickness of his or her hair. Long-haired cats, like Persians, may need to be brushed daily. Short-haired cats may need brushing only weekly. By brushing your cat regularly, you will learn how often he or she needs to be brushed to keep his or her coat clean and tangle-free.

Regular brushing also helps reduce the amount of hair your cat swallows during grooming, which should lead to fewer hairballs.

There are several types of brushes and combs, including:

- **Bristle brushes**: Although these brushes can be used on all types of haircoats, the density, length, and stiffness of the bristles affect how well a specific brush works on a specific coat. Longer coats need longer, less dense bristles, and coarser coats need stiffer bristles.
- **Wire-pin brushes**: These brushes work best on medium to long, dense coats.
- **Slicker brushes**: These brushes have angled wire bristles. They can be used on all types of coats, and they help remove mats and tangles and make the haircoat look shiny.
- **Undercoat rakes**: These combs are useful for cats with double coats. They help thin out the undercoat, especially in the summer.

If you find a mat in your cat’s hair, do not pull on it. Pulling will be painful for your cat, and he or she will not want to be brushed again. Also, do not try to cut mats out—you may end up accidentally cutting yourself or your cat. Special brushes and combs are available to help split...
and remove mats; alternatively, consult your veterinarian or a reliable groomer. Sometimes mats must be professionally shaved.

**Bathing Your Cat**

Unlike dogs, most cats do not need to be bathed regularly. However, if your cat’s coat gets dirty or sticky, a bath may be necessary. Try to make bathing a pleasant experience for your cat: use warm (not hot) water, a mild shampoo made for cats (dilute as directed), and treats, petting, and praise as rewards for good behavior. Wear old clothes and keep plenty of large, absorbent towels on hand. If necessary, use a rubber bath mat to keep your cat from slipping.

Do not pour or spray water directly on your cat’s head. Mats and tangles are easier to remove by brushing before bathing. Trimming your cat’s nails before bathing is recommended.

**Caring for Your Cat’s Nails and Teeth**

Nail trimming and toothbrushing are also important aspects of grooming. Teaching your cat to accept having his or her feet touched can help make nail trimming easier.

Ask your veterinarian or a veterinary technician to teach you the safest way to perform these grooming activities.
Heart Murmurs in Cats

- A heart murmur is an abnormal sound that a veterinarian hears when listening to the heart through a stethoscope.
- A murmur is not always a cause for concern, but it can be an indication of heart disease, so other diagnostic tests may be warranted.
- Found in young kittens, innocent murmurs are essentially harmless and usually disappear by 4 months of age.
- Signs of heart disease in cats include difficult or rapid breathing, weakness, and collapse.
- To diagnose the cause of a murmur, your veterinarian may recommend tests such as blood tests, chest radiographs (x-rays), and echocardiograms.

What Is a Heart Murmur?

A heart murmur is an abnormal sound that a veterinarian hears when listening to a cat’s heart through a stethoscope. Normally, a veterinarian hears two sounds, a “lub” and a “dub,” which are the sounds of the heart valves closing as blood circulates through the heart. An additional “whooshing” sound, known as a heart murmur, is usually associated with a disturbance of the smooth blood flow through the heart.

Veterinarians rank the intensity or loudness of a heart murmur in grades from one to six, with one being barely audible and six being the loudest. There is also a one-to-five ranking system that works the same way. These grades do not necessarily correlate with the severity of the heart condition; they are merely one of several ways that veterinarians attempt to characterize the murmur.

A heart murmur is not always a cause for concern, but it may be an indication of a heart problem. Depending on your cat’s condition, the veterinarian may want to perform additional diagnostic tests to determine the cause of the murmur.

What Causes a Heart Murmur?

Heart murmurs are caused by any number of conditions that can create turbulence in the flow of blood through the heart. In cats, common causes for heart murmurs include:

- Hyperthyroidism (an excess of thyroid hormone)
- High blood pressure
- Hypertrophic cardiomyopathy (thickening of the heart muscle walls)
- Heart valve deficiencies or blockages
- Defects in the heart walls
- Blood clots within the heart
- Heartworm disease (rare)
- Anemia
- Severe dehydration

What Is an Innocent Murmur?
Occasionally, veterinarians may detect a heart murmur in a young kitten. While this may indicate the presence of a congenital heart condition (a defect that the kitten was born with), in many cases it is an innocent murmur, meaning that it is not related to a heart problem. These murmurs usually disappear by the time the animal is about 4 months of age. If a murmur does not resolve, your veterinarian may recommend diagnostic testing to investigate it further.

**What Are Other Signs of a Heart Condition?**

Not all cats with a heart condition show outward signs. However, if you have been told that your cat has a heart murmur, you should watch for signs such as:

- Difficult or rapid breathing
- Congestion or “noisy” breathing
- Loss of appetite
- Unexplained weight loss
- Weakness or lethargy (tiredness)
- Collapse

If your cat shows signs of open-mouth breathing or panting, gray or blue gums or tongue, or leg paralysis, seek veterinary help immediately!

**What Diagnostic Tests May Be Necessary?**

To determine the cause of a heart murmur, your veterinarian may recommend a number of tests, such as:

- Blood tests, including thyroid and heartworm tests
- Chest radiographs (x-rays) to assess the heart, blood vessels, and lungs
- An electrocardiogram (ECG)
- An echocardiogram (an ultrasound exam to evaluate heart structure and function)
- Blood pressure tests

**How Are Heart Murmurs Treated?**

Treatment depends on the cause of the heart murmur and your cat’s condition. If your cat is not showing any signs of heart disease other than the murmur, your veterinarian may choose to monitor your cat and provide treatment only if signs occur.

In some cases, such as when heart murmurs are caused by hyperthyroidism or dehydration, treatment of those conditions may resolve the heart murmur completely. If the murmur is caused by a congenital condition, surgery may be recommended. In other cases, the heart murmur may remain, but medications can help make your cat more comfortable and improve your pet’s longevity.
Heartworm Disease in Cats

- Heartworm disease attacks the lungs, heart, and related blood vessels. It is serious and potentially fatal.
- Heartworms are transmitted through the bite of an infected mosquito.
- There is no approved treatment for heartworm disease in cats.
- Illness is easily and effectively avoided by giving preventive medications.

What Is Heartworm Disease?

Heartworm disease is a serious and potentially fatal condition that affects dogs, cats, and up to 30 other species of animals. It is caused by parasitic worms (heartworms) living in the major blood vessels of the lungs and, occasionally, in the heart. These worms are transmitted (as microscopic larvae) through the bite of an infected mosquito. The scientific name for the heartworm parasite is *Dirofilaria immitis*.

Despite the fact that heartworm disease is virtually 100% preventable, many cats are diagnosed with it each year. Although cats are considered resistant to heartworms and sometimes can fight off an infection on their own, heartworm disease can still be a serious health problem for cats, resulting in significant illness and even death. Keeping a cat indoors does not prevent infection. Multiple studies have shown that more than 25% of heartworm-infected cats live indoors.

The American Heartworm Society (AHS) estimates that one million dogs in the United States have heartworm disease today, and this number may be rising. Wherever dogs are infected, studies have shown that cats are likely to be infected, too.

Signs of Heartworm Disease

Cats usually have fewer heartworms than dogs, and the worms may not grow as big. However, because cats are generally smaller than dogs and have smaller blood vessels, the presence of even a few worms can cause lung damage. Some cats with heartworm disease never show any signs. When present, the signs of heartworm infection in cats can be confused with signs of many other diseases, including feline asthma. Affected cats may vomit, cough, and have difficulty breathing. This condition is called *heartworm-associated respiratory disease (HARD)*. Sometimes, the only sign of infection is sudden death.

Diagnosis

Heartworms are spread through the bite of a mosquito, and dogs serve as the source of infection for other dogs and for cats. When a mosquito bites an infected dog, it withdraws blood that contains immature heartworms (called *microfilariae* [pronounced *micro-fill-air-ee-ay*]). These microfilariae mature inside the mosquito to become infective larvae. When the mosquito eventually bites another dog or a cat, the larvae enter the new host. In dogs, these larvae often mature to become adult heartworms, which produce more microfilariae and continue the heartworm’s life cycle.
The life cycle of heartworms in cats is slightly different from the life cycle in dogs. For example, many heartworms die during development in a cat, so they don’t live long enough to produce microfilariae. Additionally, the immune system of some cats can eliminate the heartworm infection before the worms reach adulthood. For these reasons, heartworm testing in cats is more complicated than the process in dogs. Many types of tests conducted on different occasions may be necessary. Negative test results do not necessarily rule out heartworm infection, and positive results (depending on the test) do not always confirm infection.

Many veterinarians use heartworm antigen and/or antibody tests to begin the screening process for heartworm disease in cats. Each of these tests has strengths and limitations, and neither test will, by itself, identify heartworm disease in all infected cats:

- **Antibody testing:** “Antibodies” are specific proteins that the body produces in response to invasion by a foreign organism. Heartworm antibody tests detect antibodies produced by a cat in response to the presence of developing heartworms (heartworm larvae). A positive result on an antibody test could indicate an early infection or a previous infection (that the cat’s immune system already eliminated), but not necessarily a current one. In fact, many antibody-positive cats do not have adult heartworms. Additionally, some cats with heartworms don’t produce antibodies the whole time they are infected, so a cat that has a mature (adult) infection may actually test negative on an antibody test.

- **Antigen testing:** “Antigens” are proteins that the body can recognize as belonging to a foreign organism. By identifying certain antigens that are found in adult female heartworms, researchers have developed tests that can detect these antigens to tell if a cat is infected with adult heartworms. Many veterinarians use a rapid-result test called a “SNAP” test to begin diagnosing heartworm disease in cats. The SNAP test is very accurate, can be performed in your veterinarian’s office using a very small amount of blood, and takes only a few minutes to complete. There is even a combination SNAP test that can detect heartworm disease as well as feline leukemia (FeLV) and feline immunodeficiency virus (FIV) at the same time. The feline heartworm antigen test only identifies the antigen associated with adult female heartworms. Therefore, it will not detect an infection when only larvae are present or when only adult male heartworms are present. If your veterinarian obtains a questionable result on the SNAP test, additional testing may be recommended.

Some veterinarians use an outside laboratory to perform feline heartworm antibody and/or antigen testing. In these cases, results are generally available within a few days.

Diagnosis of feline heartworm disease may involve other types of diagnostic tests besides blood work. Sometimes, evidence of heartworms can be seen on ultrasound images or radiographs (“x-rays”) of the heart and lungs. Unfortunately, these tests can also be inconclusive.

**Treatment**

In cats, there is no real treatment for heartworm disease itself. Your veterinarian will determine how to monitor your pet and manage the signs of disease. In some cases, surgical removal of the worms may be recommended. However, this surgery is costly and has some risks.
Prevention

Safe, easy-to-give, effective medications are available to prevent heartworm disease. These monthly oral or topical (“spot on”) medications are inexpensive compared to the dangers of the disease for your cat. Ask your veterinarian which method and schedule of heartworm prevention are best for you and your pet.
Heatstroke

- Heatstroke is a life-threatening condition that occurs when body temperature reaches 106°F to 109°F.
- Being left in a hot car and exercising in hot weather are the most common causes of heatstroke in pets.
- “Cracking” car windows does not keep a car cool.
- Organ failure, seizures, and death are likely if treatment for heatstroke is not started immediately.
- Starting the cooling process at home is key to the pet’s chances for survival.

What Is Heatstroke?

The word stroke comes from “strike,” and heatstroke means “to be struck down by heat.” Heatstroke is a life-threatening condition suffered when a pet is unable to lower its body temperature. Cells in the body become damaged when the core body temperature is between 106°F and 109°F.

Heatstroke is most common in dogs but can happen to cats. Heatstroke may occur when a pet is left in an overheated, enclosed space, like a car, or is exercised in hot, humid weather. Outdoor pets may become overheated if they do not have access to fresh water or shade.

Factors that may make some animals particularly at risk for heatstroke include obesity and a decreased ability to circulate air through the lungs. Animals with narrow airways, such as those with laryngeal paralysis, or a brachycephalic (short-nosed) head, such as bulldogs and pugs, are less able to cool themselves efficiently.

The most common cause of heatstroke in dogs is being left in a parked car. One test performed on a partly cloudy, 93°F day found that cars can heat up to 120°F in just 15 minutes. Cooler days can also be deadly. In another test, conducted on a 71°F day, the temperature inside a car parked in the sun with the windows open a crack went up to 116°F in 1 hour.

Exercising your pet in hot weather can also lead to heatstroke. In hot weather, it is best to exercise pets during the coolest part of the day (early morning and evening) and always provide plenty of fresh water and rest. It is also helpful to cool your pet with a hose or a swim after exercising.

Signs of Heatstroke

Heatstroke affects almost every system in the body. In normal conditions, as the body heats up, a dog pants to cool down. Another way to cool down is to send more blood to dilated blood vessels near the skin. Heat radiates off the body, and cooler blood returns to the body’s core. If a hot environment prevents cooling, blood is diverted away from important organs such as the brain, kidneys, gastrointestinal tract, and liver. When these organs do not receive enough blood, they begin to fail.
Signs of heatstroke include:

- Panting
- Lethargy
- Vomiting/diarrhea
- Disorientation
- Seizures
- Coma
- Death

**Treatment**

Immediate action must be taken when a pet is found to be suffering from heatstroke. Death occurs within minutes of the body’s core temperature reaching 110°F. In a study of 54 dogs with heatstroke, 50% of the dogs died. However, 100% of the dogs that were given first aid at home and arrived at the veterinary hospital within 90 minutes of being found survived.

**If your pet is suffering from heatstroke, before heading to the veterinarian, you should start the cooling at home by using a cool bath or the garden hose. Never immerse a pet in cold water, as this can cause life-threatening complications!**

As soon as a pet with heatstroke arrives at the veterinary hospital, a rectal temperature will be taken and further cooling will begin. If at-home cooling was successful, measures will be taken to reverse the effects of heat, dehydration, and low blood pressure. An IV catheter will be placed, and fluids will be given to help get blood flowing to major organs again. Treatment is aimed at supporting these organs in the hope that the damage is not permanent. Sometimes, it can take days to know which organs have been affected. Specific treatments may include antibiotics, blood pressure medications, and blood transfusions.

**Prevention**

Heatstroke can be prevented by taking extra care to avoid putting animals in dangerous situations. No pet should be left in a car, even if the windows are cracked open. Pets that are outside on hot days should have free access to fresh water, shade, and rest. And because they already have trouble cooling themselves, special care must be taken to avoid overheating in animals that are obese, have airway disease, or have a short-nosed head.
Helping Your Arthritic Cat

Arthritis is a joint problem that can reduce a cat’s mobility and cause severe, chronic pain. You can improve life for your arthritic cat by doing the following:

- **Help your cat get or stay slim** so that unnecessary weight doesn’t increase the load on your cat’s joints, resulting in more pain and inflammation. Ask your veterinarian to recommend an exercise program and a diet that are appropriate for your cat.
- Because arthritis is aggravated by the cold and damp, **keep your cat warm and dry**. Padded cat beds can help.
- Apply **warm compresses** to soothe your cat’s affected joints. Make sure the compress is not too hot, which can burn the skin.
- Learn how **massage** can increase your cat’s flexibility, circulation, and sense of well-being. Professional animal massage therapists are available.
- Ask your veterinarian about **medication** to help manage your cat’s arthritis. Never give your cat a drug without your veterinarian’s recommendation. Many human and canine pain relievers are poisonous to cats. Your veterinarian may prescribe the following:
  - Nonsteroidal antiinflammatory drugs (NSAIDs), which can reduce the pain and inflammation associated with arthritis.
  - Corticosteroids, which can suppress arthritis-associated inflammation for short periods of time.
  - Disease-modifying osteoarthritis drugs (DMOADs), which can be an important part of managing arthritis.
- Ask your veterinarian about **glucosamine, chondroitin**, and other joint supplements that can be used to help manage arthritis in animals.
- Consider **acupuncture** for your cat. This procedure is painless and has shown some success in animals.
- Consider **surgery** for advanced cases of feline arthritis. Your veterinarian can tell you more.
- Provide your cat with a **low-stress environment**, plenty of **affection**, and **aids** such as:
  - Slip-free flooring
  - Soft bedding
  - Ramps (instead of steps)
  - Help with grooming (regular brushing)
- **Caution:** Many human and canine pain relievers are poisonous to cats.
Helping Your Itchy Pet

- In some cases, multiple problems contribute to itching in pets.
- Scratching can quickly lead to skin damage, bleeding, hair loss, scabs, and secondary skin infections with bacteria or fungal organisms.
- Treatment for an itchy pet can require a long-term commitment. You should maintain communication with your veterinarian, especially if a treatment doesn’t seem to be helping, or if your pet seems to be responding negatively to a treatment.
- Itching is one of the most common problems veterinarians encounter in practice. The causes can include allergies, parasite infestation (for example, fleas or mites), skin infections, or a variety of other conditions. Keeping the pet comfortable while trying to figure out what is causing the itching can present a challenge for you and your veterinarian.

What Causes Itching?

Itching can make pets absolutely miserable, but it is actually a sign of an underlying problem. For example, if the pet has an allergy, exposure to the allergen causes a series of events to happen within the animal’s body. Part of this series of events involves causing certain cells in the pet’s skin to release a chemical called histamine. When released into the skin, histamine is very irritating and leads to itching. (Histamine is also involved in allergic reactions in people.) Medications that target histamine are called antihistamines. However, histamine is only part of the story. In pets, allergic reactions also cause the release of several other chemicals that contribute to irritation, inflammation, and itching, but antihistamines can’t counteract the effects of all these other agents. Some bacteria and fungal organisms (which can be introduced into the skin during scratching) also release chemicals that irritate nerve endings in the skin and cause itching. If an itchy pet doesn’t respond to an antihistamine, it may be because histamine is not playing a large role in the itching that the pet is experiencing.

Less commonly, some animals chew or lick themselves excessively as a compulsive behavior, usually as the result of stress. These kinds of behaviors are caused by the brain and are called psychogenic behaviors.

These many factors are important when considering therapy for itching. Some pets with allergies can do fairly well just on antihistamines, but most other pets need other interventions to help control their problem.

What Are Clinical Signs of Itching?

The clinical signs associated with itching can be mild or very severe:

- Licking
- Biting
- Scratching
- Rubbing
- Twitching the skin
Some pets may seem generally agitated, stop suddenly while walking to turn around and scratch, or whine as they are scratching. Scratching can quickly lead to skin damage, bleeding, hair loss, scabs, and secondary skin infections with bacteria or fungal organisms.

**How Is Itching Diagnosed?**

Itching is a response to another condition, so identifying the cause of the itching is as important as treating the itch. Your veterinarian will likely begin the process with a complete medical history and physical examination of your pet. Your veterinarian may also recommend diagnostic testing that can include the following:

- Combing your pet to look for fleas
- Taking samples of hair and skin cells to look for mites and other skin parasites
- Culture testing to identify bacteria or fungal organisms
- Allergy testing
- Blood work to look for underlying medical issues that can affect the skin

If the problem has been chronic or recurring, your veterinarian will likely ask about what therapies have been tried in the past and whether they were successful. This history can provide useful information about the nature of the underlying problem.

**How Is Itching Treated?**

Managing an itchy pet can involve combining several approaches, because multiple factors can be contributing to the problem. For example, if a pet has an underlying allergy problem that is complicated by a flea infestation in addition to a bacterial or fungal infection, all of these issues may need to be addressed. In this situation, be sure to clear up any questions about your pet’s diagnosis or therapy to minimize confusion and frustration during the course of treatment.

Treatment for an itchy pet can require a long-term commitment. Because pets respond differently to medications, your veterinarian may need to revise the treatment plan as therapy is progressing. It is important to maintain communication with your veterinarian, especially if a treatment doesn’t seem to be helping, or if your pet seems to be responding negatively to a treatment.

- **Topical products**: Your veterinarian may recommend a topical product of your pet has mild or localized itching, or as supportive therapy for more generalized conditions. Examples may include moisturizers, ointments, and lotions. These products may need to be applied frequently (sometimes several times daily) to help ease itching. Be sure to follow all label directions, and consult your veterinarian with any questions.
- **Shampoos**: Medicated shampoos can help some pets suffering with itchy skin. The effects of medicated shampoos may last for a few days; some shampoos can be used along with a leave-on conditioner to extend the effects. If you are unable to bathe your pet, another option should be discussed.
- **Medications**: For many pets, corticosteroids (steroids) provide more relief from itching than many other forms of treatment. A variety of products are available, and they can be given as pills, liquid, or by injection. However, corticosteroids have some side effects,
and not every pet is a candidate for this treatment. Your veterinarian will evaluate your pet and determine if corticosteroids are a good option. Some pets with itching do well when given antihistamines, and if your pet has a bacterial or fungal skin infection, medications are commonly used to treat those infections. There is also a formulation of cyclosporine that can help dogs with some types of skin allergies.

- **Supplements:** Fatty acid supplements and other nutritional supplements can help some pets with skin itching. However, various formulations are available using fish oils, vegetable oils, and other combinations, and effectiveness can vary. Ask your veterinarian if a nutritional supplement can help your pet.

In some cases, therapies work best for a particular animal when they are combined. One pet may do very well receiving a combination of antihistamines with a shampoo and a nutritional supplement, whereas another pet may not. If your pet is not responding to therapy, contact your veterinarian to see if modifications may be helpful.
Hematuria

- Hematuria is the condition of having blood in the urine.
- Bloody urine may be caused by abnormalities in the urinary tract or by disease processes elsewhere in the body that can affect the urinary tract.
- Hematuria may be an indication of a serious blood clotting or platelet disorder.
- Treatment varies depending on the cause.

What Is Hematuria?

Hematuria is the condition of having blood in the urine. In female dogs that have not been spayed, it is important to differentiate blood associated with a heat cycle from hematuria.

What Causes Hematuria?

Bloody urine may be the result of abnormalities within the urinary tract or of disease processes elsewhere in the body that can affect the urinary tract. Some of the possible causes of hematuria are:

- Bacterial, fungal, or viral infections in the urinary tract, including the prostate
- Bladder and/or kidney stones or crystals
- Idiopathic cystitis (urinary bladder inflammation with unknown cause in cats)
- Polycystic kidney disease (more common in cats)
- Blood clotting disorders (common with consumption of toxins, such as rat poison)
- Thrombocytopenia (an abnormally low number of platelets in the blood)
- Trauma of the abdomen or urinary tract
- Tumors involving the urinary tract

What Are the Clinical Signs of Hematuria?

Urine may range in appearance from normal to pink- or red-tinged, or it may contain obvious blood and actual blood clots. Some of the clinical signs associated with hematuria include:

- Drinking more and urinating more often
- Straining to urinate
- Urinary accidents in the house/outside of the litterbox
- Inability to urinate (a medical emergency!)
- Vocalizing in the litterbox
- Bruising on the skin
- Bleeding from the nose or gums
- Bleeding within the eyes
- Bloody vomit or feces

How Is Hematuria Diagnosed?
Your veterinarian will start by taking a medical history of your pet, including asking about possible trauma or exposure to toxins or infectious diseases. He or she will also perform a complete physical examination.

The basic diagnostic workup includes blood tests, such as a biochemistry panel and complete blood count (CBC), as well as a urinalysis. Depending on the potential underlying disease, your veterinarian may recommend more specific blood tests, such as a test for leptospirosis (a contagious bacterial infection of dogs that is transmissible to humans) or a panel to check for abnormalities in blood clotting. If your veterinarian suspects a urinary tract infection, a urinary culture test can help identify the specific bacteria that may be present. Abdominal radiographs (x-rays) or an abdominal ultrasound study may also help find urinary tract stones, tumors, or other abnormalities.

**How Is Hematuria Treated?**

Treatment varies depending on the specific cause. For example, urinary tract infections may be treated with antibiotics. Kidney or bladder stones may require a therapeutic diet or surgery. Blood clotting and platelet disorders can be extremely serious and often require hospitalization and intensive care.
Hepatic Lipidosis

- Hepatic lipidosis, or fatty liver disease, is the most common liver disease of cats in North America.
- It is caused by inadequate food intake or by diseases that may cause a cat to lose its appetite.
- Diagnosis may require blood tests, abdominal radiographs (x-rays), abdominal ultrasonography, and a liver biopsy.
- Treatment requires intensive feeding, often through a feeding tube, which may remain in place for several weeks or months.
- Many cats require initial hospitalization, followed by home care and periodic blood tests.

What Is Hepatic Lipidosis?

Hepatic lipidosis, also known as fatty liver disease, is the most common liver disease of cats in North America. As the name implies, fatty liver disease is a condition in which fat accumulates inside liver cells, causing liver dysfunction.

What Causes Hepatic Lipidosis?

The cat’s unique metabolism requires food on a daily basis. Any time a cat doesn’t eat for a few days, fat may be deposited within liver cells. A cat may lose its appetite for any number of reasons, such as an abrupt diet change; stress (e.g., a new pet in the house); or if someone forgets to feed it. Once this occurs, the cat often refuses to eat anything, even the most delectable treat.

In many cases, cats lose their appetite because of underlying diseases, such as diabetes, pancreatitis (inflammation of the pancreas), inflammatory bowel disease (IBD), kidney disease, or heart disease.

What Are the Signs of This Disease?

Cats with hepatic lipidosis are usually middle aged and often female. Typically, they are overweight and begin to lose weight rapidly.

Signs of fatty liver disease include:

- Anorexia (loss of appetite)
- Weight loss
- Lethargy (loss of energy)
- Vomiting
- Diarrhea or constipation
- Jaundice (yellowing of the skin, whites of the eyes, or gums)

Most cats with hepatic lipidosis are extremely sick and will not regain their appetite without help. If left untreated, these cats will often die.
How Is Hepatic Lipidosis Diagnosed?

Your veterinarian may recommend a number of blood tests to help diagnose if your cat has hepatic lipidosis and to determine if there is an underlying disease that may be causing it. Cats with fatty liver disease typically have elevated liver enzymes, a change that can be detected through blood testing. Another blood test, called a bile acids test, may also be recommended, so the veterinarian can assess how well the liver is functioning.

Abdominal radiographs, or x-rays, typically show an enlarged liver in cats with this disease. Your veterinarian may also recommend abdominal ultrasonography.

The clearest way to diagnose hepatic lipidosis is with a liver biopsy. In some cases, a needle may be used to take a small sample of the liver. This procedure is relatively painless for the cat and can often be done during the ultrasound examination. However, the sample is relatively small, so diagnosis may be difficult. In such cases, the cat may need to be anesthetized so the veterinarian can surgically open the abdomen and obtain a slightly larger sample of the liver tissue.

Additional tests may be required to determine if other diseases led to the cat’s loss of appetite. These diseases must be treated to ensure resolution of hepatic lipidosis.

How Is This Disease Treated?

Most cats with hepatic lipidosis are extremely dehydrated and require initial hospitalization and fluid therapy. The most critical aspect of treatment, however, is ensuring that the cat receives adequate nutrition. Depending on your cat’s condition, you may be able to try force-feeding your cat high-protein, high-calorie gruel through a syringe. However, most owners have little success with this approach, and it may cause the cat undue stress.

In most cases, the veterinarian will recommend that a feeding tube be placed to ensure that the cat receives proper nutrition. A very narrow tube may be inserted down the cat’s nose and into the stomach, so that a liquid diet may be administered into the tube using a syringe. However, some cats will not tolerate this, and the narrow tube limits the amount and type of food that can be administered. Your veterinarian may recommend placing a wider tube through the cat’s neck, into the esophagus and stomach, or through the abdominal wall directly into the stomach. These feeding tubes are fairly well tolerated and need to remain in place until the cat is eating on its own, which may take several weeks or even months.

Your veterinarian will recommend a diet for tube feeding and calculate the exact amount of food your cat should receive daily. It’s important that you follow these recommendations closely to help your cat’s liver return to its proper function.

Before and after each feeding, the tube should be flushed slowly with warm water. The food should also be warmed slightly and administered slowly, to prevent vomiting. Your veterinary care team will show you how to care for the feeding tube at home and how to administer food and water to your cat.
Your veterinarian may recommend other medications, such as appetite stimulants, antivomiting medications, and antibiotics. There are several supplements that also may be helpful.

If your veterinarian has diagnosed other diseases in addition to hepatic lipidosis, these conditions will require treatment as well. The prognosis is best for cats diagnosed with hepatic lipidosis only.

When you are tube-feeding your cat at home, your veterinarian will schedule recheck examinations with periodic blood tests to monitor your cat’s progress. Once your cat is eating on its own, the feeding tube may be removed.
Hookworms

- Hookworms are internal parasites that live in the small intestines of dogs and cats.
- People can be infected with hookworms when a hookworm larva penetrates their skin or when they unknowingly swallow infective hookworm eggs.
- Signs of hookworm infections in pets may include pale gums, tarry diarrhea, poor coat, lethargy, and failure to gain weight.
- Hookworm infections can be diagnosed with a veterinary fecal exam.
- Several antiparasite medications can be used to treat hookworm.
- To protect your pet from hookworms, administer a monthly preventive that includes an antiparasite medication for hookworms and schedule regular fecal exams at least once or twice a year.
- To protect your family from hookworms, remove pet feces from the yard promptly and dispose of it properly. If you have a sandbox, keep it covered when children are not playing in it.

What Are Hookworms?

Hookworms are internal parasites that generally live in the small intestines of puppies, kittens, dogs, and cats. These worms attach to the intestinal tissue and suck blood and other nutrients from their hosts.

How Do Pets Become Infected With Hookworms?

Infected mother dogs can transmit hookworm larvae to their puppies during nursing. These larvae migrate through the puppy’s body to the lungs, where they are coughed up and swallowed, finally arriving in the small intestine. Other larvae stay in the tissues of the body. Kittens are generally not infected this way.

Infected dogs also release hookworm eggs into the environment with their feces. In the environment, hookworm larvae develop into the infective stage and hatch from the eggs. When pets lie down in a contaminated environment, they can pick up hookworm larvae in their coats and become infected during grooming.

Hookworm larvae in the environment can also penetrate the pet’s skin and travel through the bloodstream to the lungs. As in puppies, they are coughed up and swallowed, eventually arriving at the small intestine. Finally, pets can become infected with hookworms by eating infected animals, such as rodents, or insects, like cockroaches.

What Are The Signs of a Hookworm Infection?

Hookworm infections are most severe in young puppies, and, in large numbers, hookworms can be fatal. Signs of a hookworm infection include:

- Pale gums
- Dark, tarry diarrhea
• Thin, dull coat
• Failure to gain weight
• Lethargy
• Coughing
• Red, itchy skin lesions, especially on the paws

Can People Get Hookworms From Their Pets?

Hookworm infections are considered zoonotic, meaning that they can be transmitted from animals to humans. Typically, people are infected when hookworm larvae from the environment penetrate the skin. The larvae then migrate under the skin, resulting in a condition called cutaneous larva migrans. People with this condition may experience itchy skin lesions with a snakelike pattern.

Occasionally, ingested larvae may migrate to the intestine, causing abdominal pain. However, hookworms do not mature to adults in humans, and the infections usually resolve on their own.

To prevent human infection, pet owners should remove and dispose of feces from the yard and sandboxes as soon as possible. Gloves and shoes should be worn at all times while gardening.

How Are Hookworm Infections Diagnosed?

Your veterinarian can diagnose a hookworm infection by identifying hookworm eggs during a fecal examination.

How Is an Infection Treated?

Puppies and kittens are routinely treated every 2 weeks with an antiparasite medication that eliminates hookworms and other internal parasites, until they can be placed on a monthly preventive medication. Because hookworms can cause anemia (decreased red blood cells), puppies with severe infections may require fluids, iron supplements, and blood transfusions.

Several antiparasite medications can be used to treat hookworm infections in adult dogs and cats.

How Can I Protect My Pet From Hookworm Infections?

Remove pet feces from the yard promptly and dispose of it properly. If you have a sandbox, keep it covered when children are not playing in it. If possible, keep cats indoors and dogs on leashes to keep them from hunting prey that could be infected with hookworms.

Ask your veterinarian about monthly preventives that include protection against hookworms. It is also very helpful to schedule regular fecal exams at least once or twice a year.
How to Administer a Topical Medication to Your Cat

- Many conditions in cats require medicine to be applied to the skin.
- Follow your veterinarian’s recommendations closely.
- Always put health and safety first. If the procedure seems dangerous to you or very painful for your pet, stop and consult your veterinarian.

The Basics

Many conditions in cats require medicine to be applied to the skin. This procedure can be relatively easy, as long as you follow a few simple guidelines. The most important guideline is to always put health and safety first. If, for any reason, your pet becomes so agitated that you feel you are at risk of being bitten or scratched, stop. If the procedure seems excessively painful for your pet, stop and get your veterinarian’s advice.

Follow Recommendations

Topical medications come in several forms—creams, ointments, lotions, and patches. Applicators may or may not be provided. It is important to closely follow your veterinarian’s recommendations for applying these medications. Treating too frequently or too aggressively can make the problem worse, not better. Sensitive, already inflamed skin can be further damaged. It is important to use only medicines prescribed by a veterinarian and to treat for the full length of time prescribed. Do not stop treatment early, even if the problem seems to be resolved.

What You Need

- Safe work area
- Medication prescribed by your veterinarian
- Latex or other gloves (if recommended)
- Elizabethan collar (if necessary; ask your veterinarian for advice)

Technique

Your veterinarian will recommend the best technique for applying the medication, depending on whether it is a cream, ointment, lotion, or patch. If the medication comes with an applicator, follow the manufacturer’s instructions on how to use the applicator.

When applying topical medications, be aware of the following issues:

- Some medications should be allowed to dry before people (especially children) or other pets come in contact with the treated cat. Follow instructions on how long to wait before allowing your cat to interact with family members.
- If you are applying medication to inflamed or damaged skin, be careful not to further irritate the area with too much rubbing.
- If you are using a patch (e.g., for pain control), be very careful that it does not come off and become stuck to a person or another pet.
- If your cat consistently licks the medication off, ask your veterinarian about using an Elizabethan collar—a cone-shaped collar that fits over your cat’s head to prevent licking.

If your cat will not sit still while you apply the medication, you may find it easier to hold your cat on your lap. You may want to place a folded towel across your lap to reduce the chance of being scratched if your cat tries to get away. Alternatively, cats can be wrapped in a large towel and held against your body, exposing only the head and the area to be treated. Be sure not to wrap your cat too tightly.
How to Administer Ear Medication to Your Cat

- Many outer ear infections in cats require medicine to be put directly into the ear.
- Follow your veterinarian’s recommendations closely.
- Always put health and safety first. If the procedure seems dangerous to you or very painful for your pet, stop and consult your veterinarian.

The Basics

Many outer ear infections in cats require medicine to be put directly into the ear. This procedure can be relatively easy, as long as you follow a few simple guidelines. The most important guideline is to always put health and safety first. If, for any reason, your pet becomes so agitated that you feel you are at risk of being bitten or scratched, stop. If the procedure seems excessively painful for your pet, stop and get your veterinarian’s advice.

Some cats may also need ear cleanings at home. Your veterinarian can tell you whether and how often to clean your cat’s ears.

Severe infections or ones that involve the middle or inner ear may require oral medication in addition to an ear medication.

Follow Recommendations

The ear is a very delicate structure. It is very important to closely follow your veterinarian’s recommendations for medicating your cat’s ear. Treating too frequently or too aggressively can make the problem worse, not better. Sensitive, already inflamed parts of the ear can be damaged. It is important to use only medicines prescribed by a veterinarian.

What You Need

- Old clothes
- Safe, easy-to-clean work area (e.g., tile or linoleum floor, water-resistant walls)
- Towel
- Ear medication prescribed by your veterinarian
- Cotton balls or tissues

Technique

There are several techniques for applying ear medication. The simplest one is described here. Please follow your veterinarian’s instructions.

- Choose a space that’s easy to clean (e.g., bathroom, laundry room, shower stall). Applying the medicine can be messy.
- Wear old clothes and keep a towel handy.
- If necessary, gently restrain your cat (see Restraining Your Cat, below). You may need a helper.
Hold the medication bottle or tube just over the opening of the affected ear and gently squeeze the prescribed amount of medicine into the ear. For liquid medicines, do not squeeze the bottle too hard, as a powerful stream can irritate tender, inflamed ear structures. **Note:** If an ear medication requires refrigeration, do not store it at room temperature; however, allow it to reach room temperature before use to make it more comfortable for your pet.

Fold the ear flap down against your cat’s head and try to prevent your cat from shaking his or her head too much. Gently massage the very base of the ear to distribute the solution as far as possible into the ear canal. Ask your veterinarian to demonstrate this massage.

Keep the medicine in the ear for the prescribed amount of time.

Allow your cat to shake his or her head to remove some of the medicine. (This is the messy part.)

Use cotton balls or tissues to gently wipe away any discharge, loosened debris, and remaining medicine from the ear flap, side of the neck, hair below the ear, and opening of the ear canal. Do not use cotton swabs because a sudden shake of the head or slip of the hand could result in a cotton swab puncturing the delicate eardrum or pushing debris inside the inner ear canal.

**Please contact your veterinarian if you are experiencing difficulties in administering any medication.**

**Signs of Ear Trouble**

- Odor
- Scratching/rubbing at ears or side of head
- Discharge
- Debris
- Shaking/tilting of the head
- Pain
- Head shyness (not wanting the head or ears to be touched)
- Irritability

**Restraining Your Cat**

Although some cats are willing to sit or lie quietly while you clean their ears, most object. Here are some tips on how to keep your cat from wiggling while you work:

Place your cat on a stable work surface that you can stand next to, and allow him or her to lie down, either in an upright “sphinx” position or flat on his or her side. While standing next to your cat, put the arm you will use to treat the ear over your cat’s shoulders, and use your upper arm and elbow to press your cat against your torso to help keep him or her still. You can use your other hand to hold your cat’s head still and keep the ear flap back. If necessary, move to your cat’s other side or turn your cat around to treat the other ear.
- If you don’t have a high work surface, you can use the same method while seated on the floor, either holding the front of your cat’s body partially against your body or with your cat in your lap.
- Alternatively, cats can be wrapped in a large towel and held against your body, leaving only the head free. Be sure not to wrap your cat too tightly.
- If your cat struggles, talk to him or her calmly. Stop if he or she becomes extremely agitated. Massaging the base of the ears (unless they are painful) should feel good to your cat and may help calm him or her enough that you can resume treatment.
- Be sure to reward good behavior.
How to Administer Eye Medication to Your Cat

- Many eye conditions in cats require medicine to be put directly into the eye.
- Follow your veterinarian’s recommendations closely.
- Always put health and safety first. If the procedure seems dangerous to you or very painful for your pet, stop and consult your veterinarian.

The Basics

Many eye conditions in cats require medicine to be put directly into the eye. This procedure can be relatively easy, as long as you follow a few simple guidelines. The most important guideline is to always put health and safety first. If, for any reason, your cat becomes so agitated that you feel you are at risk of being bitten, stop. If the procedure seems excessively painful for your cat, stop and get your veterinarian’s advice.

Follow Recommendations

The eye is a very delicate structure. It is very important to closely follow your veterinarian’s recommendations for medicating your cat’s eye. Treating too frequently or too aggressively can make the problem worse, not better. Sensitive, already inflamed parts of the eye can be damaged.

It is important to use only medicines prescribed by a veterinarian and to treat for the full length of time prescribed. Do not stop treatment early, even if the problem seems to be resolved.

What You Need

- Safe work area
- Eye medication prescribed by your veterinarian
- Moist cotton balls or tissues

Technique

There are several techniques for applying eye medication. Only one is described here. Ask your veterinarian to demonstrate application of the prescribed medicine and follow his or her recommendations.

- If necessary, gently restrain your cat (see Restraining Your Cat, below). You may need a helper.
- Using moistened cotton balls or tissues, gently wipe away any discharge from around the eye.
- Hold the affected eye open with the fingers of one hand. If the medication is liquid (eye drops), hold the upper and lower eyelids apart; if the medication is an ointment, gently pull down on the lower eyelid to create a small gap between the lid and the eye. You may see a white membrane (the third eyelid) partly covering the eye.
- With your other hand, gently squeeze the prescribed amount of medicine into the eye. Drops can be applied to the center of the eye or in the gap between the eye and the lower
laid; ointment can be placed in the gap. **Do not touch your cat’s eye with the medicine container or your fingers.**

- **Note:** If an eye medication requires refrigeration, do not store it at room temperature; however, allow it to reach room temperature before use to make it more comfortable for your pet.
- Either allow your pet to blink to move the medicine across the eye, or, using a very light touch, hold the eye closed for a moment and gently massage.
- Use cotton balls or tissues to gently wipe away any excess medication or discharge.
- Reward your cat with a treat.

**Contact your veterinarian if you have questions or difficulty administering any medication.**

**Signs of Eye Trouble**

- Excessive tearing
- Discharge
- Red eyelids
- Third eyelid visible
- Squinting or closing eye
- Cloudy or dull-looking surface; visible mark on surface
- Pawing at face
- Swelling or bulging around, near, or in eye

**Restraining Your Cat**

Keeping your cat still while you medicate his or her eye is important so that you do not accidentally damage the eye or touch the eye with the medicine container. Here are some tips:

- Place your cat in your lap and allow him or her to lie down flat on his or her side. Put one arm—the one you will use to hold the eye open—on top of your pet’s body, and use your upper arm and elbow to help keep him or her still. Do not use excessive force to hold your cat still.
- If your cat will not stay in your lap, you can use the same method while seated on the floor. Your cat may be more comfortable sitting upright.
- Alternatively, cats can be wrapped in a large towel and held against your body, leaving only the head free. Be sure not to wrap your cat too tightly.
- If your cat struggles, talk to him or her calmly. Stop if he or she becomes extremely agitated.
How to Find a Reputable Breeder

- Thorough research is important to ensure the breed fits with your lifestyle.
- Ask for recommendations, research websites, then interview and visit several breeders before making a decision.
- Reputable breeders will specialize in only one or two breeds, raise a limited number of litters a year, and offer a written contract with a health guarantee.
- A visit to the breeder is important to ensure that animals are raised in a clean, well-socialized environment.
- Many purebred animals are also available through rescue organizations and shelters.

How Do I Find a Reputable Breeder?

Before you even look for a breeder, it’s important to fully research the breed you are considering. Ensuring that the breed’s temperament, exercise needs, and grooming requirements are a good match with your own lifestyle will make for a better long-term relationship for both you and the pet. Talk to owners who have the breed you are considering and observe them interacting with their pets to aid your decision if this is the right breed for you.

Start by asking for recommendations from local and national breed clubs and breed rescue groups, as well as from your veterinarian. Most reputable breeders will have a website you can refer to for more information. It is important for you to interview and visit more than one breeder before you make your choice. Breed shows can be a good starting point and allow you to talk with many breeders at one time.

Be aware that many people who sell pets through newspaper ads and pet stores may be running puppy or kitten mills. As you may know, animals in these facilities are often inbred, unsocialized, and raised in overcrowded cages in unsanitary conditions. Even though they are only there for a few weeks, these animals can often have a lifetime of health and behavior problems. That’s one more reason why you will want to visit the breeding facility before deciding on a puppy or kitten.

What Are the Qualities of a Reputable Breeder?

A responsible breeder:

- **Is selective about where their puppies and kittens are placed.** A good breeder will interview you as much as you interview them. They will want to know if you are prepared to house, train, and care for the pet for a lifetime, and if you understand the exercise and grooming needs of the animal.

- **Provides an individual veterinary health record for the pet, and a health guarantee.** The pet should have received at least one set of vaccines and have been checked and treated for parasites, which are very common in young animals. The record should show that there are no obvious birth defects, diseases, or other health issues, such as heart murmurs. The breeder should specify what they have done to protect animals from infectious diseases such as distemper, parvovirus, feline leukemia, and feline
immunodeficiency virus, and how you would be compensated should the pet become ill in the weeks after you take it home. A good breeder will offer proof of screening, such as OFA (Orthopedic Foundation for Animals) and PennHIP hip certification, for potential genetic problems that are common to that breed.

- **Raises the litter in the home with the family.** Early socialization with people and animals is crucial for young pets. Animals who are isolated in cages or pens outside the home may have difficulty forming relationships with people and animals later. What’s more, pets who are raised in small cages are often harder to housetrain.

- **Only specializes in one or two breeds.** A breeder with multiple breeds and multiple litters has different motivations than the breeder who focuses on a single breed. You want a breeder who is extremely knowledgeable about the breed and is willing to honestly discuss the positives and negatives you may encounter, including potential genetic problems.

- **Produces a limited number of litters a year.** Even though you may be placed on a waiting list for a new puppy or kitten, you can feel more confident that the breeder is placing much thought, planning, and care into each animal.

- **Does not sell kittens and puppies before 8 weeks of age.** Young animals that are separated from their mother and the rest of the litter too early may have difficulty with socialization. By eight weeks of age they should be weaned from the mother and eating a commercial puppy or kitten food.

- **Provides a written contract.** The contract should not only outline the financial details, but provide information on registration, rights, ownership, spay or neuter requirements, and a return policy, should the need arise.

**What Questions Should I Ask the Breeder?**

It’s important for you to visit the breeding facility where your puppy or kitten has been raised. During your visit, consider asking questions such as:

- **Can I see where puppies or kittens are housed?** Obviously, you will want the area to be clean and well-maintained, with room for exercise. Kittens and cats should have clean litter boxes and be well groomed. The animals should be happy and healthy, and comfortable around people.

- **Can I call other families who have purchased pets from you?** A reputable breeder will be happy to provide you with a long list.

- **What kind of food are you feeding?** Good breeders don’t skimp on the quality of the food during the important developmental months.

- **Can I see the mother and other adult animals?** Look for well-socialized adult animals that are at ease with people. The breeder should also know the ancestry of not just the parents, but prior generations.

- **Can I bring my family?** You should be encouraged to bring your entire family, on multiple visits, to ensure the animal will fit into your household.

Another option to working with a breeder is to search shelters and rescue sites. It’s estimated that one in every four dogs in animal shelters is purebred. It’s a great way to give a good animal a second chance at life.
How to Give Your Cat a Pill

- Medicines in pill or capsule form are prescribed to treat a variety of conditions.
- It is important to use only medicines prescribed by a veterinarian and to treat for the full length of time prescribed.
- Do not stop treatment early, even if the problem seems to be resolved.

The Basics

Medicines in pill or capsule form are prescribed to treat a variety of conditions, but many cats dislike taking pills. Some medicines that are usually prescribed as pills or capsules can be changed (compounded) to a liquid or a powder for easier administration. If you have trouble giving your cat pills, ask your veterinarian if compounding is possible for specific medicines.

Follow Recommendations

It is important to use only medicines prescribed by a veterinarian and to treat for the full length of time prescribed. Do not stop treatment early, even if the problem seems to be resolved. You can ask your veterinarian to demonstrate how to give the prescribed medicine.

Technique

Some cats will eat a pill or capsule if it is hidden in a treat or in their regular food. However, many cats will eat the treat or food and leave the pill. Also, if the pill is in food, it may be hard to tell whether your cat has taken the pill on time (or at all) if he or she eats throughout the day. Cat treats designed to hide pills are available in many stores. Ask your veterinarian if the prescribed medicine can be given with treats or food and if there are any restrictions on what your cat should eat while taking the medicine.

A more reliable method of giving a cat a pill is:

- Put one hand on top of your cat’s head, holding firmly—but not too tightly—so that the tips of your thumb and middle finger touch the corners of the mouth.
- Tilt the head back. Your cat may open his or her mouth automatically at this point.
- Hold the pill between the first finger and thumb of your other hand. Use the tip of the middle finger of this hand to gently push down on your cat’s lower jaw. Be careful to place your finger on the short teeth at the very front of the mouth, not on the longer “canine” teeth at the corners.
- Drop or quickly place the pill as far back in your cat’s throat as you can. Do not push the pill down.
- Hold your cat’s mouth closed and stroke his or her throat (or blow on his or her nose) to encourage swallowing.
- Give your cat a reward (like a treat approved by your veterinarian) to make it a more pleasant experience.
When using this technique, be aware of your cat’s mood. If he or she gets agitated and seems likely to bite, stop and try again later or contact your veterinarian.

**Contact your veterinarian if you have questions or difficulty administering any medication.**

**Restraining Your Cat**

You may need help keeping your cat still while you administer medicine. If you don’t have a helper handy, place your cat in your lap. Put one arm—the one you will use to hold the head—on top of your pet’s body, and use your upper arm and elbow to help keep him or her still. Do not use excessive force to hold your cat still.

If your cat will not stay in your lap, you can use the same method while seated on the floor. Your cat may be more comfortable sitting upright.

If your cat struggles, talk to him or her calmly. Stop if he or she becomes extremely agitated. Contact your veterinarian if you have questions or difficulty administering any medication.
How to Keep Your Cat Off Tables and Counters

- Cats naturally like high places, so keeping them off tables and counters can be difficult.
- It’s best not to try to stifle your cat’s natural jumping and climbing behavior. Your cat will be happier if you provide him or her with acceptable options for climbing and jumping.
- Never chase your cat away from an unacceptable place or yell at him or her. These punishments often don’t work and will teach your cat to fear you.
- Environmental “punishers” can be useful because they work when you aren’t present; therefore, your cat won’t associate you with the punishment or learn to wait until you’re not around to go to unacceptable places.

Cats naturally like high places, so keeping them off tables and counters can be difficult. Some people prefer that their cats stay off these surfaces for the following reasons:

- Cats may steal food and find harmful items, such as chicken bones.
- Cats can carry trace amounts of urine and feces from the litterbox to surfaces where people prepare and eat food.

These problems can be reduced if you clean your tables and counters regularly and don’t leave food out unattended. It can also help to understand your cat’s behavior and how to best change it.

Why Cats Like High Places

Cats like high places, such as tables and counters, for several reasons:

- High places give cats vantage points from which to survey their territory.
- High places provide safety from other household pets or anything else that scares cats.
- Elevated surfaces can become warm, safe places to sunbathe. The top of the refrigerator is another warm favorite of cats.
- Tables and counters can be a source of food and crumbs.

Providing Alternatives

It’s best not to try to stifle your cat’s natural jumping and climbing behavior. Your cat will be happier if you provide him or her with acceptable options for climbing and jumping. If you don’t, your cat will likely continue to go to unacceptable places.

Indoor cat “tree” furniture with bark or sisal posts and comfortable platforms and hiding places is ideal for cats. To add to the appeal of a cat tree, you can place comfortable bedding on the platforms or in the hiding places. You can also purchase or build cat shelves that attach to windowsills.

Discouraging Your Cat
Keeping tables and counters clean and free of food can make it easier to discourage your cat from visiting these surfaces. In addition, it can help to divide your cat’s daily food allowance into several small meals a day. Alternatively, you can try giving your cat his or her daily food allowance all at once to be eaten throughout the day; however, if your cat eats all the food at one sitting, this isn’t a good option.

It’s never a good idea to chase your cat away from an unacceptable place or yell at him or her. These punishments often don’t work and, instead, teach cats to fear their owners. Alternatives include:

- If you see your cat on a table or counter, quickly squirt your cat in the rear end with water from a squirt bottle or gun, but only when he or she isn’t looking. Make sure that the stream of water is strong enough for your cat to feel it through his or her haircoat. If you don’t want to use water, you can use a canister of compressed air. Never aim water or air at your cat’s face or ears.
- If you don’t have a squirt bottle/gun or a compressed air canister handy, simply pick up your cat, say “no” firmly without yelling, and put him or her on the floor.

Environmental “punishers” are a better option because they work when you aren’t present; therefore, your cat won’t associate you with the punishment or learn to wait until you’re not around to go to the unacceptable places. Instead, your cat will learn that it’s never safe to go to those places. Commercially available punishers can be used, but here are some ideas for homemade deterrents:

- Cats generally do not like the smell of citrus or disinfectants, so use a cleaner with a citrus odor to keep your tables and counters clean.
- Get several inexpensive plastic placemats and cover one side of each with double-sided tape or Sticky Paws. Then put the placemats sticky-side up on the unacceptable surfaces. Remove the placemats only when you need to use the surfaces, and replace them as soon as you’re done. It may take several days for your cat to decide that sticky tables and counters aren’t so great after all. Plain aluminum foil can be used instead of sticky placemats.
- Put a few pennies inside several aluminum cans, and cover the openings with tape. Line up the cans along the edge of the unacceptable surfaces. When your cat tries to jump on the surfaces, the cans are likely to fall and scare him or her away.

For punishment to be effective, it must be consistent. Don’t confuse your cat by allowing him or her to be on the table or counter sometimes. Your cat won’t understand the difference.

**Find a Cat That Doesn’t Like Heights**

When you’re looking for a new cat, you might be able to find one that doesn’t like heights. Some domestic shorthaired cats don’t like heights, but you’d have to learn this from a previous owner before adopting the cat. Another option is to find a cat of the ragdoll breed, which reportedly dislikes heights.
What Not to Do

- Do not scold or hit your cat for going to unacceptable places. This kind of punishment is highly unlikely to be effective and will teach your cat to fear you.
- Do not shoo or push your cat off counters and tables. A sudden jump or fall could injure your cat.
- Never use an environmental punisher that could physically harm your cat. Environmental punishers should only startle your cat or make a place uncomfortable.
- Never point a water bottle/gun or compressed air canister at your cat’s face or ears, and never let your cat see you use these devices on him or her.
How to Tell if Your Cat Is Sick

- Any change in your cat’s normal behavior, such as increased lethargy (tiredness), changes in appetite, weight loss, or hiding in the house may be indications that your cat is ill.
- Male cats that frequent the litter box but are unable to urinate should be seen by a veterinarian immediately.
- If your cat has eaten string, and a portion of the string is still visible, leave the string in place, and see your veterinarian as soon as possible.
- If your cat becomes ill outside of normal clinic business hours, call an emergency veterinary clinic for guidance.
- Some illnesses require immediate veterinary attention, so when in doubt, call a veterinary professional.

How Can I Tell if My Cat Is Sick?

Any decreases in energy level, appetite, or weight may signal that your cat is not feeling well. If your male cat is squatting to urinate, but no urine appears, call your veterinarian immediately. It is common for the urinary tract in male cats to become blocked. This condition is not only extremely painful; it’s a medical emergency.

It is also common for cats to ingest string, yarn, or dental floss, which can cause problems in the intestinal tract. If you notice a string hanging from your cat’s mouth or anus, do not pull the string out. Leave the string in place and bring your cat to the nearest veterinary clinic.

Other signs that your cat may be ill include:

- Bloody urine or accidents outside the litter box
- Increased drinking and/or urination
- Vomiting
- Diarrhea or bloody stools
- Constipation
- Sneezing or nasal discharge
- Runny eyes or holding one eyelid shut
- Difficulty breathing
- Limping or inability to use hind legs
- Unusual lumps, bumps, or swellings
- Bad breath or excessive drooling
- Hiding or yowling

If you are concerned that your cat may have a fever, you can measure its temperature with a thermometer in the rectum. Normal temperature for a cat is 100.5 to 102.5 degrees Fahrenheit. If your cat’s temperature is above or below this range, contact your veterinarian.

What Should I Do if I Suspect That My Cat Is Sick?
If your cat shows signs of illness, don’t wait—call your veterinarian at once. If it is outside of normal clinic business hours, contact an emergency veterinary clinic. Some illnesses may require immediate veterinary attention, so it’s in your cat’s best interest for you to ask if it needs to be seen right away.

If your cat goes outdoors, you may not always know when he or she has been exposed to toxins or suffered trauma from cars, dogs, or cat fights. Internal injuries may not be immediately apparent, but should be attended to as soon as possible. If you suspect that your cat may have been injured, call your veterinarian.
Human Foods That Are Dangerous for Dogs and Cats

- Some human foods can cause serious illness (and even death) in dogs and cats.
- Pets should not be given human food unless recommended by your veterinarian.
- If you suspect your pet may have eaten a dangerous food, contact your veterinarian immediately.

What Do I Need to Know About Foods That Are Dangerous for My Pet?

A number of human foods are dangerous to pets. Many of these foods may seem tasty to our pets but can prove deadly if eaten. It can be very tempting to offer pets food from the table, but pets should not be given human food unless recommended by your veterinarian.

If you suspect your pet may have eaten a dangerous food, contact your veterinarian immediately. In many cases, early recognition and treatment are critical.

**Xylitol**

Xylitol is an artificial sweetener found in products such as gum, candy, mints, toothpaste, and mouthwash. Xylitol is harmful to dogs because it causes a sudden release of insulin in the body that leads to hypoglycemia (low blood sugar). Xylitol can also cause liver damage in dogs. Within 30 minutes after eating, the dog may vomit, be lethargic (tired), and/or be uncoordinated. However, some signs of toxicity can also be delayed for hours or even for a few days. Xylitol toxicity in dogs can be fatal if untreated. It is unknown whether xylitol is toxic to cats.

**Chocolate, Coffee, and Caffeine**

Chocolate contains theobromine, a chemical that is toxic to dogs in large enough quantities. Chocolate also contains caffeine, which is found in coffee, tea, and certain soft drinks. Different types of chocolate contain different amounts of theobromine and caffeine. For example, dark chocolate and baking chocolate contain more of these compounds than milk chocolate does, so a dog would need to eat more milk chocolate in order to become ill. However, even a few ounces of chocolate can be enough to cause illness in a small dog, so no amount or type of chocolate should be considered “safe” for a dog to eat. Chocolate toxicity can cause vomiting, diarrhea, rapid or irregular heart rate, restlessness, muscle tremors, and seizures. Death can occur within 24 hours of ingestion.

**Grapes and Raisins**

Grapes and raisins can cause acute (sudden) kidney failure in cats and dogs. It is unknown what the toxic agent is in these fruits. However, clinical signs can occur within 24 hours of eating and include vomiting, diarrhea, and lethargy (tiredness). Other signs of illness relate to the eventual shutdown of kidney functioning.

**Avocados**
The avocado tree leaves, pits, fruit, and plant bark are likely all toxic. Clinical signs in dogs and cats include vomiting and diarrhea.

**Garlic and Onions**

Garlic and onions contain chemicals that damage red blood cells in cats and dogs. Affected red blood cells can rupture or lose their ability to carry oxygen effectively. Cooking these foods does not reduce their potential toxicity. Fresh, cooked, and/or powdered garlic and/or onions are commonly found in baby food, which is sometimes given to animals when they are sick, so be sure to read food labels carefully.

**Macadamia Nuts**

Macadamia nuts are common in candies and chocolates. The mechanism of macadamia nut toxicity is not well understood, but clinical signs in dogs include depression, weakness, vomiting, tremors, joint pain, and pale gums. Clinical signs can occur within 12 hours after eating. In some cases, signs can resolve without treatment in 24 to 48 hours, but patient monitoring is strongly recommended.

**Prevention**

Many cases of human food toxicity in pets are accidental. A pet may find and chew on a package of gum or candy, or steal food from a countertop or table. The best way to prevent this is to keep all food items in closed cabinets or in areas that are inaccessible to pets. This may be particularly difficult during the holiday season, when more candy, chocolate, fruit baskets, and other food items are around. During these times, increased vigilance can help prevent pets from finding and eating dangerous foods.

Unfortunately, some cases of food toxicity in pets occur when pets are given a human food that contains a dangerous component. In general, human food items should not be given to pets unless recommended by your veterinarian. Children should also be taught to never give candy, gum, or other human food items to pets.

**If you suspect that your pet has eaten a potentially hazardous item, contact your veterinarian immediately.**

Hypertension and Your Pet

- Hypertension, also known as high blood pressure, can affect dogs and cats.
- In people, the most common type of hypertension is known as primary or essential hypertension, which means that high blood pressure is the main disease process.
- Cats and dogs, on the other hand, rarely develop primary hypertension. Instead, hypertension in pets is usually the sign of another illness. This is known as secondary hypertension.
- Because hypertension in dogs and cats is usually secondary to another illness, some of the clinical signs may be due to the hypertension, while other signs are attributable to the underlying illness.
- Hypertension can be difficult to diagnose based on clinical signs because many of the associated signs can be attributed to any number of diseases.
- Once your veterinarian identifies hypertension in your pet, he or she will search for the underlying cause of the condition. Often, treating that illness can correct the hypertension.

What Is Hypertension?

Hypertension, or high blood pressure, occurs when blood moves through the body’s arteries with too much force. Blood pressure can be increased by several factors, including faster heart rate and increased cardiac output (the amount of blood that is sent out into the body with each heartbeat). In animals with hypertension, the increased force or “pressure” of the blood damages the arteries as the blood tries to move through. Imagine a firefighter trying to force a high-powered stream of water through a garden hose. The pressure would tear the hose apart. Similar damage to the body’s arteries is possible if high blood pressure is left untreated.

For example, blood vessels in the retinas (in the eyes) can become damaged from hypertension. This damage can eventually cause blindness. For some pet owners, sudden blindness can be the first noticeable sign of hypertension in a pet. The heart and brain can also be damaged by hypertension.

What Causes Hypertension?

Hypertension in pets is often the result of other illnesses. Some possible causes in dogs include kidney disease, adrenal gland disease, and diabetes. In cats, the most common causes are kidney disease, hyperthyroidism (overactive thyroid gland), and heart disease.

What Are Possible Signs of Hypertension?

Because hypertension in dogs and cats occurs secondary to an underlying illness, some of the clinical signs may be due to the hypertension, while other signs are attributable to the underlying illness. Clinical signs of hypertension (or associated illness) may include the following:

- Redness in one or both eyes
- Vision loss
- Seizures
- Lethargy (tiredness)
- Depression
- Difficulty breathing
- Increased thirst and urination
- Weight loss
- Increased or decreased appetite

**How Is Hypertension Diagnosed?**

Hypertension can be difficult to diagnose based on clinical signs because many of the associated signs can be attributed to any number of diseases. If your veterinarian suspects a problem, he or she will measure your pet’s blood pressure.

Initial blood pressure readings in pets are sometimes artificially high due to the animal’s anxiety level in the veterinary clinic (often termed *white coat hypertension*). Your pet may need to stay a few hours in the clinic until he or she calms down enough to get an accurate reading.

**How Is Hypertension Treated?**

Once your veterinarian identifies hypertension in your pet, he or she will search for the underlying cause. Often, treating that illness can correct the hypertension. In other cases, medication to treat high blood pressure may be prescribed. Typically, drugs control hypertension by slowing the heart rate, modifying cardiac output, or relaxing the walls of the arteries to make blood flow more easily. Sometimes, combinations of drugs are required to control a pet’s blood pressure. In pets in which high blood pressure has caused eye problems, eye drops may be prescribed as well.

Your veterinarian may also recommend a diet with reduced salt, which may mean feeding your pet a prescription diet.

Pets being treated for hypertension should be checked regularly to ensure that their blood pressure remains within a healthy range. Your veterinarian will recommend a schedule for recheck examinations. Repeat blood testing or other diagnostic testing may also be recommended periodically. As in people, pets with hypertension may require medication for life.
Hyperthyroidism and Your Cat

- Hyperthyroidism occurs when a cat’s thyroid gland (an organ located at the front of the neck) produces excess amounts of thyroid hormone.
- Hyperthyroidism tends to affect middle-aged and older cats.
- Hyperthyroidism causes the heart to pump faster, which can lead to other problems such as high blood pressure and heart disease.
- In some cats with hyperthyroidism, the thyroid gland becomes noticeably enlarged.
- There are three ways to treat hyperthyroidism: medication, surgery, or radiation therapy.
- Because the exact cause of hyperthyroidism is unknown, it is difficult to determine what measures to take to avoid it.

What Is Hyperthyroidism?

If your older cat starts losing a lot of weight despite having a ravenous appetite, the problem might be hyperthyroidism. Hyperthyroidism occurs when a cat’s thyroid gland (an organ located at the front of the neck) produces excess amounts of thyroid hormone. The problem is usually caused by a benign (noncancerous) tumor on the thyroid gland, although a small percentage of thyroid gland tumors in cats can be malignant (cancerous).

Hyperthyroidism tends to affect middle-aged and older cats. Thyroid hormones play an important role in controlling the body’s metabolism, so most cats with hyperthyroidism tend to burn up energy too rapidly and lose weight despite having an increased appetite. Increased thirst and urination are also associated with this disease. Hyperthyroidism causes the heart to pump faster, which can lead to other problems such as high blood pressure and heart disease.

What Are the Typical Signs of Hyperthyroidism?

The typical signs of hyperthyroidism include the following:

- Weight loss, usually despite an increased appetite (although some cats have a decreased appetite)
- Restlessness or hyperactivity
- Diarrhea and/or vomiting
- Increased thirst and urination
- Irritability or nervousness
- Unkempt hair coat
- Lethargy (tiredness) or weakness

How Is Hyperthyroidism Diagnosed?

In some cats with hyperthyroidism, the thyroid gland becomes noticeably enlarged. During physical examination, your veterinarian may be able to feel an enlarged thyroid gland, which can feel like a small bulge on the front of your cat’s neck. After performing a thorough physical examination, your veterinarian will likely recommend blood tests to check for elevated levels of thyroid hormone.
If hyperthyroidism is diagnosed, your veterinarian may need to run additional tests to further evaluate your cat’s health status and better predict which treatment is most appropriate. These tests might include:

- Additional blood work
- Urinalysis
- Radiographs (x-rays)
- Electrocardiogram (ECG)
- Ultrasound examination of the heart
- Check of your cat’s blood pressure

**What Are the Treatment Options for Hyperthyroidism?**

There are three ways to treat hyperthyroidism: medication, surgery, or radiation therapy. Medication prevents the thyroid from overproducing thyroid hormone but does not cure the condition. Medication must therefore be given for the rest of the cat’s life in order to keep the disease under control. Periodic blood testing to check thyroid hormone levels is also recommended for the duration of therapy.

Surgical removal of the affected thyroid gland is another course of treatment. If your cat is healthy enough to undergo anesthesia and surgery, this option can offer a more permanent solution to hyperthyroidism.

Radioactive iodine therapy involves giving your cat an injection that destroys the diseased thyroid tissue without harming other organs. Because of the regulations associated with handling radioactive materials, this treatment is not available at all practices. This type of therapy can also be expensive and may require a week of hospitalization.

Your veterinarian will evaluate your cat and recommend the most appropriate treatment option.

**Is Hyperthyroidism Preventable?**

Because the exact cause of hyperthyroidism is unknown, it is difficult to determine what measures to take to avoid it. Regular physical examinations and wellness blood work that includes screening for increases in thyroid hormone levels are recommended to help make an early diagnosis and initiate prompt treatment.
**Ibuprofen and Naproxen Toxicosis**

- Ibuprofen and naproxen can be toxic to dogs and cats, but cats are much more susceptible to this toxicity than dogs are.
- A single 200-milligram ibuprofen tablet can be toxic to a cat or small- to medium-sized dog; toxic effects can occur rapidly and damage the kidneys and stomach.
- Ibuprofen and naproxen are drugs intended for humans that should not be given to pets.
- Never administer human medications to your pet unless instructed to do so by your veterinarian, and keep all medications in the home secured to help prevent accidental swallowing by pets.

**What Is Ibuprofen and Naproxen Toxicosis?**

Ibuprofen is the active ingredient in medications like Advil and Nuprin. Naproxen is similar to ibuprofen but is longer-acting; it is the active ingredient in medications like Aleve and Naprosyn. Ibuprofen and naproxen are widely used to treat pain, fever, and inflammation in people. Unfortunately, these drugs can be extremely toxic (poisonous) to cats and dogs. Toxicosis occurs when a cat or dog eats enough of one of these drugs to cause damaging effects in the body.

The damaging effects of ibuprofen or naproxen in pets include inhibiting blood flow to the kidneys and interfering with the production of compounds that help protect the inner lining of the stomach. Therefore, toxic effects of ibuprofen and naproxen in dogs and cats include kidney damage that can lead to kidney failure and severe stomach irritation that can progress to stomach ulcers.

**How Does Toxicosis Occur?**

Many cases of ibuprofen and naproxen toxicosis in dogs and cats are accidental. A pet may find and chew on a bottle of pills or eat a pill that has fallen on the floor. Because these drugs are so potent, a single 200-milligram ibuprofen tablet can be toxic to a cat or small- to medium-sized dog.

Sadly, some cases of toxicosis occur because pet owners give human medication to their pet without being instructed to do so by a veterinarian. Ibuprofen and naproxen are intended for human use and should not be given to pets.

**What Are the Clinical Signs of Ibuprofen and Naproxen Toxicosis?**

Once swallowed, ibuprofen and naproxen are rapidly absorbed from the stomach and intestines. Depending on the amount of drug ingested, toxic effects can occur within an hour, but some signs can take a few days to appear. The most common side effect is stomach irritation. In mild cases, this may cause vomiting. In severe cases, it can cause the pet to vomit blood; the irritation can also be severe enough to cause stomach ulcers and stomach perforations (punctures in the stomach wall that allow stomach acid to leak into the abdomen). If stomach bleeding is severe, blood transfusions may be necessary to save the patient.
Ibuprofen and naproxen toxicosis can also inhibit blood flow to the kidneys, which can cause kidney failure. Extremely high toxic doses of these drugs can also affect the brain, causing altered mental status, seizures, and coma. Other clinical signs associated with toxicosis can include the following:

- Vomiting (sometimes with blood)
- Diarrhea (may be darker in color due to digested blood)
- Appetite loss
- Dehydration
- Abdominal pain
- Pale gums (secondary to blood loss)

**How Is Ibuprofen and Naproxen Toxicosis Diagnosed?**

Diagnosis of ibuprofen and naproxen toxicosis is commonly based on a history of recent swallowing of one of these drugs. Your veterinarian may recommend diagnostic testing, such as blood work (a chemistry panel and complete blood cell count [CBC]) and urinalysis to assess the extent of the damage. If stomach perforation or kidney failure are suspected, additional diagnostic testing is warranted.

**What Are the Treatment and Outcome for Ibuprofen and Naproxen Toxicosis?**

Ibuprofen and naproxen are absorbed by the body very rapidly. If swallowing is recognized right away, vomiting can be induced to remove the drug from the stomach before the body can absorb it. Another option may be to sedate the pet to flush out the contents of the stomach. Your veterinarian may also administer a special preparation of liquid-activated charcoal to slow absorption of material from the stomach and intestines. This step may need to be repeated every few hours, as these medications have a long-lasting effect.

There is no specific antidote for ibuprofen or naproxen toxicosis. Treatment may include intravenous fluid therapy, blood transfusions, medications to help heal stomach damage, and other medications to help support and stabilize the patient. Hospitalization may be required so that blood values, urine output, and vital signs can be monitored.

Ibuprofen or naproxen toxicosis can be fatal. However, pets can survive if the condition is recognized, diagnosed, and treated quickly. The amount of drug involved also has a direct effect on recovery and long-term outcome.

Most cases of ibuprofen or naproxen toxicosis are preventable. Never administer human medications to your pet unless instructed to do so by your veterinarian, and keep all medications in the home secured to help prevent accidental swallowing.
Immune-Mediated Hemolytic Anemia

- Immune-mediated hemolytic anemia (IMHA) is a condition in which the body’s immune system attacks and destroys red blood cells.
- IMHA can be a primary condition, or it can be caused by another illness or event (including cancer, certain tick-transmitted diseases, or some viral and bacterial infections).
- IMHA can be fatal, even with aggressive treatment. For pets that survive, relapses can occur. Your veterinarian may recommend periodic recheck examinations and repeat blood work for the life of your pet to help identify and treat relapses early.

What Is Immune-Mediated Hemolytic Anemia?

Immune-mediated hemolytic anemia (IMHA) is a type of illness known as an *autoimmune disease*. Autoimmune diseases result when the body’s immune system does not recognize itself; cells that normally attack invading viruses and bacteria begin attacking the body’s own cells, causing damage. In dogs and cats with IMHA, the body’s red blood cells come under attack. When red blood cells are severely damaged, they can burst; this is known as *hemolysis*. Therefore, IMHA is a condition in which red blood cells are attacked by the body’s immune system and destroyed by hemolysis, resulting in anemia (an inadequate quantity of red blood cells). Red blood cells can be destroyed within the blood vessels or in the spleen, liver, or bone marrow (where they are produced).

IMHA can be a primary condition, or it can be caused by another illness or event. Primary IMHA is sometimes called *autoimmune hemolytic anemia* (AIHA); it is the most common type of IMHA in dogs but is relatively rare in cats. The underlying cause of primary IMHA is rarely determined. Certain breeds of dogs (including cocker spaniels, Old English sheepdogs, and Irish setters) are genetically prone to developing primary IMHA. Secondary IMHA can be associated with certain cancers (including lymphoma); exposure to certain drugs (including some antibiotics); tick-transmitted diseases (such as ehrlichiosis and babesiosis); bee stings; and some viral and bacterial infections, including leptospirosis in dogs and feline leukemia (FeLV) in cats. Blood transfusion reactions have also been associated with IMHA in pets.

What Are the Clinical Signs of Immune-Mediated Hemolytic Anemia?

Red blood cells are responsible for carrying oxygen to the body’s organs, so anemia causes the body to become deprived of adequate oxygen. Many of the clinical signs associated with IMHA are related to anemia. If the condition is caused by another illness, additional clinical signs can result from the underlying condition. IMHA can occur relatively slowly (over a period of weeks), or it can progress rapidly in just a few days. Clinical signs can vary in severity:

- Weakness
- Lethargy (tiredness)
- Appetite loss
- Vomiting and diarrhea
- Fever
• Pale gums
• Rapid heart rate
• Rapid breathing
• Yellow discoloration of the skin (known as jaundice, resulting from destruction of red blood cells)
• Collapse

How Is Immune-Mediated Hemolytic Anemia Diagnosed?

Your veterinarian will likely recommend blood testing to confirm a diagnosis of IMHA. Some veterinarians can perform initial testing at the office. In other cases, tests are sent to a diagnostic laboratory and results are available in a few days. If your veterinarian suspects an underlying illness (such as FeLV or ehrlichiosis), more testing may be recommended.

What Are the Treatment and Outcome for Immune-Mediated Hemolytic Anemia?

Because IMHA is caused by an overactive immune system, initial treatment is aimed at suppressing the immune system and stabilizing the patient. Steroids (given at high doses) are the most common medication prescribed. If the patient is severely anemic, blood transfusions may be required. Additional therapy may include intravenous fluids, antibiotics, and supportive therapy. If the underlying cause of the IMHA can be treated, such therapy is also generally initiated.

Some pets don’t respond adequately to steroids. In these cases, additional medications can be given to manage the condition.

During the treatment process, frequent blood testing is required to ensure an adequate response to therapy. Once a pet responds to treatment, medication dosages are gradually adjusted and blood testing repeated periodically to monitor for relapses.

IMHA can be fatal, even with aggressive treatment. For pets that survive, there is always a possibility of relapse. Your veterinarian may recommend periodic recheck examinations and repeat blood work for the life of your pet to help identify and treat relapses early.
Immune-Mediated Thrombocytopenia

- Immune-mediated thrombocytopenia (IMT) is a condition in which the body’s immune system attacks and destroys blood platelets.
- IMT can be a primary condition, or it can be caused by another illness (including cancer, certain tick-transmitted diseases, and some viral and bacterial infections).
- IMT generally responds to treatment, but it can be fatal. For pets that survive, relapses can occur. Your veterinarian may recommend periodic recheck examinations and repeat blood work for the life of your pet to help identify and treat relapses early.

What Is Immune-Mediated Thrombocytopenia?

Immune-mediated thrombocytopenia (IMT) is a type of illness known as an autoimmune disease. Autoimmune diseases result when the body’s immune system does not recognize itself; cells that normally attack invading viruses and bacteria begin attacking the body’s own cells, causing damage. In dogs and cats with IMT, the body’s platelets are attacked and destroyed, resulting in reduced numbers of platelets in the blood vessels. Platelets (also called thrombocytes) are cells that are needed to form blood clots and repair damaged blood vessels. Thrombocytopenia occurs when there are too few platelets in the blood.

Adequate numbers of platelets are essential for survival. Platelets help repair obvious injuries, such as open wounds, as well as microscopic injuries that occur in day-to-day life. If platelet numbers are too low, uncontrolled bleeding can occur, and if treatment is unsuccessful, the patient can die from excessive blood loss.

IMT can be a primary condition, or it can be caused by another illness or event. The underlying cause of primary IMT is rarely determined. Certain breeds of dogs (including German shepherds and Old English sheepdogs) may be genetically prone to developing primary IMT. Female dogs are more likely to be diagnosed with IMT, but female cats are not. Secondary IMT can be associated with certain cancers (including lymphoma); exposure to certain drugs (including some antibiotics); tick-transmitted diseases (such as ehrlichiosis, babesiosis, and anaplasmosis); and some viral and bacterial infections, including canine distemper virus in dogs and feline leukemia (FeLV) and feline immunodeficiency virus (FIV, or “feline AIDS”) in cats.

What Are the Clinical Signs of Immune-Mediated Thrombocytopenia?

Platelets are responsible for helping to form blood clots and repair damaged blood vessels, so IMT can cause spontaneous bleeding or inability to stop bleeding. If IMT is caused by another illness, additional clinical signs can result from the underlying condition. Clinical signs of IMT can vary in severity:

- Weakness
- Lethargy (tiredness)
- Appetite loss
- Vomiting blood
- Bloody diarrhea or melena (digested blood that appears in feces)
- Bruising on the skin
- Bleeding from the nose
- Bleeding from the gums
- Bloody urine, or bleeding from the penis or vulva
- Coughing blood, or difficulty breathing

Bleeding can also occur within the brain, causing seizures; within the eyes, causing blindness; or within the abdomen or chest cavity. Severe bleeding can be fatal, especially if it occurs rapidly. If significant blood loss occurs, additional clinical signs (such as pale gums) may be associated with anemia (inadequate numbers of red blood cells).

Owners may also notice other evidence of bleeding, such as minor cuts and scratches that continue to bleed, a heat cycle that seems prolonged or excessive, or skin bruising after playing or grooming.

**How Is Immune-Mediated Thrombocytopenia Diagnosed?**

There is no specific test to diagnose IMT. Your veterinarian will likely recommend blood testing to help confirm a suspected diagnosis of IMT and rule out other conditions that can cause low platelet numbers. Some veterinarians can perform initial testing at the office. In other cases, tests are sent to a diagnostic laboratory and results are available in a few days. If your veterinarian suspects an underlying illness (such as FeLV or ehrlichiosis), more testing may be recommended.

**What Are the Treatment and Outcome for Immune-Mediated Thrombocytopenia?**

Because IMT is caused by an overactive immune system, initial treatment is aimed at suppressing the immune system and stabilizing the patient. Steroids (given at high doses) are the most common medication prescribed. Additional therapy may include intravenous fluids and supportive care. If the underlying cause of the IMT can be treated, such therapy is also generally initiated.

Some pets don’t respond adequately to steroids. In these cases, additional medications can be given to manage the condition.

During the treatment process, frequent blood testing is required to ensure an adequate response to therapy. Once a pet responds to treatment, medication dosages are gradually adjusted and blood testing repeated periodically to monitor for relapses.

IMT generally responds to treatment, but it can be fatal. For pets that survive, relapses can occur. Your veterinarian may recommend periodic recheck examinations and repeat blood work for the life of your pet to help identify and treat relapses early.
Inflammatory Bowel Disease

- *Inflammatory bowel disease (IBD)* is a broad term for conditions that cause the lining of the digestive tract to become thickened and inflamed.
- IBD can occur in dogs and cats.
- Signs of IBD include chronic, intermittent vomiting and/or diarrhea, weight loss, and anorexia (appetite loss).
- The exact cause of IBD is unknown.
- Conclusive diagnosis of IBD requires biopsies (tissue samples) of the intestinal tract.
- Some veterinarians may recommend a diet trial to test for food allergies.
- Many pets with IBD require a special diet as well as medication.
- Additional treatments may include antivomiting, antidiarrhea, and/or antiparasite medications, as well as antibiotics.
- IBD usually can’t be cured, but it can frequently be controlled.

What Is Inflammatory Bowel Disease?

*Inflammatory bowel disease (IBD)* is a general term for conditions that cause the lining of the intestines to become thickened and inflamed. When this occurs, the digestive tract can’t absorb nutrients and move food substances properly. Certain portions of the digestive tract may be affected, or the entire length of the intestines may be involved.

What Are the Signs of Inflammatory Bowel Disease?

Dogs and cats with IBD can appear normal but may experience intermittent, but chronic, vomiting or diarrhea. The signs may vary, depending on what portion of the digestive tract is involved. Lesions at the beginning of the intestine may result in vomiting, while lesions further down the digestive tract may cause watery diarrhea or diarrhea with mucus or fresh blood. In more severe cases, the animal may lose weight, experience a loss of appetite, or have a thin, dull coat.

What Causes This Condition?

The exact cause of IBD is unknown. It is suspected that IBD is caused by chronic stimulation of the immune system from various factors, including dietary ingredients, parasites, or bacteria within the digestive tract. Genetics may also play a role.

How Is Inflammatory Bowel Disease Diagnosed?

Your veterinarian will probably recommend a number of tests to rule out other causes of vomiting and diarrhea, including fecal exams, blood tests, and radiographs (x-rays). An abdominal ultrasound may show thickened loops of bowel, which tends to occur with IBD. However, a definitive diagnosis of IBD requires biopsies (tissue samples) from the digestive tract.
Biopsies may be obtained during abdominal surgery, or via endoscopy using a fiberoptic endoscope. A fiberoptic endoscope is a long, narrow tube with a tiny camera at the tip. The endoscope can be inserted through the pet’s mouth to reach the esophagus, stomach, and small intestine, and/or inserted into the rectum to reach the large intestine. The instrument includes a small forceps, which the veterinarian can guide, using the camera, to take tissue samples.

While both procedures require anesthesia, endoscopy has the benefit of being less invasive, so the pet requires less time to recuperate. Endoscopy has some limitations, in that it may be difficult or impossible to reach some locations within the digestive tract, and only small samples may be obtained. For those reasons, surgery may be preferred.

Once a tissue sample is obtained, a specialist will examine the sample to determine the dominant type of cell found in the intestinal lining. This allows an exact diagnosis to be made, so treatment can be tailored to the specific type of IBD present.

What Is a Diet Trial?

In some cases, your veterinarian may suggest a hypoallergenic diet trial to rule out a dietary cause, such as an allergy. Although most pets with a food allergy develop problems with their skin (such as itching), some pets also develop signs consistent with IBD. In most cases of food allergy, the protein source in the food is usually the cause of the problem.

Before starting a diet trial, your veterinarian needs a full history of what diets your pet has eaten in the past. Be sure to include any human foods as well as any commercially prepared diets or treats. A diet trial usually involves feeding your pet a diet made using a protein source that your pet’s immune system has not been exposed to before, such as venison, rabbit, fish, or duck. This means your veterinarian needs to know what protein sources your pet has been eating, because those sources must be avoided for the duration of the diet trial. Another alternative is feeding a food that contains hydrolyzed protein, meaning that the protein has been broken down into very small molecules so that the immune system won’t recognize it.

During the trial, it is important that the pet eats only the hypoallergenic food and nothing else. All treats, edible chews (such as rawhide), and human foods must be discontinued. Feeding these items may expose the pet to the offending protein(s), which can confuse the results of the dietary trial. Typically, the animal is on the diet trial for a minimum of 12 to 16 weeks. If the signs improve or resolve during the trial and return when the pet is fed the previous diet, a diagnosis of food allergy can be assumed.

How Is This Condition Treated?

Treatment of IBD varies depending on your pet’s condition and the specific type of IBD determined by the biopsy. Most pets with IBD may require a special diet and/or anti-inflammatory or immunosuppressive medications.

Other recommendations may include antivomiting and antidiarrhea medications, antibiotics, parasite treatments, and/or probiotics.
Although IBD can’t always be cured, it can frequently be controlled. Pets with IBD may have occasional relapses.
Injectable Medication

- Some medications can only be administered by injection and must be given by a trained veterinary professional.
- Your veterinary care team will be glad to address any questions or concerns you may have about the injectable medication your pet is receiving.
- If your pet has any problems after receiving an injection, notify your veterinarian right away.

Why Does My Pet Need Injectable Medication?

Certain medications, such as insulin, can only be administered by injection. Some injections can be given at home after owners have received necessary instructions. However, in some cases, an injectable medication must be given by a veterinarian or trained veterinary professional.

Examples of injections that are given by veterinary professionals include:

- Chemotherapy
- Certain antibiotics
- Sedatives
- Medication to treat heartworm disease (in dogs)

How Are Injectable Medications Given?

- Injectable medications can be given the following ways:
  - Direct injection into a vein (known as *intravenous* [IV] *injection*)
  - Injection through an intravenous catheter
  - Injection into a muscle (known as *intramuscular* [IM] *injection*)
  - Injection directly under the skin (known as *subcutaneous* [SC or SQ] *injection*)

Some injectable medications can be given on an outpatient basis. In other cases, your veterinarian may recommend that your pet remain at the veterinary office for a period of observation after an injection is given. In some cases, blood work before or after an injection may be recommended.

Some injections are only given once, but others need to be repeated according to a schedule. If your pet must receive medication injections on a particular schedule, it is very important to maintain this schedule and notify your veterinarian if a scheduled injection must be postponed.

What Should I Do if I Have Concerns About My Pet’s Injectable Medication?

Your team of veterinary professionals will be glad to answer any questions you may have about the injectable medication your pet is receiving. Any concerns about side effects, pain, and expected outcome after treatment should be discussed so that you understand what is happening with your pet.
If your pet has any problems after receiving an injection, notify your veterinarian right away. In some cases, an alternative medication or treatment schedule may be possible.
Intervertebral Disk Disease

- Intervertebral disk disease (IVDD) occurs when a disk between the vertebrae (bones of the spine) ruptures and pushes against the spinal cord.
- While IVDD can happen in cats, it’s more common in dogs, especially breeds such as dachshunds, basset hounds, and Welsh corgis.
- The signs of IVDD vary depending on the location and the degree of spinal cord compression.
- Signs may include severe pain, difficulty walking, limb paralysis, and urinary and/or fecal incontinence or retention.
- Diagnosis may require radiographs (x-rays) and/or a myelogram, as well as a CT or MRI scan.
- Treatment varies from strict rest and medication to surgery.

What Is Intervertebral Disk Disease?

In dogs and cats, the vertebrae (bones of the spine) are cushioned on either end by disks of soft cartilage. Occasionally, these disks can rupture, or herniate, into the vertebral canal, causing compression of the spinal cord. This condition is known as intervertebral disk disease (IVDD). Spinal cord compression is painful and can affect nerve supply to the legs and other areas of the body.

This condition occurs most commonly in dogs and less often in cats. Any dog can be affected, but dog breeds with longer torsos, such as dachshunds, basset hounds, and Welsh corgis, are most often affected.

What Are the Signs of Intervertebral Disk Disease?

The signs of IVDD vary depending on the location and degree of spinal cord compression. In mild cases, the pet may appear to be stiff or in pain. More severe cases can result in:

- Severe pain and reluctance to move
- Difficulty walking
- Abnormal walking, knuckling under of paws
- Dragging of rear limbs, paralysis (the front limbs may also be affected in some cases)
- Urinary and/or fecal incontinence or retention
- Aggression (due to pain)

Disks may rupture anywhere along the spinal column, from the neck down to the hip/tail area. The middle of the back, where the last part of the ribcage attaches to the spinal column, is the area most commonly affected. Disks that rupture in this area tend to affect the rear limbs and, sometimes, the nerves controlling the urinary or digestive tracts. Disks that rupture in the neck may affect both front and back limbs, or the front and back limbs on one side.

If your pet is unable to use his or her back legs, seek veterinary help immediately. Your veterinarian will be able to determine if it is a disk problem and if your pet has feeling in the
affected limbs. In severe cases, loss of feeling/sensation is a medical emergency, and permanent paralysis can result if surgery is not performed as soon as possible.

**What Causes This Condition?**

Generally, wear and tear on the disks causes them to degenerate and eventually push out (rupture/herniate) into the vertebral canal. Arthritis can contribute to the condition. Trauma, such as being hit by a car, may also cause disks to bulge from their normal location.

**How Is Intervertebral Disk Disease Diagnosed?**

If your pet is showing signs of IVDD, your veterinarian may recommend a radiograph (x-ray) to assess the spine. Your veterinarian may administer sedation or anesthesia to your pet so that x-rays can be taken without causing pain or further damage to the spine. Although disks (being made of cartilage) are not directly visible on x-rays, a narrowing of the space between two vertebrae may indicate the potential site of the problem. Other abnormalities associated with IVDD, such as arthritis in the back, tumors, or abnormal positioning of vertebrae, may also be visible on radiographs.

To determine the exact site of the disk rupture, your veterinarian may recommend performing a test called a myelogram. In this procedure, a special type of sterile dye that is visible on x-rays is injected into the spinal canal while your pet is under anesthesia. Radiographs are then taken. On the radiographs, the dye will be visible in the fluid-filled space between the spinal cord and the bones of the spine. Locations where the dye space becomes thin or disappears may indicate where a disk is pushing against the spinal cord.

For even greater detail, a CT (computed tomography) or MRI (magnetic resonance imaging) scan may be recommended. These procedures also require anesthesia. Because CT and MRI equipment are not available at all veterinary practices, your veterinarian may need to refer you to a specialist for these tests to be performed.

**How Is This Condition Treated?**

Treatment depends on the severity of the signs. If pain is mild to moderate and your veterinarian determines that your pet has adequate feeling/sensation in the affected limbs, conservative management is usually recommended. Strict rest and confinement for 2 to 4 weeks or more may be needed. Your veterinarian may recommend medications such as muscle relaxants to reduce spasms and possibly steroids or pain medications to reduce swelling and control pain.

If your pet is unable to walk, make sure to place soft padding under the body and turn your pet over (while supporting the spine) every few hours to prevent the formation of pressure sores. Make sure your pet continues to urinate and defecate, and clean the bedding often. If your pet is not urinating or defecating, contact your veterinarian. Periodic reexaminations may be recommended to assess how well your pet is responding to treatment.
If your pet is unable to walk and you are unable to provide nursing care at home, your veterinarian may recommend hospitalization until your pet’s condition improves enough for you to manage at home.

With conservative management, many pets recover in time. Occasionally, the signs may worsen and require a recheck appointment with your veterinarian. However, you should be aware that once your pet has experienced IVDD, it’s more likely to happen again. Pets with a history of IVDD should be kept from leaping, jumping, and engaging in other activities that jolt the spine to prevent a recurrence of the condition.

If your pet has lost significant feeling/sensation, surgery is usually recommended as soon as possible. Once the disk material is removed from the spinal canal and is no longer pressing against the spinal cord, the animal usually regains the use of its legs over the course of several weeks.
Joint Arthroscopy

- Joint arthroscopy is a diagnostic and/or therapeutic technique that allows the veterinarian to look inside your pet’s joints through a very small skin incision.
- A pet’s joints can be examined for signs of degeneration or trauma. In some cases therapeutic procedures can be performed.
- Recovery time from arthroscopic versus “open” joint surgery is generally easier and shorter.
- The procedure is minimally invasive but the pet must be under anesthesia.

What Is Joint Arthroscopy?

An arthroscope is a specially designed instrument that allows a veterinarian to look inside joints using a tiny, sterile, illuminated fiber optic camera. Arthroscopy is a minimally invasive procedure that can be used to examine joint structures for signs of degeneration and trauma without having to perform open surgery on a joint. It can be used for both diagnostic and therapeutic purposes. For example, if a veterinarian is examining your pet’s joint for signs of degeneration, he or she can remove painful cartilage fragments or bone chips as part of the procedure.

How Is It Performed?

Because joint arthroscopy requires anesthesia, your veterinarian may recommend pre-anesthetic blood work and other pre-anesthetic testing before performing joint arthroscopy for your pet.

Before performing joint arthroscopy, the patient is placed under anesthesia. All hair is removed from the skin over the joint (to avoid introducing hair particles into the joint) and the skin is cleaned thoroughly with a surgical scrub solution to kill bacteria and other germs. The area around the joint is covered with sterile surgical drapes, to reduce the risk of accidentally introducing bacteria into the joint. Finally, the veterinarian scrubs his or her hands before dressing in a sterile surgical gown and sterile gloves.

One or two tiny incisions are made through the skin and into the joint to allow access for the sterile camera and instruments. A sterile saline solution is then typically pumped into the area to inflate the joint. This helps the veterinarian visualize the area. Once the scope is inserted, the veterinarian can examine the joint with the illuminated camera. Special lenses allow areas of interest to be magnified and images captured (photographed) for later review. Small surgical instruments can also be inserted through the incision to allow the veterinarian to perform therapeutic procedures.

What Is It Used For?

Arthroscopy is useful because it can allow a veterinarian to directly visualize areas that cannot be examined completely using x-rays or ultrasound. Diagnostic and therapeutic arthroscopy can be performed in virtually any joint, including the elbow, hip, shoulder, and knee.
Medical conditions that can be diagnosed using arthroscopy include:

- Elbow dysplasia
- Hip dysplasia
- Arthritis
- Cruciate ligament injuries
- Other ligament injuries

Arthroscopy can be used to help determine if a patient is a good candidate for certain orthopedic procedures. It can help your veterinarian assess the amount of joint degeneration and help determine which surgical option for treatment may be the most appropriate.

**Benefits of Arthroscopy**

The recovery time for pets after an arthroscopic procedure has been performed is generally brief compared to recovery time for pets that have undergone open joint surgery. Rather than a large incision, arthroscopy requires only one or two small incisions to be made in the skin. Many pets experience minimal discomfort after the procedure. Arthroscopy also causes less disruption of fragile tissues surrounding the joint and as a result there is a reduced chance of swelling. An additional benefit is that diagnostic or therapeutic arthroscopy may negate the need for a more invasive surgery if a problem can be accurately diagnosed and treated.

Despite the fact that arthroscopy is a minimally invasive procedure and your pet may experience little to no discomfort afterwards, it is very important to carefully follow your veterinarian’s instructions regarding recovery, including any limitations placed on activity.
Keeping Your Pet at a Healthy Weight

- Nearly 50% of adult dogs and cats in the United States are overweight or obese.
- Obesity increases the risk for other serious health problems.
- Follow your veterinarian’s advice on which diet to feed your pet, how much, and how often.
- Give your pet plenty of opportunities for regular exercise that is appropriate for his or her age and health status.

Why to Watch Your Pet’s Weight

Pet obesity has become a very common problem. Studies indicate that nearly 50% of adult dogs and cats in the United States are overweight or obese, and that percentage increases among older pets. Obesity increases the risk for other serious health problems, including osteoarthritis, diabetes (in cats), heart and respiratory diseases, and many types of cancers. Overweight pets are also at increased risk for complications during anesthesia if they need to undergo surgery or other procedures. And if a pet already has a health condition, obesity makes the problem that much harder to manage. Being overweight can also lower your pet’s energy level and hamper his or her ability to enjoy an active lifestyle with you and your family.

What Causes Weight Gain?

Simply put, weight gain results when an animal eats more calories than it burns off during normal activities or exercise. Factors that can contribute to weight gain include:

- Overfeeding or overeating
- Inactivity or low activity levels
- Breed
- Age
- Reproductive status (intact versus spayed/neutered)
- Preexisting diseases (e.g., hypothyroidism, diabetes mellitus, Cushing disease)

Certain breeds, especially smaller ones, are more prone to being overweight or obese, as are many senior pets.

How to Assess Your Pet’s Weight

Whether your pet is a dog or a cat, and regardless of what size or breed it is, you should be able to feel—but not see—its ribs. Being able to feel some ribs is a sign that your pet is at a healthy weight. Additionally, if your pet is at a healthy weight, it should have a distinct “waist” where the body narrows, just behind the rib cage and in front of the hindquarters, when viewed from above. When viewed from the side, your pet’s abdomen should appear to be slightly tucked up behind the rib cage. If your pet has fat deposits over its back and at the base of its tail, or if it lacks a waist or an abdominal tuck, chances are that it has a weight problem.
Veterinarians typically use a measurement called a *body condition scale* or *body condition score* to assess whether a pet is underweight, overweight, or just right. Your veterinarian can use this scale to show you what to look for when checking your pet’s weight.

**Know What You Feed**

Excess weight is generally due to a very simple problem—too much food! Treats and other tidbits are also major culprits. Although commercially produced pet foods must meet AAFCO (Association of American Feed Control Officials) nutritional standards, which ensure that they contain protein, fats, carbohydrates, vitamins, minerals, and water in the proper proportions, treats are often not nutritionally complete and balanced and can contain a lot of calories. Therefore, it is important to be aware of how much your pet is eating each day. This information can help your veterinarian if he or she determines that your pet needs to lose weight.

To track how much your pet eats, it may be helpful for your family to keep a “food diary.” Everyone in the family should write down how much he or she feeds the pet every time the pet is fed. Treats count; so do rewards given during training sessions or when encouraging a pet to take medication.

It is also important to feed your pet the right food for his or her species, age, and size. For example, an adult dog or cat should not be fed a formula for puppy or kitten growth. Ask a veterinary professional for advice on what products offer the right nutritional mix for your pet, and how much and how often to feed. Most diets come with feeding guidelines, but every pet is different. Your veterinarian can make recommendations specifically for your pet.

Feeding “people” food to pets can not only contribute to weight gain but also cause other medical problems. Some foods that are perfectly healthy for people, like grapes, can be toxic to pets. Even foods that aren’t toxic can contribute to stomach problems, food allergies, or other problems for pets. Additionally, feeding table food to a pet that is already receiving a nutritionally balanced pet food changes the “balance” of that pet’s diet. Consult your veterinarian before feeding any human food to your pet.

**A Note on Exercise**

It is also essential to give your pet plenty of opportunities for regular exercise that is appropriate for his or her age and health status. A vigorous daily walk—if approved by your veterinarian—is an excellent place to start for many dogs. Most cats won’t tolerate leash walking, but regular play periods with fun toys, such as a light pointer or tossed ball, can provide satisfactory activity levels and help maintain their health.

**Reading Labels**

Under federal Food and Drug Administration (FDA) regulations, every pet food must include a label listing its ingredients and a guaranteed analysis of how much protein, fat, and other important nutrients are in it. Reading the percentages can get complicated, so one of the best quick ways to assess the quality of a diet is to look at the ingredient list. By law, the pet food
manufacturer must list the ingredients by weight. For more information on reading pet food labels, visit [www.fda.gov/AnimalVeterinary/ResourcesforYou](http://www.fda.gov/AnimalVeterinary/ResourcesforYou) and click on “Pet Food Labels—General” under “Information for Consumers Fliers.”

### Avoiding the Battle of the Bulge

- Feed a well-balanced, veterinarian-approved diet. If necessary, feed a calorie-restricted diet.
- When you treat your pet, give healthy treats.
- Consult your veterinarian before giving your pet any human food.
- Make sure your pet gets plenty of regular age- and health-appropriate exercise.
- Don’t allow your pet to have unrestricted access to food—its own or another pet’s!
- Make sure all family members are on the same page when it comes to feeding—and treating—your pet.
Kenneling Your Cat

- Even being in the best kennel is stressful for many cats. If your cat does not tolerate boarding well, consider using a pet sitter or arranging for your cat to stay in a room at a friend’s or relative’s house while you are traveling.
- Before kenneling your cat anywhere, be sure to visit the facilities to see whether they appear comfortable, clean, and well staffed.
- If your cat has special needs, such as a special diet or medication, ask whether the staff can accommodate these needs.
- Cats that will be kenneled must be free of contagious diseases. The kennel may require a health certificate from your veterinarian and proof of your cat's most recent vaccinations.
- When kenneling your cat, provide emergency contact information and take a hiding place for your cat and your cat’s food, litter, medication, favorite toy, and bed.

Even being in the best kennel is stressful for many cats. If your cat does not tolerate boarding well, consider using a pet sitter or arranging for your cat to stay in a room at a friend’s or relative’s house while you are traveling. If kenneling your cat is your only option, the following guidelines can help improve your cat’s stay at a kennel.

Ask Your Veterinarian

If you need to kennel your cat, your veterinarian may have a kennel or may be able to recommend one. The advantage to kenneling your cat at your veterinarian’s practice is that if your cat becomes ill, his or her regular veterinarian and health records are on site.

Some kennels are associated with specific veterinarians. Ask the kennel how your cat will be cared for in case of illness. If the kennel isn’t associated with your veterinarian’s hospital, you may be able to request that your regular veterinarian be contacted if your cat becomes ill.

Visiting a Kennel

Before kenneling your cat anywhere, visit the facilities to see whether they appear safe, comfortable, clean, and well staffed. Kennel facilities range from basic cages to more elaborate accommodations, but the most important considerations are the safety and cleanliness of the facility and the competence of the staff. Ask how many animals are routinely kenneled at a time and how many staff members care for them. More staff members and fewer pets may mean more attention per pet. Your questions should be answered to your satisfaction so that you feel comfortable leaving your cat at the facility. Some facilities have cameras that allow owners to view their pets through the Internet.

When you visit a kennel, the air should not smell unpleasant. Proper air ventilation significantly decreases the risk of transmission of upper respiratory infections. Animals that are currently boarded should appear clean and well cared for.

The cage sizes should seem adequate. Each cat should have his or her own cage and should not be too close to other cats. This helps prevent aggression and the spread of disease. Cats shouldn't
be boarded in the same room as dogs because their presence and/or barking can be stressful for cats, which prefer a quiet environment. Some kennels play music, which may help keep cats calm.

Kenneled cats need to be provided with stimuli and the opportunity for exercise. Ask the staff how often the animals are fed and exercised. Some kennels offer cat cages with multiple levels, giving cats a place to climb and perch. Some cages have scratching posts.

Kennels may offer extras, such as more play time, treats, or grooming, at an additional cost.

If your cat has special needs, such as a special diet or medication, ask whether the staff can accommodate these needs. Some kennels may not be able to give medication as often as your cat requires.

**Kenneling Requirements for Cats**

Cats that will be kenneled must be free of contagious diseases. The kennel may require a health certificate from your veterinarian and proof of your cat's most recent vaccinations. Some kennels have specific vaccination requirements. Don't assume that your cat has had all of the required vaccinations without checking with the kennel first. Most of the time, a letter from the regular veterinarian is all that is required. Sometimes, additional vaccinations may be needed. In general, most kennels require the FVRCP (feline distemper combination) vaccine to be given according to the general practice of the area (every 1 to 3 years). Rabies vaccinations are administered according to state law.

If your cat has fleas or other external or internal parasites, he or she should be treated before arrival or on admission to the kennel.

If your cat has a medical problem that is stable or is being treated, tell the kennel when making reservations to ensure that the facility is comfortable with the responsibility for your cat.

**What to Take to the Kennel**

Take your cat's food. An abrupt change in a cat’s food may cause diarrhea or a lack of appetite, especially when the cat is in a stressful environment.

Take your cat’s brand of litter, but not the litterbox. Some cats may be reluctant to use a different type of litter, especially in a strange environment.

Give the kennel the phone numbers of several contacts in case of an emergency. Provide the number(s) at which you can be reached while you’re away. Provide a friend’s or relative's number to call if you’re unavailable. This person should be able to make emergency decisions; discuss your wishes with this person before you leave. In addition, give the kennel your veterinarian's number.
If your cat receives medications at home, they should be continued during kenneling. Take the medications to the kennel, and ensure that the kennel is aware of the problem being treated.

Ask the kennel if you can bring your cat’s favorite toy and/or bed as well as a shirt that a family member has worn. Familiar items and smells from home can help make your cat feel more comfortable.

To give your cat some privacy and reduce his or her stress in the kennel, take paper bags or a high-sided bed or box in which your cat can hide. Ask the staff to ensure that your cat always has a hiding place.
Kidney Disease in Pets

- *Kidney disease* is a very general term used to describe any one of several conditions that can affect the kidneys or damage kidney cells.
- Clinical signs associated with kidney disease can vary depending on the presentation (acute or chronic) and the underlying cause.
- Pets can sometimes experience a good quality of life for many years after being diagnosed with kidney disease. Your veterinarian will evaluate your pet and discuss the best methods of treatment with you.

What Is Kidney Disease?

*Kidney disease* is a very general term used to describe any one of several conditions that can affect the kidneys or damage kidney cells. If kidney disease progresses, it can eventually lead to kidney failure and death. Here are just a few medical conditions that can be associated with kidney disease:

- Nephritis: infection of the kidneys
- Nephrotoxicosis: kidney toxicosis; damage to kidney cells associated with a drug or poison (such as antifreeze)
- Polycystic kidney disease: a genetic condition in which functioning kidney cells undergo degeneration to become cysts and lose their ability to function properly
- Kidney stones
- Heart failure: decreased blood supply to the kidneys (secondary to heart disease) can cause kidney cell damage, leading to kidney disease

The kidneys are responsible for several important functions in the body, including the following:

- Eliminating waste products through the urine
- Producing a hormone involved in the production of red blood cells
- Helping to maintain the body’s fluid balance/hydration
- Participating in the metabolism and elimination of many types of drugs
- Helping regulate levels of important electrolytes such as potassium and sodium

When kidney disease develops, these functions don’t occur properly, resulting in illness and (frequently) further progression of disease.

How Is Kidney Disease Different From Kidney Failure?

The term *kidney disease* describes many conditions that can affect the kidneys. However, *kidney failure* describes a condition in which kidney function decreases to such an extent that the kidneys are no longer able to effectively eliminate waste products, maintain hydration, and help regulate the balance of electrolytes in the blood.

Despite how the term may sound, *kidney failure* does not mean that the kidneys stop producing urine. In fact, because the kidneys can no longer concentrate urine, *increased* urine production
Kidney failure can occur acutely (over a period of hours or days) or chronically (usually over a period of weeks to months or longer). Antifreeze toxicosis is an example of a condition that can cause acute kidney failure. If diagnosed quickly and treated aggressively, acute kidney failure can be reversed in some cases. In contrast, chronic kidney failure is not reversible. Chronic kidney failure can result from a variety of causes (such as polycystic kidney disease or kidney stones), but it also commonly occurs in senior pets as a result of age-related decreased kidney functioning. The terms *chronic kidney disease* and *chronic kidney failure* are sometimes used interchangeably. These chronic kidney conditions tend to be progressive, meaning that they get worse over time. Although chronic kidney failure is not reversible, it can be successfully managed in many cases.

**What Are the Clinical Signs of Kidney Disease?**

The severity of clinical signs associated with kidney disease can vary depending on the presentation (acute or chronic) and the underlying cause. The clinical signs of kidney disease include the following:

- Vomiting
- Appetite loss
- Increased drinking and urination
- Lethargy (tiredness)
- Weight loss
- Unkempt haircoat (due to decreased grooming)
- Back pain or abdominal pain (may be associated with acute kidney failure)

**How Is Kidney Disease Diagnosed?**

As with many other medical conditions, diagnosis of kidney disease frequently begins with your veterinarian obtaining a medical history from you. The following can help your veterinarian determine if your pet may be dealing with a kidney problem: information about any medications or supplements your pet has received; anything unusual that your pet may have eaten, drunk, or chewed; previous illnesses; or any current signs of illness.

Diagnosis of kidney disease may require a combination of several tests. Your veterinarian may not recommend all of these tests, but the following are some tests that are frequently performed:

- **CBC and chemistry profile**: These tests are commonly performed together as part of a wellness screen or initial blood testing when a pet is ill. These tests provide an overview of many of your pet’s organ systems, including the kidneys. The CBC (complete blood cell count) shows the number of red blood cells (needed to carry oxygen to all the body’s tissues), white blood cells (needed to help fight off infection), and platelets. Because the kidneys are involved in the production of red blood cells, the numbers of these cells may
be reduced if a pet has kidney disease (particularly chronic kidney failure). The white blood cell count may also be abnormal if infection is present. The chemistry profile includes several kidney values that can change if there is a problem with the kidneys, such as kidney disease or kidney failure.

- **Radiography (obtaining x-rays):** X-rays of your pet’s abdomen may show abnormally shaped kidneys, kidney stones, or kidneys that are enlarged or shrunken.

- **Sonographic evaluation of the abdomen:** Evaluation of the abdomen by ultrasonography is a very useful test for examining the kidneys. The ultrasound machine is connected to a small handheld probe that is held against your pet’s abdomen. The probe sends out painless sound waves that bounce off of structures in the abdomen (such as the kidneys) and return to a sensor inside the ultrasound machine. This creates an image on a screen that shows your veterinarian the structure of your pet’s internal organs. The ultrasound can also “look inside” organs (like the kidneys) to detect masses, stones, cysts, or other problems.

- **Urinalysis:** Evaluation of a urine sample from your pet can provide critical information about kidney functioning. Urine that is too diluted, contains abnormal cellular debris, or contains protein and other material that should not be present can indicate that a pet may have kidney disease.

**How Is Kidney Disease Treated?**

Treatment of kidney disease can vary depending on the underlying cause and the patient’s overall condition. For example, if a pet has kidney stones, surgery may be recommended as the best treatment. Pets that are severely ill from kidney disease or kidney failure may need hospitalization and intensive care to recover. In other cases, antibiotics, fluids, and other medications given on an outpatient basis are effective. There are even special diets and dietary supplements that can help some pets with kidney disease.

Chronic kidney disease and chronic kidney failure are progressive, irreversible conditions. Treatment generally focuses on slowing the progression of disease and improving quality of life for the patient. Pets can sometimes experience a good quality of life for many years after being diagnosed with kidney disease or kidney failure. Your veterinarian will evaluate your pet and discuss the best methods of treatment with you.

Although kidney disease is frequently not preventable, regular physical examinations and wellness screening tests can increase the chances of early diagnosis and treatment.
Kitten or Adult Cat: Which Is Right for You?

- Americans own more than 90 million cats.
- Approximately 4 million homeless pets (cats and dogs) are euthanized each year; adopting your cat from a local animal shelter will help save a life.
- Choosing the right cat for you will create a happy, healthy relationship for both you and your cat.

What Do I Need to Know About Adopting a Cat?

Adopting a cat or a kitten is an important decision that can affect the next 15 to 20 years of your life. Adequate time should be taken to decide whether a cat or a kitten is right for you and your lifestyle. A new cat should be obtained from either a reputable breeder or an adoption shelter. Ask your veterinarian for recommendations on breeders or shelters in your area.

How Do I Choose Between a Kitten or Adult Cat?

While adopting a kitten may seem like your first answer, further thought should be given to adopting a cat. A kitten requires more time for socialization and generally more veterinary care during his or her first year of life. If you are a busy, working family, an adult cat may be the right choice for you. An adult cat can provide the love and companionship you are looking for from your cat, but with less work. Novice cat owners may want to steer away from high-maintenance cats that may require more grooming and socialization (such as shy or aggressive cats). Consider whether you will want to declaw your cat, as many shelters have cats that are already declawed.

While an adult cat may require less work during that first year, kittens can provide hours of entertainment as they chase their tail or play with their shadow. If you have small children, special attention should be given to not leave them alone with the new pet.

For senior citizens, a mature cat may be a better option than a kitten. Often, seniors are looking more for companionship than for the high energy and high maintenance that a kitten introduces into a new home.

Before you adopt, consider your lifestyle and how much time, effort, and money you are prepared to invest in a new cat or kitten. Your veterinary team can discuss these issues with you and help you consider your options.

Why Not Two Cats?

Cats generally like to have a furry companion in their life, too. Many shelters have siblings or a mother and her baby available for adoption. If you are considering having two cats in the future, it is generally easier to get both cats at the same time—especially if they are already friends. This will avoid possible conflict from introducing a new cat down the road.

What Should I Know About Bringing My New Cat Home?
Once you have decided which cat to adopt, make sure to set up a special room or area for your new pet. Whether it’s a cat or a kitten, your new pet will require an adjustment period, the length of which depends on the personality of your cat. It’s important to set up a space where the cat can eat, drink, use the litterbox, and have a quiet area away from other pets or members of the family. Once you feel your cat is adjusting to his or her new household, you can gradually increase free roaming time around the house. Kittens should be contained in a bedroom or bathroom at night for the first couple of months in their new home. This will prevent misbehavior from occurring while you are asleep.

**What Should I Know About Lifelong Care?**

Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. During that time, the new cat should be tested for parasites and infectious diseases such as feline leukemia virus (FeLV), especially if this testing was not performed before you obtained the cat. New cats or kittens should be observed closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.

Your veterinarian will also be able to recommend a vaccination schedule and determine if your cat has any health issues that need to be addressed. Vaccinations, spaying/neutering, and yearly wellness visits will help keep your cat healthy and happy for years to come.
Kitten Socialization

- Socialization is the learning process through which kittens become accustomed to being near various people, animals, and environments.
- Proper socialization can help eliminate behavior problems in the future and create a better bond between the pet and the family.
- When introducing kittens to new people, pets, or environments, provide praise or treats so the kitten associates a positive experience with each new stimulus.
- Do not introduce your kitten to other cats until he or she has been properly vaccinated; consult your veterinarian to determine when your kitten is ready to be around other cats.

What Is Kitten Socialization?

Socialization is the learning process through which a kitten becomes accustomed to being near various people, animals, and environments. By exposing kittens to different stimuli in a positive or neutral way, before they can develop a fear of these things, owners can reduce the likelihood of behavior problems in the future and help build a stronger bond between pets and the rest of the family. The critical time to socialize a kitten is during the first 3 to 4 months of its life.

Why Is Kitten Socialization Important?

Unfortunately, behavior problems remain the top reason that pets are relinquished to animal shelters. Proper socialization will help make kittens more tolerant of changes in their environment and help prevent common behavior problems in the future.

Why Should I Consider Kitten Kindergarten?

Attending a kitten training class led by a training specialist gives your kitten an opportunity for socialization with other kittens and with children and adults. Kitten kindergarten classes are offered by some veterinary clinics and pet supply stores.

Reputable training facilities will require that your kitten is vaccinated and dewormed before attending the course to ensure that kittens aren’t exposed to diseases or parasites when their immune system is still developing. Vaccinations should be given at least 10 to 14 days before the class. Before attending class, kittens should test negative for feline leukemia virus (FeLV) and feline immunodeficiency virus (FIV). Kittens should also be free of potentially contagious diseases such as upper respiratory infections and ringworm. Check with the training facility about their specific requirements. Also, consult your veterinarian to determine when your kitten is ready for class.

How Else Can I Socialize My Kitten?

The goal of socialization is to expose your kitten to different people, animals, environments, and stimuli in a safe manner, without overwhelming your pet.
Start by familiarizing your kitten with your touch. Whenever possible, you should handle your kitten’s paws, ears, mouth, and body. Once your kitten is comfortable with being handled, it will be easier for you to trim nails, brush teeth, clean ears, and give medications.

Next, introduce your kitten to people of different ages, sexes, heights, and races. If your kitten tolerates it, allow other people to touch his or her paws, ears, mouth, and body. This will help your kitten be more comfortable with being handled by others at the veterinary clinic or grooming facility.

It’s also important for your kitten to learn to be comfortable around other animals. Kitten kindergarten is a safe place to expose your pet to other kittens, because vaccination is usually required for all participants. In general, you should avoid exposing your kitten to other cats until he or she has been properly vaccinated. Exposing your kitten to an infectious disease, such as panleukopenia (feline distemper), when his or her immune system is still developing can have devastating results.

Kittenhood is also a great time to familiarize your kitten with all the sights and sounds of his or her world, from riding in a car to being around a vacuum cleaner. Once your kitten has been properly vaccinated, you can take your kitten to places such as the grooming or boarding facility to expose him or her to different sights, sounds, and smells. Each time you introduce your pet to a new stimulus, make sure to provide positive reinforcement in the form of praise, petting, or treats so that your pet associates a positive experience with new people, pets, or environments.

If your kitten will be indoor only, with limited exposure to other pets or environments, you may want to limit the number of pets and environments your kitten interacts with during the socialization period to minimize potential exposures to infectious diseases. Always discuss your socialization plans with your veterinarian before exposing your kitten to other pets and environments.


Laceration Repair

- A laceration is a cut or tear in the skin that may include damage to the muscles and other structures beneath the skin.
- While superficial (surface) wounds may sometimes be repaired using local anesthesia (which affects only the area of the wound), most laceration repairs require general (full) anesthesia of the pet.
- After the wound is cleaned and assessed, the cut edges are generally held together with suture material or skin staples.
- Lacerations should be repaired as soon as possible after injury to help ensure good healing.

What Is a Laceration Repair?

A laceration usually occurs as the result of a sharp object penetrating the skin and, possibly, the tissues beneath the skin. The resulting wound may be superficial, which involves a cut or tear in the skin only, or it may be deep, with damage to the tissues below the skin, such as muscles, tendons, blood vessels, or nerves. To repair a laceration, a veterinarian must clean and assess the wound before bringing the cut edges together with either suture material or skin staples.

When Should a Laceration Repair Occur?

If your pet has a laceration, see your veterinarian immediately. The longer the time between injury and repair, the more likely the tissues will become infected and healing will be delayed. Infections must be resolved before the laceration is repaired, to prevent bacteria from becoming trapped under the skin and forming an abscess (a localized area of pus and inflammation).

The skin may also contract and form scar tissue over time, which can make it more difficult to bring the tissue edges together. Prompt treatment will enable the veterinarian to determine if there is internal damage to bones and other structures that may not be visible on the surface.

How Is a Laceration Repair Done?

A laceration repair can be a minor surgery if the laceration is small or a major surgery if the laceration is large, deep, or infected. Superficial cuts can sometimes be repaired using local anesthetics, which affect only the area of the wound. However, thorough cleaning and exploration of lacerations usually require general (full) anesthesia of the pet. This allows immobilization of the area and minimizes stress and pain for the pet.

The veterinarian will clean the laceration and evaluate the extent of injury. In some cases, radiographs (x-rays) may be required to make sure there is no internal damage. The laceration is then repaired by bringing the ends of the severed tissue together with sutures (stitches) or skin staples. Deep wounds may require the placement of a temporary drain to prevent fluid buildup as the laceration heals.
Your pet may need to wear an Elizabethan collar to prevent licking or chewing of the surgical site until it is healed. Sometimes bandages or other protective coverings are used to protect the area after surgery. Pain medications or antibiotics may also be prescribed if needed.

**What Are the Benefits of a Laceration Repair?**

A laceration repair will help the severed tissues heal faster, with less likelihood of infection or excessive scar tissue. If tissues beneath the skin, such as muscles and tendons, have been damaged, the repair should help ensure that your pet regains full function of these tissues.
Lick Granuloma

- A lick granuloma is a thickened, hairless area of skin that results from excessive, repetitive licking or chewing.
- Signs of a lick granuloma include brown-stained hair around the lesion and an area of thickened skin that may be inflamed, infected, or ulcerated.
- The lesions usually occur on the lower legs of dogs.
- Excessive licking may be caused by underlying conditions, such as allergies, mites, and infections, or may be from boredom or other behavioral problems.
- Diagnosis may require skin scrapes, skin cultures, biopsies (tissue samples), blood work, and/or radiographs (x-rays).
- Resolving the lesion requires treatment for the underlying condition or behavioral modification and/or medications.

What Is a Lick Granuloma?

A lick granuloma is thickened, raised area of skin that is often hairless, inflamed, infected, or ulcerated, resulting from excessive, repetitive licking or chewing. These lesions are typically found on the lower legs, and may occur alone or on more than one limb.

Lick granulomas tend to occur in dogs more than cats, with a higher incidence in males than females. While lick granulomas may be seen on any dog, breeds with a higher incidence of this condition include Doberman pinschers, Labrador retrievers, Great Danes, German short-haired pointers, German shepherds, and Irish setters.

What Are the Signs of a Lick Granuloma?

The hair around a lick granuloma is often a brownish-red color, caused by saliva staining (substances in saliva stain the fur when licking has been repetitive). The lesion itself is usually bald, and the skin often appears thickened, like scar tissue. The skin may be inflamed, infected, or have sores. Sometimes, the licking has been so severe that the skin is gradually removed and tendons and other structures under the skin are exposed. Pets with lick granulomas may limp on the affected limb.

What Causes Lick Granulomas?

While the lick granuloma is caused by excessive licking, determining the cause of the licking can be a challenge. In some cases, an underlying disease or condition may cause the licking, or it may be a behavioral problem. Possible causes include:

- Allergies
- Mites
- Fungal or bacterial infection
- Foreign body under the skin
- Trauma
- Boredom
- Glandular disorder
- Underlying joint pain

**How Is This Condition Diagnosed?**

A lick granuloma is usually diagnosed by the appearance of the lesion and a history of the dog licking or chewing at the area. To determine the cause of the licking, your veterinarian may perform a number of tests, including skin scrapes (gently scraping the surface of the skin with a dull instrument to identify mites), skin cultures, skin biopsies (tissue samples), and blood work. He or she may also recommend a radiograph (x-ray) to see if there is a foreign body under the skin or if there has been trauma to the bone or joint beneath the lesion.

**How Is a Lick Granuloma Treated?**

Treatment for lick granuloma can take many months and usually requires some patience. If an underlying condition has been identified, treatment of this condition should help resolve the granuloma. Treatment may include medications such as antibiotics, antifungals, parasite treatment, antihistamines, pain medication, hormone supplements, or topical steroids.

Of course, preventing the pet from licking the area can help resolve the problem, as well. However, bandages, Elizabethan collars (a cone-shaped hood that fits over the head and prevents the pet from reaching his or her legs with the mouth), and bad-tasting substances can’t always stop a pet that is determined to lick the area.

If your veterinarian believes that boredom is at the root of the licking problem, he or she may recommend increasing human interaction with the pet, the addition of another animal companion to the household, longer periods of exercise, or chew toys to distract the pet from the lesion. In some cases, behavioral medications, such as antidepressants, may be needed.

Because lick granulomas can be difficult to resolve and can have underlying causes, the problem can recur. Notify your veterinarian if your pet seems to be exhibiting the behavior again.
Lipoma

- A lipoma is a benign (noncancerous) mass made of fat cells.
- These lumps may appear just under the skin anywhere on the body or inside the chest and abdomen.
- Middle-aged and older female dogs are more likely to have lipomas.
- All skin lumps should be examined by a veterinarian.
- A lipoma is diagnosed with a fine needle aspirate or biopsy sample.
- Since most lipomas are harmless, surgical removal is only necessary if they are large enough to cause discomfort or interfere with walking.

What Is a Lipoma?

A lipoma is a benign (noncancerous) mass that is made of fat cells. Owners often notice these lumps on the chest, abdomen, and limbs of their pets, but lipomas can also occur inside the chest and abdomen.

Middle-aged and older dogs, such as Labrador retrievers, Weimaraners, and Doberman pinschers, are more likely to have lipomas, although they can occur in any breed. Female dogs may be more likely than males to have lipomas. These fatty masses rarely occur in cats.

Unlike cancerous tumors, lipomas do not metastasize (spread throughout the body). Lipomas may appear alone, but dogs may have multiple fatty lumps. The exact cause of these masses is unknown.

Although lipomas are relatively harmless, dogs may develop other skin lumps that are more serious. You should never assume that any lump is a lipoma. A veterinarian should examine any new skin lump, especially those that change in appearance or grow rapidly.

What Are the Signs of a Lipoma?

Lipomas are typically round and soft, although some may be firm. These masses usually do not cause pain, unless they become large and interfere with the limb movement during walking or they affect organs inside the body.

How Is a Lipoma Diagnosed?

There’s no way to tell if a mass is a lipoma just by examining it. Your veterinarian will usually collect a fine needle aspirate, which involves inserting a needle into the mass and extracting cells. These cells are then examined under a microscope. Because fine needle aspirate samples are fairly small, some veterinarians may prefer to perform a biopsy of the mass to confirm a diagnosis.

These same tests will help your veterinarian differentiate a lipoma from a liposarcoma, which is a cancerous tumor arising from fat cells. Liposarcomas, which are uncommon, can invade local tissues and spread to other parts of the body.
How Is a Lipoma Treated?

Since lipomas are benign, it’s not necessary to surgically remove them unless they are large and causing your pet discomfort. If your pet is under anesthesia for another procedure, it may be practical to remove smaller lipomas at the same time.

Lipomas are often self-contained within a capsule, and surgical removal usually prevents their regrowth in a particular location. However, some lipomas may be infiltrative, meaning that they invade the muscle and other tissues. These masses are more difficult to remove with surgery alone. In these cases, radiation therapy may be necessary to prevent regrowth.
Litterbox Training Your Cat

- Cats are usually easy to litterbox train because they prefer to bury their waste.
- Cats may refuse to use the litterbox if something about it is unappealing.
- If you are having trouble litterbox training your cat, let your veterinarian know.

Basic Training

Cats are usually easy to litterbox train because they are naturally clean and prefer to bury their waste. First, make sure that your cat knows where the litterbox is. Confine your cat to a small area or room with clean water, fresh food, and a clean litterbox until he or she is successfully using the litterbox and seems comfortable. Do not use a covered litterbox during the training period because it might complicate the process. If your cat urinates or defecates outside the litterbox, place the waste in the litterbox; the smell should help your cat find and use the litterbox in the future. If your cat isn’t using the litterbox after a day or two, do the following: After your cat eats, place him or her in the litterbox, and briefly scratch the litter with your finger. However, don’t force your cat to stay in the litterbox; you don’t want your cat to have a negative experience in the litterbox.

Reasons a Cat Won’t Use the Litterbox

Cats may refuse to use the litterbox if something about it is unappealing. If your cat won’t use the litterbox, try addressing the following bulleted list, but do not punish your cat. He or she may have a medical or behavior problem that your veterinarian can address.

- The type of litter is unappealing. Most cats prefer an unscented, scoopable (sandlike) litter. Many owners also prefer scoopable litters because they control odors and absorb liquid (clump) well.
- The litterbox location is unappealing. Most cats prefer a quiet place with several escape routes. Keep your cat’s food dishes as far as possible from the litterbox.
- The litterbox is dirty. Scoop it out at least twice daily, add new litter as needed, and wash the box with baking soda or an unscented soap and fill it with clean litter once a week.
- The litterbox is too small.
- The litterbox has a liner or hood, which some cats dislike.
- The litterbox isn’t easily accessible.
- There aren’t enough litterboxes. Provide one litterbox per cat, plus one extra box.
- There’s too much litter in the litterbox. Most cats prefer the litter to be 1 to 2 inches deep.

If you are having trouble litterbox training your cat, let your veterinarian know.

Cleanup

Do not clean up your cat’s “accidents” with an ammonia-based cleanser. Because urine contains ammonia, cleaning with an ammonia-based product could tempt your cat to urinate in the same spot again. Instead, use a product specifically for cleaning pet accidents.
Liver Disease Testing

- Liver disease is a very general term used to describe several conditions that can damage liver cells.
- Diagnosis of liver disease may require a combination of several tests.
- If liver disease progresses, it can eventually lead to decreased liver function, liver failure, and death.

What Is Liver Disease?

“Liver disease” is a very general term used to describe several conditions that can damage liver cells. If the problem progresses, it can eventually lead to decreased liver function, liver failure, and death. Here are just a few medical conditions that can be associated with liver disease:

- **Hepatitis**: infection or inflammation of the liver; viruses, bacteria, parasites, or fungal organisms can be involved
- **Liver toxicity**: damage to liver cells associated with a drug or poison
- **Liver shunt**: a change in the flow of blood through the liver
- **Cancer**: cancer can spread to the liver from other places in the body; some cancers can also start in the liver
- **Gallbladder disease**: problems with production and release of bile can affect the liver

The liver is involved in hundreds of processes in the body, so liver disease can disrupt or change many normal body functions, including the following:

- Elimination of waste products from the body
- Metabolism of fats, proteins, and carbohydrates
- Release of red blood cells
- Production of proteins involved in blood clotting (known as “clotting factors”)
- Metabolism and elimination of many types of drugs
- Metabolism of vitamins and minerals

What Are the Clinical Signs of Liver Disease?

Because the liver performs so many functions, the clinical signs tend to be variable and nonspecific:

- Vomiting
- Appetite loss
- Diarrhea
- Weight loss
- Lethargy (tiredness)

Some other signs of liver disease can be more alarming, including fluid accumulation in the abdomen, spontaneous bleeding or bruising, yellow skin or gums (a condition known as “jaundice”), and seizures.
How Is Liver Disease Diagnosed?

As with many other medical conditions, diagnosis of liver disease frequently begins with your veterinarian obtaining a medical history from you. Information about any medications or supplements your pet has received, anything your pet may have eaten or chewed, previous illnesses, or any current signs of illness can help your veterinarian determine if your pet may have a liver problem.

Diagnosis of liver disease may require a combination of several tests. The following tests are commonly performed, but your veterinarian may not recommend all of them.

- **CBC and chemistry profile**: These tests are often performed together as part of a wellness screen or as initial blood tests when a pet is ill. They provide an overview of the health of many organ systems, including the liver. The CBC (complete blood cell count) shows the number of red blood cells (needed to carry oxygen to all the body’s tissues), white blood cells (needed to help fight off infection), and platelets. Some of these values may be abnormal in a pet with liver disease. The chemistry profile includes several “liver enzymes” or proteins that are associated with the liver. The levels of these proteins can change if there is a problem with the liver.

- **X-rays**: X-rays of your pet’s abdomen may show an abnormal liver size (liver enlargement, for example). They can also show free fluid in the abdomen, which can occur sometimes with liver disease.

- **Ultrasound**: Evaluation of the abdomen by ultrasonography is a very useful test for examining the liver. The ultrasound machine is connected to a small probe that is held against your pet’s abdomen. The probe sends out painless sound waves that bounce off of structures in the abdomen (such as the liver) and return to a sensor inside the ultrasound machine. This creates an image on a screen that can give your veterinarian a great deal of information about your pet’s internal organs. The ultrasound can also “look inside” organs to detect masses, abscesses, cysts, or other problems.

- **Bile acids testing**: Bile acids testing is a special diagnostic test intended to measure liver function. Bile acids are chemicals made by the liver. They are released during and after meals and help with digestion of fat. Afterward, they are reabsorbed into the liver and later eliminated from the body. Under normal circumstances, very small amounts of bile acids are present in the blood. However, in a pet with significant liver disease, liver function begins to decrease, leading to higher levels of bile acids. This test generally requires a few hours in the hospital, but it can help your veterinarian determine if your pet’s liver is functioning adequately.

Treatment for Liver Disease

Treatment for liver disease depends on the cause. For example, if a pet has a liver shunt, surgery may be recommended as the best treatment. For a pet with cancer, surgery or chemotherapy may be discussed as treatment options.
Pets that are severely ill from liver disease may need hospitalization and intensive care to recover. In other cases, antibiotics and other medications given on an outpatient basis are effective. There are even special diets and herbal supplements that can help some pets with liver disease. Your veterinarian will evaluate your pet and discuss the best method of treatment with you.
**Lymphoma (Lymphosarcoma)**

- Lymphoma, or lymphosarcoma, is a cancer of the lymphocytes, which are a type of white blood cell associated with the immune system.
- The exact cause of lymphoma is unknown.
- Cats that are positive for feline leukemia virus (FeLV) are more likely to develop lymphoma than cats that test negative for the virus.
- Boxers, golden retrievers, and basset hounds are at higher risk for the disease.
- Signs vary, depending on the part of the body affected, and may include enlarged lymph nodes, loss of appetite, weight loss, lethargy, coughing, difficulty breathing, vomiting, and diarrhea.
- Diagnosis usually requires a sample of the affected tissue.
- Treatment is usually not curative, but it may cause the cancer to temporarily go into remission.
- Chemotherapy is usually the treatment of choice for lymphoma.

**What Is Lymphoma?**

Lymphocytes are white blood cells that normally work to protect the body as part of the immune system. Occasionally, a change occurs within the cells that causes them to become destructive and reproduce uncontrollably. This is a type of malignancy, or cancer, called *lymphoma* or *lymphosarcoma*.

Dogs and cats may be diagnosed with lymphoma. Boxers, golden retrievers, and basset hounds are dog breeds that are at a higher risk for developing this type of cancer.

**What Causes Lymphoma?**

The exact cause of lymphoma is not known. However, cats that are positive for the feline leukemia virus (FeLV) are much more likely to develop lymphoma than cats that test negative for FeLV.

**What Are the Signs of Lymphoma?**

The signs of lymphoma can vary, depending on the part of the body affected. With generalized lymphoma, the pet may have enlarged lymph nodes, which can appear as swellings in the neck at back of the jaw, behind the knees, and other locations. The pet may seem relatively healthy or experience lethargy (tiredness), loss of appetite, and weight loss.

Mediastinal lymphoma occurs inside the chest. Pets with this kind of lymphoma may experience coughing and difficulty breathing. When lymphoma is in the gastrointestinal tract, cats and dogs may show signs of vomiting, diarrhea, and blood in the stool.

Lymphoma can also affect the spinal cord, kidneys, eyes, nose, and skin. Signs are associated with the affected organ, such as impaired movement with spinal lymphoma, increased drinking and urinating with kidney lymphoma, and raised growths on the skin with skin lymphoma.
**How Is Lymphoma Diagnosed?**

Your veterinarian will most likely recommend blood work, including an FeLV test for cats. Radiographs (x-rays) of the abdomen and/or chest can also be important to help identify affected regions of the body. An ultrasound exam of the chest or abdomen may help your veterinarian identify tissue abnormalities and affected lymph nodes.

A biopsy sample from the affected tissue is the best way to diagnose lymphoma. In some cases, lymphoma in dogs can be diagnosed from a lymph node aspirate sample, which involves placing a needle in the lymph node and extracting cells for examination under the microscope. However, a biopsy is the best way to determine the exact type of cell involved, as well as the aggressiveness of the tumor, if treatment will be pursued.

**How Is Lymphoma Treated?**

In many cases, treatment of lymphoma can cause the disease to go into remission, meaning that the signs of cancer resolve. This is usually temporary, and the lymphoma eventually returns.

If you wish to pursue treatment, your veterinarian may refer you to a veterinary oncologist, who specializes in cancer treatment. Additional tests may be needed to stage the disease or to determine how much of the body is involved.

In cases where the lymphoma is limited to one location, such as the nose, radiation therapy may be an option, but most treatment involves chemotherapy. Animals typically tolerate chemotherapy better than humans, but treatment may require several office visits and additional blood tests, which can become expensive.

If you choose not to pursue chemotherapy, treatment with steroids may help reduce the signs of lymphoma and make your pet more comfortable for a time.

**Can Lymphoma Be Prevented?**

There is no known way to prevent lymphoma, but early diagnosis and intervention can improve quality of life for pets with the disease. Early testing for FeLV can identify cats at greater risk for developing lymphoma. Cats that test positive for FeLV should be kept indoors to minimize exposure to other cats.

Cats that test negative for FeLV are less likely to develop lymphoma. If your cat is negative for FeLV and must go outdoors, make sure he or she is vaccinated against FeLV. Keeping your cat indoors can help prevent exposure to FeLV-positive cats and reduce the need for FeLV vaccination.
Malassezia Dermatitis

- *Malassezia* dermatitis is a yeast infection of the skin.
- It varies in severity from a mild itch to severe skin changes (in its most severe form, the skin thickens to resemble an elephant’s skin).
- It is usually secondary to a problem such as allergies or hormonal imbalances.
- Treatment is aimed at clearing the infection and treating the primary condition.

What Is *Malassezia* Dermatitis?

*Malassezia* dermatitis (MD) is a yeast infection of the skin caused by the organism *Malassezia pachydermatis*. *Malassezia pachydermatis* is a yeast organism that normally lives in small numbers in the ears and on the skin. The infection occurs when this organism grows in large numbers. In its most severe form, the infection can cause a thickening of the skin (lichenification), making it resemble an elephant’s skin (hence the name *pachydermatis*).

*Malassezia* dermatitis generally occurs when the skin’s normal defenses break down and allow overgrowth of the skin’s normal bacteria and yeast. Sometimes, MD occurs secondary to an existing bacterial skin infection or skin allergy, as the *Malassezia* organism takes advantage of the skin changes that occur with these conditions. Dogs are more commonly affected by MD, but the condition can also occur in cats.

What Are the Signs of *Malassezia* Dermatitis?

*Malassezia* dermatitis can occur anywhere on the body. The condition can be confined to the ears, but other common sites include the paws, face, underside of the neck, elbows, groin, and rear. MD can cause waxy or greasy itchy skin, rashes, crusts, scales, and thickening of the skin. Sometimes the pet’s skin and ears develop a sour odor resulting from MD.

What Are the Causes of *Malassezia* Dermatitis?

Any disruption to the skin’s ability to keep yeast from overgrowing can lead to MD. Environmental and food allergies, greasy skin disorders (such as seborrhea), bacterial skin infections, thyroid disease, and some other medical conditions can lead to MD.

How Is *Malassezia* Dermatitis Diagnosed?

Once your veterinarian looks at your pet’s skin and suspects MD, diagnostics may be performed in order to confirm a yeast infection and determine the primary cause. These tests may be among your veterinarian’s recommendations:

- **Skin testing**, which may include the following:
  - *Adhesive tape prep*: Placing a small strip of adhesive tape against the pet’s skin or fur for a few seconds permits skin cells and other debris to stick to the tape. When your veterinarian examines the tape under a microscope, bacteria, yeast,
inflammatory cells, cancer cells, skin parasites, and other abnormalities can often be seen.

- **Skin scrape**: By gently scraping the surface of the skin with a dull scalpel blade or similar instrument, cells just below the skin’s surface can be removed and examined under a microscope.

- **Bacterial culture**: A swab of the skin (or of a pustule) can be sent to the lab to determine what bacteria are present and which antibiotics should be used to treat the infection.

- **Fungal culture**: Hairs from infected skin can be sent to the lab to be tested for ringworm, MD, or other fungal infections.

- **Biopsy**: After administering a local anesthetic or sedation to the patient, a small piece of skin can be removed and sent to the lab for evaluation.

- **Blood testing**
  - Looks for internal reasons that the skin’s barriers to infection have broken down.
  - More extensive testing may be pursued to look for thyroid disease or other specific disorders.

- **Allergy testing**
  - Determines if an allergy exists and whether specific treatment for the allergy is possible.

### How Is Malassezia Dermatitis Treated?

It is very important to find the underlying cause of MD in order to keep the yeast under control. This can be difficult especially when the primary condition is resistant to treatment. Antifungal medications can be used to help decrease the numbers of *Malassezia* organisms on the skin and may be administered orally (as pills), topically (as an ointment or cream), or as a shampoo that your veterinarian prescribes. If the underlying cause for the MD involves a bacterial skin infection, parasites, hormonal imbalances, or allergies, these conditions must be specifically addressed to prevent recurrences. In most cases, if the primary condition is resolved, MD can be prevented from coming back.
Medical Causes of Weight Loss

- A variety of medical conditions can cause weight loss.
- Weight loss is not a disease—it is a sign of an illness. Therefore, the treatment for weight loss depends on the underlying cause.
- Regular physical examinations, routine wellness screening tests, and periodically weighing your pets at home can help with early detection of medical problems that can cause weight loss.

When Is Weight Loss a Cause for Concern?

Weight loss can result from decreased intake of calories, malnutrition (inappropriate diet), inadequate absorption or digestion of food (leading to malnutrition), or alterations in metabolism that make the body burn more calories than it is taking in. However, weight loss is not always an immediate cause for concern—it can be normal for pets to lose or gain small amounts of weight from time to time. For example, dogs may gain a little weight in the winter due to decreased activity and then lose those extra pounds when the weather warms up and activity increases. In fact, many pets fluctuate within a range of a few pounds on a regular basis.

Determining when weight loss is a problem can be quite subjective, but the following criteria are causes for concern:

- A pet is eating normal or increased amounts of quality food but is losing weight.
- The cause of weight loss is unknown.
- The amount of weight lost is significant (especially if it has occurred over a brief period of time).
- Weight loss is accompanied by other signs of illness.

What Medical Problems Can Cause Weight Loss?

Here are just a few of the medical conditions that can cause weight loss in dogs and cats. Some of these conditions are quite common and easily treatable, whereas others are life-threatening and require a long-term commitment to treatment or management:

- Malnutrition due to poor diet or underfeeding
- Anorexia (loss of appetite)
- Intestinal parasites
- Intestinal maldigestion (inability to digest food properly)
- Intestinal malabsorption (inability to absorb nutrition properly)
- Inflammatory bowel disease or other causes of chronic diarrhea
- Thyroid disease (in cats)
- Heartworm disease (in dogs)
- Diabetes
- Kidney failure
- Heart failure
- Liver disease
• Cancer

How Are These Medical Problems Diagnosed?

Medical history and physical examination findings provide valuable information for your veterinarian. The medical history may include trying to determine what and how much the pet is eating, how long the weight loss has been occurring, and whether any other signs of illness have been observed. Physical examination findings may reveal evidence of underlying illness. For example, a cat with thyroid disease may have an increased heart rate and enlarged thyroid glands in the neck.

Initial diagnostic testing to begin looking into the cause of your pet’s weight loss may include blood work, such as a serum chemistry profile, complete blood cell count (CBC), and thyroid panel. Urinalysis and fecal testing can also be helpful early in the diagnostic process. Additional testing for specific diseases, such as cancer, may include taking radiographs (x-rays), performing ultrasound examinations of the chest or abdomen to look for irregularities in these areas, or taking biopsies (small tissue samples) from lymph nodes or other organs.

More targeted testing may be recommended based on the results of preliminary tests.

How Is Weight Loss Treated?

Weight loss is not a disease—it is a sign of an illness. Therefore, the treatment for weight loss depends on the underlying cause. Fortunately, most conditions that cause weight loss are manageable or curable. Sometimes a diet change may be involved, but in other cases effective treatment of the underlying problem resolves the weight loss without altering the pet’s diet at all. If you suspect your pet may be losing weight, schedule an appointment with your veterinarian so that diagnostic testing can begin.

Can Medical Causes of Weight Loss Be Prevented?

Providing high-quality nutrition is a good way to help prevent weight loss in pets. It is also important to make sure (especially in a multipet household) that your pet is eating adequate amounts of food. Sometimes, one pet can “bully” another away from food, or one pet may eat significantly more than another. It may be necessary to feed pets in different rooms or feed cats on an elevated counter or platform to help prevent dogs in the house from stealing the cats’ food.

Some of the medical problems that cause weight loss cannot be prevented. However, regular physical examinations, routine wellness screening tests (including fecal and heartworm testing), and periodically weighing your pets at home (if possible) can help with early detection of medical problems that can cause weight loss. In many cases, early diagnosis means better treatment options and improved quality of life for sick pets.
Medication Monitoring

- Medication monitoring can help ensure that your pet is not experiencing unwanted side effects from a medication. It can also tell your veterinarian whether the medication may need to be adjusted.
- All medications have potential side effects.
- If you are giving your pet more than one medication, the medications may interfere with each other, causing side effects. This is called a drug interaction.
- Making sure that your veterinarian knows about all the medications and supplements you give your pet can help prevent drug interactions.
- If you suspect your pet is having side effects from a medication, contact your veterinarian immediately for advice.

What Is Medication Monitoring?

Medication monitoring can have many components. It can involve testing the levels of a drug in your pet’s blood to ensure that those levels are high enough to be effective, but not too high (which may cause problems or side effects). It may include discussing your pet’s medical history to help ensure that your pet is not experiencing any unwanted side effects from a medication. It may also involve having your veterinarian examine your pet periodically to ensure that the clinical signs associated with the illness being treated are responding appropriately to therapy.

In many cases, medication is given for a short time, like when antibiotics are used to treat infection. However, health issues like heart disease, allergies, arthritis, or epilepsy may require you to give your pet medication every day for months or years. Over time, the way your pet’s body tolerates medication may change, requiring your veterinarian to adjust or sometimes change a medication. Monitoring allows your veterinarian to assess these and other variables to make sure that your pet continues to do well on any medication.

When used appropriately, most medications have minimal ill effects. However, all medications can have unwanted or harmful side effects. Sometimes these effects are caused by sensitivity to an ingredient in the medication. Side effects can be mild, like a simple stomach upset, or they can be life-threatening. Either way, they should be taken seriously and reported at first notice. Part of treating your pet involves monitoring your pet at home so that any side effects can be reported to your veterinarian.

How Is Medication Monitoring Performed?

Medication monitoring begins before you leave your veterinarian’s office with a new medication. When your veterinarian prescribes a medication for your pet, he or she will explain what it is, what it’s for, how to give it to your pet, and details of potential side effects. For example, if your pet is prescribed insulin for diabetes, your veterinarian will spend time with you making sure that you know how to give it, how often it should be given, and what signs to look for that might indicate a potential problem. Before you leave the office, your veterinarian will work with you to make sure that you know exactly what to do, what changes to look for, and what to do if problems arise.
Sometimes medication monitoring involves blood tests. For example, your veterinarian may want to test your pet’s blood to find out information about your pet’s overall health and how well certain organs (such as the liver and kidneys) are functioning before prescribing certain medications. Sometimes, medication can change the results of these tests over time, so for long-term medications, your veterinarian may recommend repeating these tests periodically to help ensure that your pet’s body is continuing to tolerate the medication.

Checking blood levels of specific medications is also sometimes recommended. For example, if your pet is receiving phenobarbital (a medication used to control epilepsy), your veterinarian may recommend having the phenobarbital blood levels checked periodically. This can help ensure that the dosage of phenobarbital is within a range that can successfully control epilepsy but is not too high, which can be associated with unwanted side effects.

Any medication can cause side effects, so monitoring your pet at home for drug-related side effects is a very important part of medication monitoring. If you are giving your pet more than one medication, the medications may interfere with each other, causing side effects. This is called a drug interaction. Making sure that your veterinarian knows about all the medications you give your pet can help prevent drug interactions. Some veterinary practices ask you to fill out a checklist when you bring your pet in for a physical examination or surgery. Often, this list will ask for the names and types of medications your pet is currently receiving. It is very important to list all your pet’s medications. Don’t forget to also list vitamins, supplements, and natural products. This is especially true if you visit more than one veterinarian because the practices will not necessarily have access to each other’s information. You may want to bring your pet’s medications and supplements with you to the office.

Your veterinarian is an excellent source of information about your pet’s medications. Other possible sources of information include:

- The medication label
- Product inserts (these are not always available)
- Client information handouts

You should always read any printed instructions that come with the medication.

**Benefits of Medication Monitoring**

Medication monitoring can have many benefits, including making sure that your pet’s medical problem is responding to treatment, making sure that your pet is tolerating his or her medications, and minimizing the risk of potential side effects.

Observation is an important part of medication monitoring. Being aware of how your pet normally reacts to a medication can help you quickly recognize when something is wrong.

**If you suspect your pet is having a reaction to a medication, contact your veterinarian immediately for advice.**
Microchipping Your Pet

- Many lost pets are never returned to their owners because they do not have any form of identification.
- Microchips are a way of permanently identifying your pet.
- Microchips must be registered with a microchip company to reunite you with your pet.
- Microchipping is a simple, quick procedure that can be performed by your veterinarian.

Why Microchip?

It is recommended that you identify your pet even if you don’t plan to let him or her go outside. Even “indoor” pets can get out by accident, and many lost pets are never returned to their owners because they have no identification. Collars and tags are popular, effective methods of identification, but they can come off. Microchips, which are implanted just under the pet’s skin, are one way to permanently identify pets.

What Is a Microchip?

A microchip is a tiny electronic device—about the size of a grain of rice—that uses radio waves to transmit stored information when it is read by the right kind of scanner. Microchips for pets generally store a unique identification number. They do not need a power source, and they have no moving parts, so they do not wear out. Microchips are made of a material that is compatible with body tissues, so rejection and infection at the site are rare.

After injection, the microchip becomes encased in the tissue at the injection site. It may move slightly, but it usually stays at or near the place it was injected. To read the chip, a compatible scanner must be passed over it. Different microchip companies use different chips; however, there are scanners that can read all kinds of chips.

The Microchipping Procedure

Many veterinary offices have the equipment to implant and scan for microchips. Each microchip comes preloaded in a sterile syringe. To implant the chip, the veterinarian inserts the needle just under the pet’s skin between the shoulder blades and pushes the syringe plunger. The entire procedure, like a regular injection, is very quick and does not require pain medication or anesthesia.

How the System Works

When a lost or injured pet is taken to an emergency room or shelter, he or she can be scanned for the presence of a microchip. If the pet has a chip, the scanner reads the pet’s identification number. If the chip has been properly registered, the shelter or hospital can provide the number to the microchip company, which maintains the owner's contact information. The microchip company then contacts the owner, and the pet can go home.

Microchip Registration and Maintenance
To complete the microchipping process, you must register your pet’s microchip with the microchip company. Some companies charge an extra fee for registration. Unless the microchip company has your information, there is no way for the identification number on the microchip to link you with your lost pet.

Keep the contact information you give the microchip company (e.g., street address, home and cell phone numbers) up-to-date. You may want to confirm this information every year.

It is recommended that you continue to keep a collar on your pet and that you put a tag on the collar indicating (1) that your pet has a microchip and (2) the name of the chip manufacturer.

During your pet’s regular physical examinations by your veterinarian, the microchip should be scanned to ensure that it accurately transmits the identification number. Scanning is painless and only takes a few seconds.
Neutering

- Neutering is a surgical procedure in which the testicles are removed in a male animal.
- Neutering prevents unwanted reproduction and can help eliminate negative behavioral effects of male hormones, such as roaming and aggression.
- Neutering may also be performed to treat testicular and anal tumors and some prostate problems.

What Is Neutering?

Neutering, also known as castration, is a surgical procedure that involves removal of the testicles. It is a common surgical procedure performed on male dogs and cats to eliminate the ability to impregnate females. Neutering is also used to treat certain medical conditions, such as testicular cancer, anal tumors, and some forms of prostate disease.

How Is Neutering Performed?

The Presurgical Evaluation:
Your veterinarian may recommend a presurgical evaluation before neutering your pet. The presurgical evaluation may include a physical examination to ensure that your pet is healthy enough for surgery. Preanesthetic blood work may also be recommended. This testing is designed to help identify problems that may increase the risks associated with surgery or anesthesia. Your veterinarian may want to use pre-anesthetic blood work to check for several medical conditions, including infection, anemia (a low number of red blood cells), low blood sugar, inadequate blood-clotting ability, liver disease, and kidney disease.

If your pet has any preexisting medical issues, such as a heart problem, your veterinarian may recommend additional testing to determine if any precautions are recommended or if surgery should be postponed or cancelled due to health reasons.

Sometimes, the presurgical evaluation can be performed on the day of surgery. However, some veterinarians perform this testing a few days or weeks before the procedure is scheduled.

Surgery Day:
To reduce the risk of vomiting during the procedure, it is generally recommended that pets have an empty stomach before undergoing anesthesia. Your veterinarian will likely ask you to remove your pet’s food and water bowls the night before surgery and to withhold food and water on the day of surgery. If your pet eats or drinks before undergoing anesthesia, tell your veterinarian, as postponing surgery may be recommended. If your pet receives insulin or any other medications, ask your veterinarian what you should do on the day of surgery. You may be advised to adjust the medication dosage or to withhold medication for that day.

Before the surgery begins, your pet will be given anesthesia. This keeps your pet still, asleep, and completely pain free during the operation. There are many types of anesthesia; your veterinarian will choose the one that is best for your pet. Some types are given as an injection, while other anesthetics are gasses that are inhaled. During anesthesia, a small plastic tube is inserted into the patient’s airway to support breathing. The tube is connected to the anesthetic gas machine to give the patient a constant flow of anesthetic gas and oxygen. During this time, your veterinary team
may also connect monitoring equipment to constantly measure heart rate, breathing, and oxygen use during anesthesia.

Once your pet is asleep, the surgical site is shaved and scrubbed using a germicidal solution. The area is then draped with sterile cloths that help keep the surgical area sterile. The veterinarian and veterinary assistants then prepare for surgery through repeated handwashing with germicidal soaps and then put on sterile gowns, caps, masks, and gloves. Keeping everything sterile helps prevent infections.

The neuter surgery in a cat is performed through an incision that is made directly into the skin over the scrotum. The testicles are located and separated from surrounding structures. As the testicles are surgically removed, blood vessels are closed and double-checked for bleeding before being replaced into the incision. The scrotum is not sutured and is left open to heal.

For neuter surgery in a dog, the incision is made a few centimeters in front of the scrotum. The testicles are located, pushed up through the incision, and separated from surrounding structures. As with feline neutering, blood vessels are closed and double-checked for bleeding before being replaced into the incision. In canine neutering, the surgical incision is sutured closed.

In some dogs and cats, the testicles do not both descend into the scrotum as they should during normal development. When one testicle (or in rare cases, both testicles) fails to descend, the condition is called cryptorchidism (crypt – orchid – ism). Cryptorchidism is a medical concern because the undescended testicle can remain in the abdomen, where it can become cancerous or cause other medical problems. Neutering is slightly different when the patient has an undescended testicle. The normal testicle is removed as noted above, but the veterinarian generally needs to make a separate incision (sometimes into the abdomen) to remove the undescended testicle.

Whatever procedure your veterinarian uses, every effort will be made to keep your pet as safe as possible during and after the procedure. Once the surgery is completed, the surgical area is cleaned again, and the patient is permitted to awaken from anesthesia. Afterward, he will be monitored in a recovery area until he is awake and stable enough to go home. Additional pain medication is generally given at this time. Some hospitals keep surgical patients overnight, so they can be closely observed and monitored by hospital staff; however, other hospitals allow pets to recover at home.

At-Home Care After Surgery

Even the best and most successful surgery can result in complications if postoperative care is inadequate. Your veterinary team will review your home-care instructions before you take your pet home. Be sure to follow all instructions carefully and contact your veterinarian if you have questions or concerns after you get home. Here are just a few tips:

- **Food and water:** You may be tempted to give your pet a large meal after he returns home from being neutered. Don’t! Smaller meals are generally recommended for the first day or so. Ask your veterinarian when normal meals can be resumed.
• **Stitches:** Your pet may have stitches on the outside of the skin after surgery, but some veterinarians choose to bury the stitches underneath the skin or to use surgical adhesive to close the incision. Some suture material is dissolvable and does not need to be removed, whereas other stitches need to be removed after surgery (usually in 7 to 14 days). Your veterinarian will review these details and other at-home care details before you take your pet home from surgery. Even if stitches are not present, check the incision regularly for swelling, bleeding, bruising, or discharge and report any problems to your veterinarian.

• **Protecting the incision:** Your pet should not be permitted to lick or bite the surgical area. This can open the incision or cause a serious infection. Your veterinarian may recommend that your pet wear an Elizabethan collar to prevent tampering with the incision and stitches. This is a plastic cone that fits over your pet’s head (like an upside-down lamp shade) to prevent licking or biting of the surgical area.

• **Medication:** Be sure to give all medications as directed. If your pet vomits after receiving medication or has other complications, call your veterinarian.

• **Activity restriction:** Running, jumping, or using stairs should be avoided (if possible) for approximately 7 to 10 days after undergoing neuter surgery. Excessive activity can cause pain, bleeding, swelling of the incision, and other complications. Even if your pet seems perfectly fine and wants to be active, continue activity restriction as recommended by your veterinarian.

**What Are the Benefits of Neutering?**

There are many benefits to neutering your pet. Most importantly, neutering helps reduce pet overpopulation. Neutering also prevents testicular cancer, is helpful in treating certain anal tumors, and reduces the risk of certain prostate issues. Neutering can decrease negative male behaviors associated with testosterone, such as roaming and aggression. For male cats, neutering reduces the potency of unpleasant “tomcat” urine odors and reduces the likelihood of urine marking and other negative behaviors.

For most pets, the benefits of neutering far outweigh the potential risks. The decision to neuter or not is an important one, so be sure to discuss this health issue with your veterinarian.
Non-recognition Aggression in Cats

- Non-recognition aggression occurs when one cat is uncharacteristically aggressive toward a companion cat after a period of separation.
- Never let your cats “fight it out.” Interrupt aggression or fighting by clapping your hands loudly, squirting the aggressive cat with a water gun, or directing compressed air (without noise) at the aggressive cat.
- The aggressive cat should be confined and gradually reintroduced to the other cat using the guidelines below.
- Non-recognition aggression may be prevented by following the measures below.
- Any sudden change in your cat’s behavior could be a sign of a medical condition requiring a visit to your veterinarian.

The Basics

*Aggression* refers to threats or attacks. Aggressive acts in cats include hissing, growling, swatting, chasing, and biting. Cats can have various kinds of aggressive behaviors. Non-recognition aggression occurs when one cat is uncharacteristically aggressive toward a companion cat after a period of separation. For example, after one cat returns home from a veterinary visit, the cat that stayed home is aggressive toward the returning cat, who may flee, freeze (hold still), or fight back.

The cause of this type of aggression is not fully understood. Possible causes include the following:

- The returning cat is unrecognizable and/or perceived as a threat because he or she smells like the veterinarian’s office.
- The smell of alcohol or disinfectant on the returning cat reminds the aggressive cat of a negative experience at the veterinarian’s office.
- The returning cat may have discharged his or her anal sacs at the veterinarian’s office. The discharge may contain a pheromone (a natural feline odor that humans can’t smell) that signals danger to your other cat, causing him or her to become aggressive.

What to Do

Never let your cats “fight it out.” Cats don’t resolve their issues through fighting. Interrupt aggression or fighting by clapping your hands loudly, squirting the aggressive cat with a water gun, or directing compressed air (without noise) at the aggressive cat. Try to “herd” the aggressor into a separate room so that he or she can calm down, which might take several hours. If necessary, cover the aggressor with a large towel to help calm and handle him or her. Don’t try to soothe your cats right away; just give them time to calm down. An agitated cat may become aggressive toward any pet or person who gets close. If necessary, keep the aggressor confined overnight with food, water, and a litterbox.

Reintroduce your two cats only when the aggressor has completely calmed down and is back to normal. It may help to reintroduce your cats gradually through a screen, gate, or cracked door.
before allowing them full access to each other. Place your cats’ food bowls on opposite sides of
the barrier to encourage them to be close together while doing something they enjoy. Once both
cats appear relaxed, open the barrier between them little by little. If your cats remain relaxed,
they may be ready to be together again. If they show signs of aggression (e.g., growling, spitting,
hissing, swatting), separate them again and restart the process of gradual reintroduction.

Your two cats are likely to reestablish a relationship or at least tolerate each other, but future
episodes of non-recognition aggression may be likely.

Prevention

Non-recognition aggression may be prevented by taking the following measures after bringing a
cat home from your veterinarian’s office and before reintroducing him or her to your other cat(s):

- Ensure that your cat has fully recovered from sedation or anesthesia.
- Bathe your cat to remove veterinary odors.
- Keep your returning cat separate from your other cat(s) to give them time to remember
each other’s sounds and odors.

The following general guidelines can also help to reduce aggression:

- Neuter your cats. Unneutered males are especially prone to aggression.
- Separate your cats’ resources. Reduce competition between them by providing multiple,
  identical food bowls, beds, and litterboxes in different areas of your house.
- Provide additional feline-friendly areas (e.g., hiding spots) to allow your cats to space
  themselves out as they prefer.
- Reward your cats for getting along. Praise them or give them treats when you see them
  interacting in a friendly manner.
- Try using pheromones. Feliway (Ceva Animal Health, Inc., St. Louis, MO) is a product
  that mimics feline pheromones that may reduce tension between your cats.

Find Help

Any change in your cat’s behavior could be a sign of a medical condition. If your aggressive
cat’s behavior does not improve, take your cat to your veterinarian for a checkup. In addition,
you may consider contacting a certified applied animal behaviorist (CAAB or ACAAB after the
last name) or a board-certified veterinary behaviorist (DACVB after the last name). These
qualified experts can evaluate the problem and help you manage or resolve the conflict between
your cats.

Signs of an Attacking Cat

- Staring with constricted (small) pupils
- Piloerection (raised hair) along the shoulders and tail
- Facing the returning cat and appearing ready to pounce
Signs of a Defensive (Returning) Cat

- Dilated pupils: the center (iris) of the eyes opens so that the pupils become large
- Ears pressed back against the head
- Arched back
- Piloerection (raised hair)
- Facing the aggressor sideways
- Hissing, spitting, and/or growling
- Rolling onto back to fight if there’s no escape
Obesity in Pets: Tipping the Scale in Your Favor

- Approximately half of the pets in the United States are either overweight or obese. The health consequences of obesity include increased risk for joint disease, heart and respiratory problems, and diabetes.
- As with humans, weight management is not a quick fix, and the associated goals and lifestyle changes should be long-term in order to be successful.

Why Is Weight Control Important?

Currently, studies estimate that approximately half of the pets in the United States are either overweight or obese. The health consequences of obesity in pets include increased risk for joint disease, heart and respiratory problems, and diabetes. Some researchers also have redefined obesity as a chronic inflammatory condition that can have other harmful effects in the body. Being overweight is not cute and it is not just a nuisance; it is now being recognized as a medical problem that should be managed long-term to reduce associated health risks.

On the positive side, research has shown that keeping dogs lean can increase their lifespans by as much as 2 years. While the same research has not been done in cats, it stands to reason that eliminating the health risks associated with obesity could extend their lives as well.

Why Is Weight Control So Difficult?

Despite the fact that many of us struggle to help our pets lose weight, the formula for weight management is actually rather simple—if calories burned through activity exceed calories taken in through food and treats, weight loss will occur. Unfortunately, this formula can seem difficult to implement for several reasons.

First, many pet owners don’t know the daily calorie requirements for a dog or cat. Even for a conscientious pet owner, it can be difficult to understand pet food labels and realize how many calories a pet is eating. Sometimes (especially when there are several family members who interact with a pet), it can be difficult to know exactly how much and how often your pet is eating. Even if you think your pet may not be eating too much, weight gain can happen so gradually that you are unaware of it until the problem is obvious to an outside observer. Also, sometimes life just gets in the way and things like exercise can slip by the wayside.

How Is Obesity Diagnosed?

Most human physicians use body mass index scales (tables that compare height to weight) to help determine if a patient is overweight. Many veterinarians are now using a relatively standardized system called body condition scoring to help determine if pets are overweight. There is a 5-point scale in which a dog or cat that has a body condition score (BCS) of 3 is at the ideal weight, a score of 1 to 2 indicates the pet is underweight, and pets with a score between 4 and 5 are overweight or obese. There is also a similar 9-point scale in which a score of 4 to 5 is considered ideal weight, 1 to 3 is underweight, and 6 to 9 is overweight or obese.
If your pet’s BCS is not ideal, your veterinarian may begin the discussion with you by asking what your pet eats each day and how much exercise he or she gets. Some pet owners are surprised when they add up how much food, treats, and table scraps a pet may consume in a day. Your veterinarian may also want to discuss diagnostic testing to investigate any medical problems, such as thyroid disease, that can affect a pet’s body weight.

**How Can I Tip the Scale in My Pet’s Favor?**

Once you and your veterinarian determine that your pet has a weight problem, and underlying medical concerns have been addressed, the next steps involve deciding how to correct the problem. As with humans, weight management is not a quick fix; the associated goals and lifestyle changes should be long-term in order to be successful. Here are some tips that can help get weight loss started and keep it going:

- **Pick reasonable weight loss goals:** Your veterinarian can help you determine how many calories your pet needs each day, and how many pounds your pet needs to lose. Once this information is understood, your veterinarian can work with you to develop a healthy, reasonable schedule for meeting specific weight loss goals.

- **Start with a plan that is going to work for you and your pet:** Your veterinarian may recommend increased activity (such as leash walks, swimming, or other exercise) along with dietary modifications to help your pet lose weight. Talk frankly with your veterinarian about how much time and effort you can commit to your pet’s weight loss program. If leash walks are not possible, or you can’t change your pet’s diet, ask about other options. If your pet has joint problems, like osteoarthritis, you may need to address joint pain before your pet is willing to become more active. You and your veterinarian need to work together to find the best weight management solutions. There are generally many ways to approach weight loss—there is even a “diet pill” formulated for dogs to help them lose weight. However, there is no diet pill for cats, and exercise can be a particular challenge for indoor cats. Talk to your veterinarian about ways to increase activity that will work for you and your pet.

- **Commit to your pet:** This can be challenging because it means understanding that your pet’s obesity is a problem that you need to commit to solving without making yourself feel guilty. Perhaps some mistakes were made, but having an overweight pet does not mean you are a bad person. So start the process by giving yourself a break. Pointing fingers does not solve the problem—try to focus instead on what is going to happen from today forward!

- **Measure:** Measure the amount of food you are feeding your pet each day. If you don’t know how much you are feeding, there is no way to know how many calories your pet is eating. Don’t forget to check the number of calories in treats, as these can also add up on a daily basis. If you must give treats, consider low-calorie alternatives, like raw carrots, green beans, or air-popped popcorn for dogs.
• **Learn how to overcome barriers to success**: Barriers to success include giving treats or extra food, letting the overweight or obese pet have access to another pet’s food, or feeling guilty and giving in when your pet begs for food. Other barriers are exhibited by the pets themselves and include refusal to eat a diet food or to exercise. Inability to overcome these barriers on a daily basis will doom any weight loss program to failure. Talk to your veterinarian about ways to overcome them.

• **Understand the importance of this lifestyle change**: Being overweight increases the risk of certain medical conditions and can shorten your pet’s life. It may be difficult to withhold treats and table food from a pet that is used to getting them, but before you give in, think about the big picture! If you want your pet to be healthy and to live a longer life, weight management needs to be part of that plan.

• **Make monitoring fun**: Your veterinarian may recommend seeing your pet for periodic weight checks to keep track of how your weight management program is progressing. Try to make this as much fun as possible. Consider scheduling an extra trip to the park for a walk after each weigh-in. Or take a trip to a pet store for a new toy after key weight loss goals are achieved. Some veterinarians offer programs to help encourage you through the weight loss process, like posting “before” and “after” photos of pets. This can give your self-esteem a boost, as well as encourage another pet owner who may still be struggling with his or her pet’s weight problem.
Ophthalmic Exam

- An ophthalmic exam is a thorough examination of the pet’s eyes and the surrounding tissues.
- The exam may be performed by your veterinarian or by a veterinary ophthalmologist (an eye-care specialist).
- The exam is generally non-invasive and painless for your pet.
- The kind of tests performed depend on the nature of the pet’s eye problem.
- Pets with eye or vision trouble should be seen by a veterinarian immediately.

What Is an Ophthalmic Exam?

During an ophthalmic (eye) exam, a veterinarian may perform a number of tests. These tests can help identify (1) problems with the eyes or (2) underlying diseases that may affect the eyes. Your veterinarian may conduct the exam or recommend that a veterinary ophthalmologist (an eye-care specialist) evaluate your pet.

Why Should Pets Receive an Ophthalmic Exam?

Your pet’s eyes should be examined as part of a regular physical exam. However, more thorough testing is needed in the following circumstances:

- There is an abnormal appearance to one or both eyes.
- Your pet shows signs of pain, such as holding an eye closed, or rubbing at the eyes.
- You suspect that your pet is experiencing changes in vision.
- An eye injury has occurred.

How Is an Ophthalmic Exam Done?

An ophthalmic exam may include many different tests. While a complete description is beyond the scope of this article, the most common tests are outlined here. Your veterinarian may choose to conduct some or all of these tests, depending on the nature of your pet’s problem.

The ophthalmic exam often begins with an evaluation of the pet’s vision. The veterinarian may observe how the pet moves around the room or if he or she follows a cotton ball when tossed near the eyes. A menace test may also be conducted to see if the pet blinks when a finger is moved toward, but without touching, the eye.

A pupillary light reflex test is used to evaluate the retina (the sensory membrane that lines the eye), the muscles controlling the iris (the colored portion of the eye), the nerves, and the part of brain that controls visualization. The veterinarian will shine a bright light into each eye and evaluate both eyes for pupil constriction.

If the veterinarian is concerned about tear production, he or she may perform a Schirmer tear test. A small strip of paper is positioned in each lower eyelid and held in place for 60 seconds. This test can help determine if your pet is producing enough tears to lubricate the eye properly.
An ophthalmic exam usually includes a thorough evaluation of the outer eye structures, including the tissues around the eyes, the eyelids, the duct where the tears drain from the eyes, and the cranial nerves that affect the eyes. At the same time, the veterinarian will check the eye for inflammation and infection as well as for foreign bodies and unusual growths. The lens of the eye will also be examined for signs of cataracts.

It is common for pets to inadvertently scratch the cornea (the clear layer on the front of the eye). Because these painful abrasions or ulcers are not always visible with the naked eye, your veterinarian may conduct a fluorescein stain test. When a small amount of lime-green dye is placed in the eye, any defect in the cornea will take up the dye, displaying the location and size of the abrasion.

Another painful condition for pets is glaucoma (high eye pressure caused by improper fluid drainage within the eye). Certain breeds and some diseases, such as diabetes, are associated with glaucoma.

Before testing eye pressures, the veterinarian will first place a few drops on the eye to numb the eye surface. Most likely, the veterinarian will use an instrument that looks like a pen to gently tap the eye surface. This instrument provides a reading of eye pressure. High pressure is a sign of glaucoma, while low pressure may be a sign of uveitis (inflammation of an interior layer of the eye).

An ophthalmic exam also includes a thorough inspection of the fundus (the back of the eye). A few drops will be placed into your pet’s eyes to dilate (enlarge) the pupils. It may take 15 to 30 minutes for the drops to work. The veterinarian will use a special instrument to examine the interior of the eye, including the retina, the blood vessels, and the optic nerve.

**What Are the Benefits of an Ophthalmic Exam?**

If you notice any abnormality in your pet’s eyes or vision, contact your veterinarian immediately. Many eye conditions are extremely painful or could result in the loss of vision, if not attended to promptly. An ophthalmic test will help identify the source of the problem so that your pet receives proper treatment and pain relief as soon as possible.
**OraVet' Dental Sealant**

- OraVet Dental Sealant is an invisible, polymer sealant that is applied to your pet’s teeth by your veterinarian after a dental cleaning.
- The sealant adheres to teeth to create an invisible physical barrier that helps prevent bacteria from accumulating on teeth.
- The sealant may be followed by OraVet Plaque Prevention Gel, a substance that is applied to the pet’s teeth by the owner on a weekly basis.
- OraVet Dental Sealant has been clinically proven to significantly reduce plaque and tartar formation.

Most dental disease starts with the accumulation of plaque and tartar on a pet’s teeth. These substances contain bacteria, which can get under the gums and weaken the supporting tissue around the teeth. As a result, abscesses (pus-filled swellings) can form, and teeth may loosen, become painful, or fall out. Bacteria may also enter the bloodstream and infect the heart, kidneys, and liver. A professional veterinary dental cleaning is required to remove plaque and tartar from the teeth and beneath the gum line.

**What Is OraVet Dental Sealant?**

Once plaque and tartar are removed during a dental cleaning, your veterinarian may apply OraVet Dental Sealant. This odorless, tasteless sealant adheres to the teeth to create a physical barrier that helps prevent bacteria from accumulating on teeth. Of course, nothing can replace daily brushing. But OraVet Dental Sealant has been clinically proven to significantly reduce plaque and tartar formation.

**What Is OraVet Plaque Prevention Gel?**

If your veterinarian has applied OraVet Dental Sealant to your pet’s teeth, he or she may recommend the use of OraVet Plaque Prevention Gel for your pet at home. You can apply this product to your pet’s teeth on a weekly basis. When spread along the teeth and gums, the gel helps prevent further bacterial invasion.

**What Are the Benefits of the OraVet System?**

Most dental diets and treats are designed to help remove plaque once it has formed on the teeth. The OraVet system is designed to help prevent plaque and tartar from occurring in the first place. Still, it can’t prevent all plaque and tartar. But if you can’t brush your pet’s teeth every day, the OraVet system can help.

The more you can do to keep your pet’s teeth clean, the more you can protect your pet from the pain and discomfort of dental disease. Regular at-home dental care can also prolong the time between professional dental cleansings.

Ask your veterinarian if the OraVet dental care system is right for your pet.
Patellar Luxation

- Patellar luxation occurs when the pet’s patella (kneecap) slips out of its normal position on the femur bone, causing pain, lameness, and instability in the knee.
- Severity of patellar luxation is graded on a scale of 1 to 4.
- Surgical correction may be recommended.
- Failure to treat patellar luxation can result in arthritis and lead to other orthopedic problems.

What Is Patellar Luxation?

Normally, the patella (kneecap) sits in a groove at the bottom of the femur (the major bone of the upper leg), where the femur and tibia (the major bone of the lower leg) meet at the knee. The patella is held in place by tendons and ligaments that keep it relatively stable against the femur. Patellar luxation occurs when your pet’s patella luxates from (slips out of) its normal position. The kneecap can slip to either the inside (medial patellar luxation) or the outside (lateral patellar luxation) of the femur.

Patellar luxation can occur in one or both knees, and many dog breeds can be affected. Cats can also be affected, but not as commonly as dogs. Patellar luxation may be linked to an inherited abnormality or caused by injury or trauma.

What Are the Signs of Patellar Luxation?

Clinical signs associated with patellar luxation may not be obvious. However, one of the classic signs is a characteristic “skipping” gait. Pets will occasionally appear to “skip” as they hold the affected leg up while walking or running. A playing pet may suddenly yip in pain when the luxation occurs and then hold the leg up while continuing to run or play. These episodes can last for a few strides to a few minutes. In more severe cases, pets may remain painful for days.

The severity of patellar luxation is graded on a scale of 1 to 4:

- Grade 1—The patella easily and frequently pops out of its groove and then immediately pops back in.
- Grade 2—The patella pops out of normal position but doesn’t immediately go back. It must be replaced by pushing it back into normal position.
- Grade 3—The patella is out of normal position most of the time. If it is replaced by pushing it back into position, it will immediately pop out again.
- Grade 4—The patella is out of normal position and locked in this luxated position; it cannot be manipulated back into its groove.

The grade of patellar luxation does not necessarily correspond to the dog’s degree of lameness. For example, a dog with a grade 1 or 2 luxation may be lame or may seem to walk completely normally, while a dog with a grade 4 luxation may have figured out how to change his or her gait so that the knee is not painful. In this case, lameness may not be obvious.
**How Is Patellar Luxation Diagnosed?**

Patellar luxation is sometimes diagnosed during a routine physical examination when a veterinarian feels the knee joint. If the dog is very painful, sedation may be recommended so that a more thorough examination of the knee can be safely performed.

Radiographs (x-rays) are sometimes recommended to further evaluate the kneecap and other structures in the knee. Because a luxating patella affects the stability of the knee, many dogs with this problem develop arthritis over time. Some of these changes may be visible on x-rays.

**How Is Patellar Luxation Treated?**

Pets that have been diagnosed with patellar luxation but do not exhibit any clinical signs or that show only occasional signs should be monitored. Maintaining an ideal body weight and following a regular veterinarian-approved exercise program may aid in managing the condition. Joint supplements may be recommended, as well as pain medication for occasional episodes. Unless the condition progresses, surgical correction may not be recommended.

Surgery is typically considered for cases where the degree of lameness is significant. Surgical therapy typically seeks to stabilize the patella in its proper groove. Several procedures can be used to accomplish this. Your veterinarian will evaluate your pet and recommend the most appropriate procedure. After surgery, it is important to closely follow your veterinarian’s instructions regarding limitations on activity and containment to allow the surgical site to heal. Pain medications will be provided as needed, and physical therapy may be recommended.

If left untreated, patellar luxation can result in significant damage to the joint, leading to the development of arthritis and other conditions, such as cruciate ligament rupture.
Pemphigus

- Pemphigus is a potentially fatal autoimmune disease of the skin.
- Skin cells are under attack by the dog or cat’s own immune system.
- Pemphigus can be treated with short- or long-term use of immunosuppressive medications.
- Disease resistance to treatment and side effects of medications account for most deaths caused by this disease.

What Is Pemphigus?

Pemphigus is an autoimmune disease in which the body attacks the connections between its own skin cells, causing blisters to form on the skin and mucus membranes. Autoimmune diseases result when the body’s immune system does not recognize itself. Cells that normally attack invading viruses and bacteria begin attacking the body’s own cells, causing damage. The term *pemphigus* comes from the Greek word for pustule (a blister on the skin that is filled with pus).

In pemphigus, sores form where the skin cells can no longer bind to one another. Several forms of pemphigus affect dogs and cats. The three most common ones are pemphigus erythematous, pemphigus foliaceus, and pemphigus vulgaris. The first two forms lead to the destruction of the skin’s surface cell connections, resulting in disruption of the skin surface. Pemphigus vulgaris affects the underlying tissues and leads to deep ulcers in the skin.

What Are the Signs of Pemphigus?

The signs of pemphigus vary by form. They include:

**Pemphigus erythematous (mild lesions)**

- Scales, crusts, pustules, redness, and hair loss, generally found on the nose, ears, or face

**Pemphigus foliaceus (moderate lesions)**

- Localized: Scales, crusts, pustules, redness, and hair loss, located on the face, feet, and ears
- Generalized: Skin changes occur over most of the skin’s surfaces, and non-skin related signs may also be seen, such as pain, itching, fever, lameness

**Pemphigus vulgaris (severe lesions)**

- Deep erosions, blisters, and crusts may be located in the mouth, armpits, and groin
- Pain, fever, appetite loss

How Is Pemphigus Diagnosed?
There are several possible reasons for the development of pustules, crusts, or blisters on the skin. They may be caused by allergic reactions to insect bites, food or environmental allergies, ringworm, mites, skin infections, or a variety of other conditions. In order to narrow down the list of possibilities, your veterinarian will ask for a thorough history, including questions about your pet’s previous medical history, diet, medications, supplements, travel, exposure to the outdoors, and the use of flea and tick control products. After a full physical exam, your veterinarian may recommend preliminary tests such as blood work, bacterial culture and sensitivity testing, and skin scrapings.

If initial testing does not identify the cause of the lesions, a skin biopsy (tissue sample) may be recommended. Pemphigus is diagnosed based on the appearance of the skin cells and their attachments to each other. The different forms of pemphigus are determined by the slight variations in these attachments.

How Is Pemphigus Treated?

Because pemphigus is caused by an overactive immune system, treatment is aimed at suppressing the immune system. Steroids (given at high doses) are the most common medication prescribed. Topical treatment may be enough in mild cases, but for more severe cases oral medication is needed to get the disease under control. Ideally, the medication can be tapered over time and eventually stopped altogether. However, many pets must receive medication for the rest of their lives in order to keep the disease in remission.

If infection has occurred in the damaged skin, antibiotics will also be needed. Some severe cases of pemphigus don’t respond adequately to steroids alone and require stronger immunosuppressive drugs similar to those used to fight cancer.

Side effects of immunosuppressive drugs can limit their usefulness. They suppress the immune system as a whole, leaving the rest of the body susceptible to infection. They can also cause other problems such as altered bone marrow functioning. In addition, long-term steroid use can cause other complications. Your veterinarian will discuss his or her treatment plan with you and will recommend the appropriate medication for your pet’s condition.

What Is the Outcome for Pets With Pemphigus?

Pemphigus is a serious disease that, depending on the form, may result in death if left untreated. The most common cause of death is euthanasia, performed when medications are unsuccessful or their side effects are too severe. It is therefore very important to get a correct diagnosis and monitor treatment closely for recurrence and side effects.
Periodontal Disease in Cats

- More than 85% of cats over 4 years of age have periodontal disease.
- Periodontal disease is a progressive inflammation of the supporting structures around the teeth.
- Signs of periodontal disease include bad breath, redness or bleeding along the gum line, drooling, difficulty chewing, and loose or missing teeth.
- Periodontal disease is diagnosed by examining the teeth and supporting structures while the pet is under anesthesia.
- Gingivitis (inflammation of the gums) can be reversed with a thorough dental cleaning and polishing.
- Loss of tooth attachment, or bone loss, cannot be reversed.
- Treatment of periodontal disease may include antibiotics and other dental procedures, including tooth extraction.
- Regular, at-home dental care, with periodic veterinary dental cleanings, is the best way to prevent periodontal disease and keep your cat’s mouth healthy.

What Is Periodontal Disease?

More than 85% of cats over 4 years of age have evidence of periodontal disease. Periodontal disease is a progressive inflammation of the supporting structures surrounding the teeth and is the main cause of early tooth loss.

What Causes Periodontal Disease?

Periodontal disease starts when bacteria form plaque on the teeth. Within days, minerals in the saliva bond with plaque to form tartar, a hard substance that adheres to the teeth. The bacteria work their way under the gums and cause gingivitis, which is an inflammation of the gums. Once under the gums, bacteria destroy the supporting tissue around the tooth, leading to tooth loss. Inflammation of the bone and tooth support structures is referred to as periodontitis. The combination of gingivitis and periodontitis is known as periodontal disease. Bacteria associated with dental disease can travel in the bloodstream to infect the heart, kidneys, and liver.

What Are the Signs of Periodontal Disease?

The signs of periodontal disease include:

- Bad breath
- Redness or bleeding along the gum line
- Drooling, which may be tinged with blood
- Difficulty chewing
- Pawing at the mouth
- Loose or missing teeth
- Facial swelling
- Nasal discharge
- Gum recession
How Is Periodontal Disease Diagnosed?

Your veterinarian can see signs of gingivitis and tartar buildup by examining your cat’s mouth. However, since most periodontal disease occurs beneath the gum line, the only way to truly assess your cat’s mouth is to perform an examination while your pet is under anesthesia. Your veterinarian can use a dental probe to measure any loss of attachment around each tooth and take dental radiographs (x-rays) to assess for bone loss, abscesses, and other problems.

How Is Periodontal Disease Treated?

Treatment depends on the severity of the disease. If your cat has mild periodontal disease, consisting of gingivitis without any bone loss, a thorough dental cleaning that includes the area beneath the gums, followed by dental polishing, can help reverse the problem.

If there has been a loss of the supporting structures around the teeth, however, this cannot be reversed. Your veterinarian may need to apply antibiotics beneath the gums and perform dental procedures, which may include tooth extraction.

How Can I Keep My Cat From Getting Periodontal Disease?

An important way to prevent dental disease is regular home dental care. Daily brushing can help remove plaque before it turns into tartar. You can use a child’s toothbrush or purchase a finger brush from your veterinarian. Human toothpastes should be avoided because they contain substances that pets shouldn’t swallow in large quantities. Pet toothpaste is available in flavors such as chicken, seafood, and malt. If your cat won’t permit brushing, there are mouth rinse solutions (mouthwash for pets) that target plaque bacteria and help promote healthier teeth and gums.

There are several dental diets and treats that can also help keep plaque and tartar to a minimum. These diets tend to have larger kibbles to provide abrasive action against the tooth surface when chewed, or they may include ingredients to prevent tartar mineralization. Ask your veterinarian which dental diets or treats are best for your cat, and don’t forget to keep scheduled appointments for follow-up dental checkups.
Pet Cardiopulmonary Resuscitation (CPR)

- If your pet has a cardiac arrest, you can help save his or her life by performing cardiopulmonary resuscitation (CPR).
- By distributing much-needed oxygen and blood throughout a pet’s body, CPR can help do the work that the lungs and heart have stopped doing.
- If you think that your pet’s breathing or heartbeat has stopped, if possible, have someone call your veterinarian while you perform CPR.

Cardiac arrest means that the heart is not beating and breathing has stopped, resulting in a lack of oxygen and blood throughout the body. If your pet has a cardiac arrest, you may be able to help save his or her life by performing cardiopulmonary resuscitation (CPR), which is sometimes called cardiopulmonary–cerebral resuscitation (CPCR), until help arrives or you can get your pet to your veterinarian. By distributing much-needed oxygen and blood throughout a pet’s body, CPR can help do the work that the lungs and heart have stopped doing.

If you think that your pet’s breathing or heartbeat has stopped, it is important to stay calm. If someone is with you, have him or her call your veterinarian while you do the following:

**Step 1: Check for Responsiveness**

First, check your pet’s breathing by placing your hand in front of his or her nose and mouth, but do not cover them and block the airway. Check for a heartbeat by placing your ear against the area where your pet’s left elbow touches the chest.

**Step 2: Clear the Airway**

If you don’t see or feel your pet breathing, immediately ensure that the airway is clear. Pull the tongue forward out of the mouth, but be careful: even an unresponsive animal can bite. Look into the throat for a foreign object or obstruction. If you find one, remove it carefully. Move your pet’s chin away from the chest until the neck is straight, but don’t move the neck if you suspect it is injured.

**Step 3: Artificial Respiration**

Place your pet on his or her right side, straighten the head and neck, close the mouth, and breathe directly into the nose, but not the mouth, until the chest expands. If the chest doesn’t expand, check again for a foreign object in the throat and straighten the airway. When you get the chest to expand, perform artificial respiration by holding the jaws closed and blowing into the nostrils once every 3 seconds. Ensure that no air escapes between your mouth and your pet’s nose.

For cats and small dogs, be sure to take very small breaths so the chest moves only a little bit. You can injure small lungs by forcing too much air (under pressure) into them.

**Step 4: Chest Compressions**
Do not begin chest compressions until you’ve cleared the airway, started artificial respiration, and then confirmed that there is no heartbeat. Your pet’s heart is located in the lower half of the chest on the left side, behind the elbow of the front left leg. Place one hand under your pet, below the heart, to support the chest; place the palm of the other hand over the heart. Press down gently on your pet’s heart. Press down about 1 inch for medium-sized dogs; press harder for larger dogs and with less force for smaller dogs. For cats and tiny pets, compress the chest with the thumb and forefingers of one hand. Perform three quick, firm chest compressions between every breath while continuing artificial respiration until you can hear a heartbeat and feel regular breathing. Then call your veterinarian immediately if someone else hasn’t.

**Determining Your Pet’s Heart Rate or Pulse**

Your pet’s heartbeat can be felt around the area where the left elbow touches the chest (between the third and fourth ribs). Place your hand or a stethoscope over this area and count the heartbeats. You can determine your pet’s heart rate per minute by counting the number of beats in 6 seconds and then multiplying the number by 10.

Your pet’s pulse can be felt by lightly touching (1) the inner thigh about half way from the hip to the knee, (2) the artery just above an outer ankle on a rear limb, or (3) the artery just below an inner wrist and above a large footpad on a front limb.

**Normal Heart or Pulse Rates**

- Puppies (up to 1 year of age): 60–220 beats per minute
- Small-breed dogs (less than 30 lb): 100–220 beats per minute
- Medium- and large-breed dogs (30 lb or more): 60–180 beats per minute
- Cats: 140–220 beats per minute

**Normal Breathing Rates**

- Dogs: 10–30 breaths per minute, and up to 200 pants per minute
- Cats: 24–42 breaths per minute; in cats, panting can be a sign of serious illness and requires immediate veterinary attention
Pet Health Insurance: What's Right for Your Pet?

- Pet insurance can help you budget for unforeseen medical expenses for your pet.
- It’s important to take a hard look at your budget and decide what you need in an insurance policy.
- “Bare bones” plans typically offer coverage for illnesses and emergencies; “comprehensive” policies tend to include reimbursement for routine care as well.
- Make sure you know what any insurance policy excludes before you purchase one.

The Assurance of Pet Insurance

Pet insurance can help you budget for unforeseen medical expenses for your pet. Generally, the premium cost for a good policy is low compared with the relative peace of mind and financial help it can offer. Sorting through the various plan choices and options, however, can be daunting. Here are some tips to help you make sense of the process.

It’s All About You

There is no cookie-cutter insurance policy that works for every pet owner. It’s important to take a hard look at your budget and decide what you need in an insurance policy. For example, do you want help with paying for routine care, such as well visits and vaccinations, or are you more worried about being able to afford emergency care for accidents or sudden illnesses? Perhaps you want help with both. Different insurance companies have different benefits packages, and it is helpful to research them until you find the one that best matches what you want. “Bare bones” plans typically offer coverage for illnesses and emergencies, like being hit by a car or ingesting a poisonous substance; “comprehensive” policies tend to include reimbursement for routine care as well. In some cases, insurance reimbursement for routine care expenses over the course of a year can significantly defray the cost of the annual premium.

Read the Fine Print

Make sure you know what any insurance policy excludes before you purchase one. Find out what the prospective insurer’s position is regarding preexisting or congenital (present since birth) conditions, and determine if there are any age limits for coverage. Some insurance companies won’t cover pets over a certain age, which can leave your pet without coverage at a time when he or she may need it most. Other policies may charge more if you own a specific breed or live in certain areas of the country. Be sure the policy does not limit you in your choice of veterinarian and that it offers you coverage for any needed specialty care, such as a visit to a veterinary dermatologist or ophthalmologist.

Avoid Sticker Shock

To avoid surprises, find out how your prospective insurer sets premiums. Do they change from year to year or do they stay the same? For example, some companies offer low initial premium payments when a pet is young but increase them exponentially as the pet ages. Others increase your premiums as you submit claims. Some policies also set high deductible limits, which is
something to consider if you don’t want to spend hundreds of dollars out of pocket before your coverage begins.

Assess True Value

The only way to assess the real value of your policy is to determine exactly what you’ll get in return for your premium payments. A prospective insurer should be “transparent” about what they will pay for and how much they will cover. Find out if the company determines reimbursement based on a straight percentage of your bill, if it uses a customary fee schedule, or a combination of both. If the insurer uses a fee schedule, consider showing it to your veterinarian to make sure that what the insurance company considers to be a reasonable fee is in alignment with what your veterinarian actually charges. Otherwise, you could wind up paying a lot more out of pocket than you realize.

What’s the Limit?

All insurers place a lifetime maximum on how much they will pay out for health care costs over the course of a pet’s lifetime. So, even if the amount quoted seems generous, keep in mind that one or two major surgeries or illnesses over the course of a few years can really cut into that amount. Insurers also have different guidelines on how those limits are reached. For example, insurers may place limits on how much they will reimburse by claim, diagnosis, or total incident. Generally, the simpler the guideline, the easier it will be for you to keep track of it and estimate what reimbursement you can expect.

Examining Exclusions

If your pet has a preexisting condition or belongs to a breed well known for specific health problems, such as hip dysplasia, selecting insurance can be a little more complicated. However, even if your pet’s preexisting or congenital condition is excluded, pet insurance is still of value. It’s important, though, to question company representatives carefully on how the presence of a preexisting or congenital condition may affect reimbursement for other types of problems that may be considered related. Be sure to get responses in writing. Some insurers will insure a pet for a preexisting condition if enough time has elapsed since the initial incident or a cure can be documented. These waiting periods, however, can be quite extended. Also be aware that some policies “reset” at renewal time, meaning that a chronic illness that has developed during the course of the year will be considered a preexisting condition that will no longer be covered.

More Insurance Tips

- Find out how long the insurance company has been in business and how stable it is.
- The company’s claim submission process should be user friendly. Are the claim forms clear and easy to use? Can they be faxed in? Can you submit multiple claims on one form?
- Does the company offer multi-pet discounts?
- Does the policy cover your pet when traveling or in the care of a pet sitter or neighbor?
• Does the policy offer any value-added features, such as coverage of kennel fees if you become sick or treatment of behavior issues?
Pet Sitter Instructions

- To help ensure that your pet is properly cared for, give your pet sitter detailed written instructions, and discuss them with the sitter.
- Make sure the sitter knows the dates of coverage, the preferred times for visits, and the number of visits needed.
- Give the sitter clear instructions on every aspect of your pet’s care, including feeding, medicating, cleaning up, waste disposal, and activities and walks that your pet enjoys.
- Ask the sitter to look at your pet at each visit; seeing an empty food bowl is not enough to confirm that your pet is all right.

The Basics

The best way to develop a good relationship with your pet sitter is through open, honest communication. To help ensure that your pet is properly cared for, give your pet sitter detailed written instructions, and discuss them with the sitter. Ask the sitter whether he or she has any questions regarding the instructions. Give the sitter the written instructions before your trip and leave a copy in plain view in your house.

Make sure the sitter knows the dates of coverage, the preferred times for visits, and the number of visits needed. You may want to ask the sitter to call or e-mail you after the first visit to confirm that you are on his or her schedule.

Give the sitter clear instructions on every aspect of your pet’s care, including feeding, medicating, cleaning up, waste disposal, and activities and walks that your pet enjoys.

Ask the sitter to look at your pet at each visit; seeing an empty food bowl is not enough to confirm that your pet is all right.

Inform the sitter of your pet’s illnesses or idiosyncrasies. For example, if your pet hides from strangers, where are his or her favorite hiding spots? Does your pet try to escape from the house? Does your pet bite?

Contact Information

Except for emergencies, always contact your sitter during his or her listed hours. Be especially considerate of sitters who operate their businesses from their homes. Make sure to check time zone differences before you call.

Give the sitter your contact information: cell phone number, land-line number(s) of where you will be, and e-mail address. Make sure that you have the sitter’s contact information.

Give the sitter your house key and the name and phone number of someone who has a spare key.

Provide the names and phone numbers of your veterinarian and an emergency contact. It is also very helpful if you call your veterinary practice before you leave. Give them your contact
information and tell them what type of emergency care to provide your pet if it is needed and they are not able to reach you. Make sure the sitter knows where your pet’s carrier and/or leash is in case of an emergency.

If another sitter will be checking on your pet or home, give the sitters each other’s name and phone number and clarify their responsibilities and schedules.

List the names and phone numbers of contractors (for example, electrician, plumber, maid service, yard or pool maintenance service) in case a problem arises.

**Around the House**

Show the sitter where you keep your pet’s food, medicine, treats, bowls, bags for waste, toys, carrier, leash, and litterbox. Let the sitter know where to find cleaning items (for example, vacuum, mop, broom, dustpan, sponges, cleaners, trash bags).

If you need the sitter to handle household details other than your pet’s care (for example, bring in the mail/newspaper, water plants, take the trash/recycling to the curb), leave instructions.

If there are areas in your home that are off limits to the sitter and/or your pet, let the sitter know.

Show the sitter where the fuse box and circuit breakers are and where to find new fuses.

**If Your Return Is Delayed**

If no one else in your area has your house key, have the sitter keep it until you've returned. This way, you’ll know that the sitter or someone else will be able to care for your pet even if you’re delayed.

If your return is delayed, call the sitter and ask if he or she can care for your pet for the additional time. If the sitter can’t cover the extra time, he or she might have a backup sitter. When you return, let the sitter know that you’re home.

**Pet-Sitter Organizations**

**National Association of Professional Pet Sitters**

Web site: www.petsitters.org

Email: napps@ahint.com

Phone: 856-439-0324

15000 Commerce Parkway, Suite C
Mt. Laurel, NJ 08054
Pet Sitters International

Web site: www.petsit.com

Phone: 336-983-9222

Sittercity

Web site: www.sittercity.com

Phone: 888-748-2489
Pet Toy Safety

- To keep your pet safe, it’s important to know about pet toy hazards and how to avoid them.
- If you are worried about the safety of your pet’s toys, talk to your veterinarian.
- Contact your veterinarian if you see your pet swallow a piece of a toy or if your pet vomits, has diarrhea, or has abdominal pain after playing with a toy.

The Basics

Pet toys, whether homemade or purchased, can pose hazards to your pet, so it’s important to know what the hazards are and how to avoid them. When possible, supervise your pet while he or she plays with a toy. In addition, help keep your pet safe by following these toy safety tips:

- Read and follow all safety information that comes with a toy.
- Avoid toys with small parts that could detach and become a choking hazard.
- Avoid toys with sharp edges and points.
- Never give your pet balloons.
- Never give your pet balls small enough to swallow.
- Never point a laser pointer at your pet’s eyes. Laser pointers can damage a pet’s (or person’s) eyes.
- Purchase well-constructed plush toys with tightly secured parts.
- Toys with strings, ribbons, straps, or cords could wrap around your pet's neck. Always monitor your pet when he or she plays with these types of toys.
- Discard all packaging for toys as soon as they have been opened.
- Regularly inspect your pet’s toys to ensure that they are not damaged. Repair or discard damaged toys before your pet plays with them again.
- Do not use your hands or fingers as pet toys. Teaching your pet that hands and fingers are toys could lead to unwanted biting or scratching of any person’s hands or fingers.
- Use Frisbees specially made for dogs. Frisbees for humans are too hard and could chip a dog’s teeth.
- Do not let your pet play with Christmas tree icicles, ribbon, rubber bands, paper clips, or plastic bags.
- Give your pet chew toys that are indestructible or are designed to be safely digestible.
- Do not give your pet chicken bones, which can splinter when chewed, possibly resulting in damage to the gastrointestinal tract.
- Do not let your pet play with children’s toys because they may not be safe for pets. In addition, pet toys may not be safe for children.

When to Contact Your Veterinarian

Feel free to ask your veterinarian for advice in choosing safe toys for your pet. Contact your veterinarian if you see your pet swallow a piece of a toy or if your pet vomits, has diarrhea, or has abdominal pain after playing with a toy.

Testing for Toxins
The American Pet Products Association (APPA) checks with its suppliers to ensure that products are tested for lead and other toxins. In addition, some pet supply companies randomly test their products for lead and other toxins. However, there are no national standards for allowable levels of lead and other toxins in pet toys. Most pet supply companies use the same standards used by the children's toy industry. If you are worried about lead or toxin levels in your pet’s toys, talk to your veterinarian.
Phenobarbital Level Test

- Phenobarbital is a medication that is used to control and prevent seizures.
- Pets requiring a phenobarbital level test need to have a blood sample drawn at the hospital.
- The test measures the level of phenobarbital in the blood to determine if the dose is within the correct range to prevent seizures without causing harmful side effects.
- Long-term phenobarbital use can result in liver damage.
- In pets with phenobarbital toxicosis, the medication should be discontinued.

What Is a Phenobarbital Level Test?

Animals that have seizures are often given phenobarbital to help control and prevent seizure activity. Many animals, especially those with epilepsy, require lifelong therapy with phenobarbital. Because animals can absorb and metabolize this medication differently, it’s important to monitor blood levels on a regular basis.

To check the phenobarbital level, your veterinarian will draw a blood sample from your pet. This can be done on an outpatient basis. The blood sample is usually sent to an outside laboratory for analysis, and the results are typically available within a few days.

When Do Pets Need This Test?

Once phenobarbital therapy is initiated, it usually takes a few weeks for the medication to build up to a therapeutic level in the blood. Most veterinarians recommend that a phenobarbital level test be performed 2 to 4 weeks after the pet begins receiving the medication. Additional phenobarbital level tests may be required:

- Every 6 months if seizures are controlled
- More often, if breakthrough seizures occur
- Two to 4 weeks after any dose change
- If signs of phenobarbital toxicosis occur

What Are the Signs of Phenobarbital Toxicosis?

When pets first begin receiving phenobarbital, they may experience side effects such as drowsiness, anxiety, increased drinking and urination, increased appetite, and lack of coordination. These signs usually subside within 2 to 4 weeks. If these signs do not resolve or if the signs are severe, a phenobarbital level test should be performed.

While phenobarbital can be extremely helpful in controlling seizures, this medication can be harmful to the liver. If your pet has been prescribed phenobarbital, your veterinarian will recommend regular blood tests to monitor liver function.
However, pet owners should be on alert for signs of liver toxicosis, such as vomiting, diarrhea, loss of appetite, and a yellow tint to the skin, eyes, or gums. If you notice any of these signs in your pet, contact your veterinarian immediately.

How Is Phenobarbital Toxicosis Treated?

If a pet experiences signs of toxicosis, phenobarbital should be discontinued and replaced with another anti-seizure medication. Depending on the severity of the signs, the pet may need to be hospitalized for fluid therapy and other supportive treatments.
Physical Examination and Feline Distemper Combination Vaccine

- Cats often hide their illnesses, so physical examination by your veterinarian can help determine if your cat is sick.
- Regular physical examinations by your veterinarian are recommended for your cat.
- Feline distemper and feline infectious respiratory disease can cause serious illness in cats and can sometimes be fatal.
- Cats that go outside are at increased risk for exposure to feline distemper and infectious respiratory disease.
- The feline distemper combo vaccination can help to prevent disease associated with feline distemper and feline infectious respiratory disease.

Why Does My Cat Need a Physical Examination?

A thorough physical examination by a veterinarian is an important part of routine wellness care for all cats. Cats are very good at hiding their illnesses, so a physical examination may be the only way to determine if your cat is as healthy as he or she seems to be. Even if your cat seems fine and has no evidence of problems, routine physical examinations are important for establishing “normal” values for your cat. For example, subtle changes in weight may be detected only by comparing your cat’s current weight with readings from previous examinations.

What Happens During a Physical Examination?

A routine physical examination begins by obtaining a medical history from you. Because you observe your cat regularly, your responses to medical history questions provide critical information about your cat’s health. Among other things, your veterinary team may ask questions about your cat’s appetite, litterbox usage, and activity level. You should mention any changes in your cat’s lifestyle, diet, or regular routine.

During physical examination, your veterinarian will observe your cat’s overall appearance. Haircoat, skin condition, overall body condition, and overall attitude can change when a cat is ill. Your cat’s weight and vital statistics (temperature, pulse, and respiration) will also be checked. Other parts of a physical examination may include the following:

- Checking the fur for evidence of fleas, ticks, or other skin parasites
- Examining the eyes and ears
- Briefly examining the gums and teeth (a full dental exam requires sedation)
- Listening to the heart and lungs with a stethoscope to check heart rate/rhythm and lung sounds
- Palpating (feeling) the abdominal organs

Even if a physical examination is very thorough, some medical conditions are not apparent just from physical examination. Your veterinarian may recommend diagnostic testing to screen for other problems. For example, a stool specimen can be used to check for intestinal parasites, and blood tests can help detect infections or other medical problems. Your veterinarian may also
recommend wellness blood work to help determine whether your cat’s major organs are functioning properly.

Depending on which vaccinations your cat receives, these injections are routinely given during physical examination visits.

**What Is a Feline Distemper Combination Vaccine?**

The feline distemper combination, or combo, vaccine is formulated to protect cats from several diseases through a single injection. Many types of combo vaccines are available, some protecting against up to five diseases. Without combo vaccinations, cats would need to receive a separate injection against each disease. The most commonly used combo vaccines protect cats from disease associated with feline viral rhinotracheitis, feline calicivirus, feline panleukopenia (distemper), and feline chlamydiosis (or pneumonitis). The abbreviations for these diseases indicate which components are in the combo vaccine: FVRCP stands for feline viral rhinotracheitis (FVR), calicivirus (C), and panleukopenia (P). For vaccines that also protect against chlamydiosis, the initials are FVRCP-C.

**What Diseases Does the Feline Distemper Combo Vaccine Protect My Cat From?**

Although protection against many viruses (including rabies and feline leukemia viruses) can be included in a feline distemper combo vaccination, protection against the following is most common: feline viral rhinotracheitis, calicivirus infection, panleukopenia, and chlamydiosis. Most cats are not unlucky enough to become infected with all of these viruses at the same time. However, because the clinical signs associated with some of these diseases can overlap and because treatment also tends to be similar, these infections are commonly considered as a group. Alone or in combination, almost all of the viruses mentioned here can be associated with respiratory clinical signs. This collection of clinical signs is commonly called *feline infectious respiratory disease* or *feline upper respiratory infection*. The exception to this grouping is panleukopenia (feline distemper), which is a potentially fatal condition that can cause severe vomiting and diarrhea as well as high fever.

**How Do Cats Become Infected With These Diseases?**

Most of the viruses associated with feline infectious respiratory disease do not live for a very long time in the environment, so contact with a sick cat often spreads the infection. In addition, cats with feline infectious respiratory disease tend to sneeze and cough, and contact with these droplets can also spread the infection. Studies have shown that respiratory droplets and mucus that are expelled during sneezing can spread the viruses up to 6 feet away! Another cat in the same room or close by is at risk for becoming infected.

Panleukopenia (feline distemper) is different from the respiratory viruses. Once a cat is infected with panleukopenia, it can shed virus in body fluids (most notably urine and feces) for up to 6 weeks. If another cat encounters an infected cat (or its body fluids) during this time, transmission is likely. However, the feline panleukopenia virus can also live in the environment and on
contaminated bedding and other items for a very long time, so contact with contaminated objects can also spread the infection.

**What Are the Signs of These Diseases?**

The clinical signs associated with feline infectious respiratory disease depend on several factors, including the viruses involved and the overall age and health of the cat. Kittens tend to develop more severe illness, as do cats that were unhealthy before they became infected. Clinical signs can include the following:

- Fever
- Lethargy (tiredness) and depression
- Discharge from the nose and eyes
- Coughing and/or sneezing
- Conjunctivitis (inflammation of the inner eyelids and tissues around the eyes)
- Ulcers in the mouth (tongue, lips, gums)
- Ulcers on the nose
- Drooling (if ulcers are in the mouth)
- Loss of appetite
- Pneumonia

Unlike the respiratory viruses, panleukopenia (feline distemper) attacks the intestinal tract, so clinical signs are likely to include vomiting, diarrhea, fever, and dehydration. However, this virus also attacks the immune system, greatly reducing the number of white blood cells in the circulation. Your cat’s body needs white blood cells to help fight off infection, so cats with panleukopenia tend to develop severe infections involving the intestines. These infections can quickly overwhelm the body’s defenses, causing death.

**Diagnosis and Treatment**

Although sophisticated blood testing can diagnose feline infectious respiratory disease, most veterinarians make the diagnosis based on clinical signs. There is no specific treatment to eliminate these infections. Therefore, treatment is generally aimed at improving the clinical signs. Antibiotics, fluids, eye drops, and other supportive treatments are generally used.

Sophisticated testing of blood and body fluids can also be used to diagnose panleukopenia, but many veterinarians diagnose feline distemper based on clinical signs and the presence of a severely low white blood cell count. Treatment is mainly supportive and consists of administering fluids to prevent dehydration, antibiotics to treat infections, and other medications to help control vomiting and other clinical signs.

**Vaccination and Prevention of Feline Distemper and Feline Infectious Respiratory Disease**

Several vaccines are available for preventing disease associated with rhinotracheitis, calicivirus, panleukopenia, and chlamydiosis. All of the available FVRCP and FVRCP-C vaccines have been tested and found to be safe and effective when administered as directed.
Depending on which vaccine is used, kittens generally receive their first FVRCP vaccination around 8 to 9 weeks of age. A booster vaccination is given 3 to 4 weeks later, followed by boosters every 1 to 3 years (depending on exposure risk). Cats that go outside or live with other cats are at greater risk for exposure to these diseases compared with cats that stay indoors and have limited contact with other cats. Ask your veterinarian about how to protect your cat from feline distemper and feline respiratory virus infection.

Most of the feline infectious respiratory viruses are killed by routine disinfectants and do not live in the environment for more than a week. However, panleukopenia (feline distemper) is harder to kill. Cleaning the environment with a dilute bleach solution will kill the virus, which can otherwise live on surfaces for up to 2 years and is resistant to many other cleaning products and disinfectants. Be sure to wash hands and change clothes after handling an infected cat. Similarly, bowls, blankets, towels, toys, litterboxes, and other items should be cleaned with bleach (if possible) to reduce the risk of further disease spread.

Because feline distemper and feline infectious respiratory disease viruses are transmitted through contact, keeping sick cats separated from healthy cats can reduce the likelihood of transmission. Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. During that time, the new cat should be monitored closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.
Physical Examination and Feline Infectious Peritonitis Vaccine

- Cats tend to hide their illnesses, so physical examination by your veterinarian can help determine if your cat is sick.
- Regular physical examinations are recommended for all pet cats.
- Feline infectious peritonitis (FIP), which is caused by a contagious virus, can be an untreatable, fatal illness in cats.
- Cats housed in group-living situations are at increased risk for exposure to FIP.
- Vaccination can help prevent illness in cats exposed to the FIP virus.

Why Does My Cat Need a Physical Examination?

A thorough physical examination is an important part of routine wellness care for all cats. Cats are very good at hiding their illnesses, so a physical examination may be the only way to determine if your cat is as healthy as he or she seems to be. Even if your cat seems fine and has no evidence of problems, routine physical examinations are important for establishing “normal” values for your cat. For example, subtle changes in weight may only be noticed by comparing your cat’s current weight with readings recorded during previous examinations.

What Happens During a Physical Examination?

A routine physical examination begins by obtaining a medical history from you. Because you live with your cat and observe him or her regularly, your responses to medical history questions provide critical information about your cat’s health. Among other things, your veterinary team may ask questions about your cat’s appetite, litterbox use, and activity level. You should mention any changes in your cat’s lifestyle, diet, or regular routine.

During physical examination, your veterinarian will observe your cat’s overall appearance. Haircoat, skin condition, overall body condition, and overall attitude can change when a cat is ill. Your cat’s weight and vital statistics (temperature, pulse, and respiration) will also be checked. Other parts of a physical examination may include the following:

- Checking the fur for evidence of fleas, ticks, or other skin parasites
- Examining the eyes and ears
- A brief dental examination to assess the gums and teeth (a full dental exam requires sedation)
- Listening to the heart and lungs with a stethoscope to check heart rate/rhythm and lung sounds
- Palpating (feeling) the abdominal organs

Even if a physical examination is very thorough, some medical conditions are not apparent just from physical examination. Your veterinarian may recommend diagnostic testing to screen for other problems. For example, a stool specimen can be used to check for intestinal parasites, and blood tests can help detect infections or other medical problems. Your veterinarian may also recommend wellness blood work to help determine if your cat’s major organs are functioning properly.
Depending on which vaccinations your cat receives, these injections are routinely given during physical examination visits.

**What Is Feline Infectious Peritonitis (FIP)?**

Feline infectious peritonitis (FIP), which is caused by a contagious virus, can result in significant illness and death in cats. Despite the name of this disease, it does not always cause peritonitis (inflammation of the lining of the abdomen), but this complication happens in a large percentage of infected cats. Once a cat is infected, the virus can spread through the entire body. Complications depend on the type of illness the disease causes and which areas of the body are involved.

**How Do Cats Become Infected With Feline Infectious Peritonitis?**

The FIP virus is transmitted through exposure to feces from an infected cat. Although cats of any age can become infected with FIP, kittens are most vulnerable. Kittens can become infected shortly after birth if their mother was already infected. Cats in communal living conditions, such as some breeding facilities, catteries, and shelters, are at increased risk for exposure. The FIP virus can live for several weeks on contaminated litterboxes, food bowls, and water bowls. However, the virus is killed by bleach, so cleaning contaminated areas with a dilute bleach solution can decrease the risk of disease spread.

Some cats can become carriers of FIP. This means that after they become infected, they don’t develop clinical signs of disease but can be a source of infection for other cats.

**Signs of Feline Infectious Peritonitis**

There are two forms of FIP, and the clinical signs of the disease depend on which form an infected cat develops. “Wet” FIP describes the form of illness when a cat develops fluid accumulation in certain areas of the body. The fluid develops most commonly in the abdomen or chest cavity, and the amount of fluid can be large enough to cause discomfort and trouble breathing. Other clinical signs can also occur:

- Pain or swelling of the abdomen
- Weight loss
- Pale gums
- Lethargy (tiredness)
- Appetite loss

The “dry” form of the disease occurs when cats develop nodules (lumps) on certain organs in the body. These nodules are not tumors but are the body’s response to the infection and inflammation caused by FIP. Nodules can occur in many places, including the liver, lungs, spleen, and brain. Clinical signs can vary, depending on where the nodules form. Clinical signs can include the following:

- Fever
- Weight loss
- Lethargy (tiredness)
- Appetite loss
- Yellow discoloration of the skin (called jaundice; can occur if nodules form on the liver)
- Seizures and paralysis
- Inflammation of the eyes
- Vomiting
- Diarrhea or constipation

**Diagnosis and Treatment**

Depending on the form of illness (“wet” or “dry”), FIP may be difficult to diagnose. Diagnosing the “wet” form can be fairly straightforward. Your veterinarian can remove a small sample of fluid from your cat’s abdomen or chest cavity and analyze the fluid for characteristics associated with FIP. Diagnosing the “dry” form can be more complicated. Blood testing can raise your veterinarian’s level of suspicion but cannot be used to reliably diagnose the disease in many cases. This is because specific blood tests that detect the FIP virus cannot reliably tell the difference between FIP and other similar viruses. Your veterinarian may recommend additional blood testing, such as a chemistry panel and complete blood cell count (CBC), to check for changes consistent with FIP. Diagnosis is sometimes based on an accumulation of supportive evidence rather than a single test.

No drug can eliminate the FIP virus, and no reliable treatment for FIP is available. Medications may temporarily help with clinical signs, but most cats that develop clinical signs eventually die of associated complications.

**Vaccination and Prevention**

If your cat lives with an FIP-positive cat or is otherwise at risk for exposure to FIP, your veterinarian may recommend the FIP vaccination. Kittens are generally vaccinated against FIP at 16 weeks of age. A booster vaccination is given 3 to 4 weeks later, according to the vaccine label, followed by boosters each year as long as the risk for exposure remains. The vaccine is formulated to be administered as nasal drops, so there is no injection associated with the FIP vaccine. It is normal for cats to sneeze or shake their heads after the vaccination is given.

Cats that live with other cats or are routinely exposed to other cats are at greater risk for exposure to FIP compared with cats in single-cat households that have limited or no contact with other cats. If your cat’s risk for exposure is low, your veterinarian may not recommend the FIP vaccine for your cat. Ask your veterinarian about how to protect your cat from this disease.

Because FIP is transmitted through contact and fecal material, keeping sick cats separated from healthy cats can reduce the likelihood of transmission. The FIP virus is killed by bleach, so litterboxes and food/water bowls can be cleaned with a dilute bleach solution.

Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a
few weeks. During that time, the new cat should be monitored closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new cat to your other pets.
Physical Therapy and Rehabilitation

- Physical therapy and rehabilitation involve the use of therapeutic exercises to help patients recover from acute and chronic health conditions resulting from illness, trauma, or surgery.
- Physical therapy can reduce pain and improve joint range of motion.
- Physical therapy can include hydrotherapy, massage therapy, cold/heat therapy, therapeutic ultrasound, and electrical stimulation therapy.
- Be sure to follow the prescribed treatments recommended by your veterinarian.

What Is Physical Therapy and Rehabilitation?

Physical rehabilitation for pets is the use of therapeutic exercises and range-of-motion therapy combined with additional treatments (see the list below for examples) to improve the recovery of patients with acute or chronic health conditions. Physical therapy may be recommended for patients recovering from fractures, orthopedic surgery (including cranial cruciate ligament repair, total hip replacement, or spinal surgery), and neurologic events (such as spinal injury).

Why Might My Pet Need Physical Therapy?

Physical rehabilitation can help restore, maintain, and promote proper functioning and mobility for your pet. It can also enhance recovery after surgery, reduce pain, increase circulation, and improve coordination and range of motion. It can help keep geriatric patients more comfortable and provide a last-chance option for patients who have not had success with other treatments.

The benefits of physical therapy may include:

- Decreased pain
- Improved strength
- Improved functioning of weak limbs
- Healing of injured or inflamed tissues
- Restoration of joint range of motion
- Prevention of muscle atrophy (wasting)

Pets of all ages, sizes, and breeds can benefit from physical rehabilitation. Physical rehabilitation can help improve the quality of life for many animals suffering from chronic pain, osteoarthritis, obesity, or muscle weakness.

What Are Some Common Types of Physical Therapy?

Many types of physical therapy are used in pets. These are some of the more common ones:

- **Hydrotherapy:** Hydrotherapy is the use of water to aid in the healing and/or conditioning of a patient. Pets either swim in a pool or tank for prescribed periods of time or walk on an underwater treadmill. The water level above the treadmill is high enough to provide buoyancy but low enough so that the pet’s head and shoulders are above water.
Swimming or walking underwater provides pets with the benefits of exercise—building muscle strength and improving coordination, cardiovascular health, and endurance—without the same degree of stress or pressure on joints that would be encountered while walking on the ground. Swimming and underwater treadmills allow pets to make use of the natural resistance of water and the benefit of buoyancy to experience gentle, low-impact exercise. The therapist can control water depth, treadmill speed, and ramp incline to increase or reduce the level of exercise. Hydrotherapy can help pets make the transition to land-based therapy more quickly.

- **Cold and heat therapy:** Application of cold and heat can help damaged areas heal more rapidly, reduce swelling, and provide local pain relief.

- **Therapeutic ultrasound:** Therapeutic ultrasound produces heat deep within tissues. This therapy is useful in treating joint and soft tissue injuries and chronic conditions.

- **Electrical stimulation therapy:** Small electrical currents can be used to help prevent muscle wasting in very weak patients by encouraging the muscles to contract. This therapy can also be used to help manage pain and to increase circulation and promote healing.

- **Massage therapy and supervised exercise:** Physical therapists may also use massage therapy, passive range-of-motion exercises, stretching, and physical therapy tools, such as balls, ramps, boards, poles, and wedges, to help rehabilitate your pet.

- **Home care:** Passive range-of-motion exercises, simple massage therapy, and activity goals can all be accomplished at home to support the success of therapy. Your physical therapist can develop a home treatment plan for you and your pet.

Be sure to follow your veterinarian’s recommendations regarding who should perform what types of therapy for your pet.
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Be sure to follow your veterinarian’s recommendations regarding who should perform what types of therapy for your pet.
Pica and Coprophagy

- Pica is the eating of nonfood substances such as rocks and clothing.
- Coprophagy is the consumption of feces, and it is more common in dogs than in cats.
- When eaten, some objects may block the digestive tract and require surgical removal or retrieval with an endoscope.
- The cause of these behaviors is unknown, but rarely, underlying diseases may lead to them.
- Diagnosis of underlying diseases may require blood work and fecal tests.
- Owners can prevent pets from eating objects by eliminating access to the objects, making the objects unpleasant to taste, enriching the pet’s environment to prevent boredom, or, for dogs, using muzzles or leash walks.
- In some cases, owners may choose to work with a veterinary behaviorist to eliminate the behavior.

What Are Pica and Coprophagy?

Pets with pica or coprophagy eat substances that are not considered food. Pica involves the eating of objects. Dogs may be more likely to eat objects such as rocks and toys, while cats may eat clothing, strings, and kitty litter. Oriental breeds of cats are more likely to eat fabrics and wool.

Coprophagy is the consumption of feces. It is a natural behavior for nursing mothers to eat the feces of their puppies or kittens. Coprophagy is more common in dogs than in cats, and female dogs are more likely to display this behavior than males.

While coprophagy is generally more distasteful than it is harmful to the pet, eating of nonfood objects may result in vomiting, diarrhea, or a blockage in the digestive tract, which may require an emergency surgery or use of an endoscope to retrieve the object while the pet is under anesthesia.

What Causes These Behaviors?

The exact cause of pica and coprophagy is unknown. Some pets chew on objects out of stress or boredom. Dogs may eat feces because they are not being fed enough or if they go too long between meals, but it is usually not because they are lacking a nutrient in the diet. Dogs that have been punished for defecating in the house may eat their feces to avoid further punishment.

Rarely, an underlying condition such as anemia, intestinal parasites, gastrointestinal disorders, or liver disease may lead to an animal eating strange objects. Administration of some drugs, such as steroids, can increase hunger and lead to pica as well.

What Are the Signs of Pica and Coprophagy?

Usually, owners either see the pet eating the objects or find remnants of the objects around the house. Cats are especially likely to eat linear objects, such as strings, dental floss, rubber bands,
and yarn, which can cause serious problems in the digestive tract. Signs that a pet may have ingested an object that is causing a blockage in the digestive tract include:

- Vomiting
- Diarrhea or constipation
- Loss of appetite
- Drooling
- Lethargy (tiredness)

If you suspect that your pet may have this problem, see your veterinarian immediately.

**How Are These Conditions Diagnosed?**

While most cases of pica and coprophagy are simply a behavior problem, it’s important for veterinarians to determine if there is a medical cause. Your veterinarian will perform a complete physical exam and ask about your pet’s diet, appetite, and environment. Additional tests may include blood work, fecal tests, and, possibly, an intestinal biopsy. Usually, treating the underlying disease will help eliminate the behavior.

If your veterinarian suspects a blockage in the digestive tract, he or she will probably recommend radiographs (x-rays) and other tests to evaluate the intestinal tract.

**How Can I Prevent My Pet From Eating Objects?**

If there isn’t an underlying medical problem leading to the behavior, the best thing to do is to eliminate access to objects the pet likes to eat. Make sure to store clothing, plastics, wool, and linear objects where your pet cannot find them. If your dog eats objects in the yard, consider a basket muzzle. However, never leave a dog with a muzzle unattended.

You can also try covering the objects with an unpleasant-tasting substance, such as cayenne pepper or bitter apple products, which are available at most pet stores.

If you find your pet chewing on something inappropriate, say “no” firmly, and give him or her a more appropriate chew toy. Avoid punishment, which can cause stress and further exacerbate the problem.

If you suspect that your pet is eating objects out of boredom, increase the amount of attention and exercise your pet receives every day, and enrich his or her environment with appropriate toys that can’t be swallowed.

For dogs with coprophagy, remove and dispose of feces from the yard immediately. Better yet, increase the number of daily leash walks and reward your dog with a treat after he or she defecates to distract him or her from the feces. Then pick up and dispose of feces appropriately.

Some owners may try sprinkling feces with cayenne pepper or bitter apple so the dog experiences an unpleasant taste, but it’s generally a better idea to just remove the feces.
Your veterinarian can supply you with a product that can be sprinkled on the dog’s food to give the feces an unpleasant taste, but once the product is no longer added to the food, the dog may go back to eating feces.

In some cases, a change of diet may help eliminate the problem. Consult your veterinarian before changing diets.

Because eating foreign objects may cause serious gastrointestinal problems, you may want to work with a veterinary behaviorist to eliminate the behavior.
Pneumonia in Cats

- When the lungs are infected or inflamed, fluid and other material can accumulate, resulting in pneumonia.
- A variety of bacterial, viral, and fungal organisms can cause pneumonia in cats.
- Pneumonia is treatable in most cases. However, if the cat is very young, very old, or already sick with another condition, the outcome may not be as favorable as if the patient was healthy before pneumonia developed.

What Is Pneumonia?

Most lung tissue is made up of tiny clusters of air “balloons” (called alveoli). Each balloon is lined by a thin layer of cells and surrounded by a network of very small blood vessels. When you breathe in, air fills the balloons. The cells in the lining and the small blood vessels exchange oxygen from the air for carbon dioxide, which you then breathe out. The main pathway from the lungs to the outside of the body consists of the trachea (the large airway that begins at the back of the throat and continues down into the lungs) and the nostrils.

When foreign organisms, such as certain bacteria, viruses, and fungal organisms, invade the nostrils or trachea, they sometimes cause infection and inflammation there. If this infection and inflammation continues down the respiratory tract to involve the alveoli, material such as fluid, pus, and cellular debris can accumulate in the lungs. When this occurs, the patient has developed pneumonia.

A variety of bacterial, viral, and fungal organisms can cause pneumonia in cats. Examples include feline calicivirus, feline infectious peritonitis (FIP) virus, Mycoplasma bacteria, and the fungus Cryptococcus. Sometimes, a virus or fungus can cause such damage to the respiratory tract that a secondary bacterial infection can take hold, so the pneumonia can be caused by more than one organism. The condition can also occur if fluid is present in the lungs, such as after a near-drowning incident or as a result of heart failure. Pneumonia can also occur if a pet inhales vomit or any type of caustic or irritating substance.

What Are the Clinical Signs of Pneumonia?

Pneumonia can be confined to a small area of the lungs, or it can spread throughout them. Depending on the severity of the pneumonia, clinical signs can be relatively mild or severe and can include the following:

- Difficulty breathing, or rapid breathing
- Discharge from the nostrils
- Lethargy (tiredness)
- Reduced appetite
- Fever
- Coughing
Because a variety of organisms can cause pneumonia, additional clinical signs may be associated with the causative agent. For example, FIP virus can cause pneumonia, but additional clinical signs might include vomiting, diarrhea, or other complications associated with FIP infection.

**How Is Pneumonia Diagnosed?**

Obtaining a medical history and performing a physical examination are the first steps in diagnosing pneumonia. When your veterinarian examines your cat, he or she will listen to your pet’s chest with a stethoscope to determine whether the air sounds in the lungs and airways sound normal. Your veterinarian will also use the stethoscope to check your cat’s heart for murmurs or changes in rhythm and heart rate.

Many veterinarians use results of chest radiographs (x-rays) to help confirm a diagnosis of pneumonia. Once pneumonia is diagnosed, your veterinarian may recommend additional testing to help identify the organism responsible and look into possible underlying causes for the illness.

**What Are the Treatment and Outcome of Pneumonia?**

Treatment for pneumonia can involve several goals:

- **Stabilize the patient:** If the patient is having significant trouble breathing or is otherwise unstable, oxygen therapy and other treatments may be necessary to stabilize the pet.
- **Treat the pneumonia:** Antibiotics are often prescribed to begin treating bacterial infections while additional test results are pending. If a pet is seriously ill from pneumonia, hospitalization may be recommended so that the patient can be supported and monitored as treatment is progressing.
- **Address underlying illnesses:** If specific bacteria, viral, or fungal organisms are identified, additional medications may be prescribed to address the infection. Your veterinarian may also recommend repeating chest x-rays periodically to monitor how well the pneumonia is resolving.

Pneumonia is treatable in most cases. However, the outcome for a cat with pneumonia can depend heavily on the cause of the pneumonia and the overall health status of the pet. If the cat is very young, very old, or already sick with another condition, the prognosis may not be as favorable as if the patient was healthy before pneumonia developed.

Additionally, if the underlying cause of the pneumonia was FIP virus or another potentially fatal illness, the patient may recover from pneumonia but die from other complications of the underlying disease.
Polyuria and Polydipsia

- Polyuria (PU) and polydipsia (PD) refer to excessive urination and excessive drinking, respectively.
- Polyuria and polydipsia can be associated with a variety of medical conditions.
- Polyuria and polydipsia are signs of illness, so the treatment depends on the underlying cause. Fortunately, most conditions that cause polyuria and polydipsia are manageable or curable.

What Are Polyuria and Polydipsia?

*Polyuria* (PU) and *polydipsia* (PD) are the medical terms used to describe excessive urination and excessive drinking, respectively. Because these two abnormalities tend to occur together, the abbreviation PU/PD is commonly used.

What Causes Polyuria and Polydipsia?

With rare exceptions, any time an animal drinks increased amounts of water, urination increases. This is part of the body’s natural way of maintaining fluid balance. Similarly, if the body is unable to retain appropriate amounts of water for some reason, the pet receives signals from his or her body to drink more water to combat dehydration.

The processes that control fluid regulation are complex and involve the kidneys, brain, and other organs, as well as hormones and other chemicals in the body. Polyuria and polydipsia can be associated with a variety of medical conditions that may involve alterations in any of these regulatory processes. Conditions associated with PU/PD include the following:

- Diabetes
- Kidney disease
- Thyroid disease (in cats)
- Adrenal gland disease
- Pyometra (uterine infection)

Certain medications, such as steroids, can also cause increased drinking and urination as a side effect.

What Are the Clinical Signs of Polyuria and Polydipsia?

Polyuria and polydipsia are not always easy to detect, particularly if there are multiple pets in the home. PU/PD can also be mistaken for other medical issues, like urinary incontinence or a bladder infection. If your pet seems to be spending more time at the water bowl, or asking to go outside more often than usual, PU/PD may be occurring. Other signs of a problem may include the following:

- Urinary accidents in the house
- Urinating outside the litterbox (cats)
- Drinking from toilets, sinks, or other water sources besides the water bowl

Additional clinical signs may result from the underlying condition that is causing the PU/PD. For example, pets with kidney disease may vomit, lose weight, or stop eating in addition to exhibiting PU/PD. Unless directed by your veterinarian, you should never limit your pet’s access to water.

**How Are Polyuria and Polydipsia Diagnosed?**

A medical history and physical examination findings can provide valuable information for your veterinarian. The medical history may include trying to determine how long the problem has been going on and whether any other signs of illness have been observed. Physical examination findings may reveal evidence of underlying illness. For example, a female dog with a uterine infection may have a vaginal discharge, and a cat with thyroid disease may have an increased heart rate and weight loss.

Your veterinarian may recommend a urinalysis, serum chemistry profile, complete blood count, or other initial diagnostic tests to begin looking into the cause of your pet’s PU/PD. Additional testing for specific diseases, such as adrenal gland disease, may be recommended based on the results of preliminary tests.

**How Are Polyuria and Polydipsia Treated?**

Polyuria and polydipsia are not diseases—they are signs of illness. Therefore, the treatment for PU/PD depends on the underlying cause. Fortunately, most conditions that cause PU/PD are manageable or curable. If you suspect your pet may be drinking or urinating excessively, schedule an appointment with your veterinarian so that diagnostic testing can begin.
Potassium Bromide Level Test

- Potassium bromide is a medication used to control or prevent seizures.
- A potassium bromide level test is used to determine if the dose is appropriate to control seizures without causing harmful side effects.
- The test requires a simple blood sample at your veterinarian’s office.
- Signs of potassium bromide toxicosis include sedation, rear-limb weakness, and incoordination (lack of coordination of muscular action, such as limb movement).
- In animals with signs of potassium bromide toxicosis, the medication should be discontinued and then restarted at a lower dose or changed to another medication.

Potassium bromide is used alone or in combination with other anti-convulsant medications to help control and prevent seizures. Potassium bromide is administered primarily to dogs and less frequently to cats.

What Is a Potassium Bromide Level Test?

A potassium bromide level test is a simple blood test that measures the amount of potassium bromide in the blood. Your veterinarian may recommend this test to determine if the dose of potassium bromide is appropriate to control your pet’s seizures without producing harmful effects. The blood test can be performed at your veterinarian’s office on an outpatient basis.

When Should Pets Receive This Test?

After starting potassium bromide therapy, it usually takes 2 to 3 months for the medication to reach an optimal level in the blood. A potassium bromide level test may be recommended:

- 1 to 2 months after initiating treatment
- 4 months after initiating treatment
- Any time a dose is changed
- If concurrent medications are altered
- If the patient gains or loses weight
- If seizures aren’t controlled at the current dose
- If the patient experiences signs of toxicosis
- Every 6 months after seizures have been controlled

What Are the Signs of Potassium Bromide Toxicosis?

When animals begin potassium bromide therapy, especially while receiving phenobarbital, they may experience some sedation. These signs should resolve in a few weeks. Other potential side effects include increased drinking and urination, changes in appetite, vomiting, and constipation.

Older animals with additional diseases may be more prone to side effects. Signs of toxicosis include sedation, mental dullness, tremors, incoordination, and hindlimb weakness. If you notice any of these signs in your pet, contact your veterinarian immediately.
Signs of potassium bromide toxicosis may also appear if the pet is switched to a low-salt diet. At the same time, increases in dietary salt, from a dietary change or high-salt treats may reduce the potassium bromide level, increasing the risk of seizures. If your pet is receiving potassium bromide therapy, dietary changes should not be made without consulting your veterinarian.

**How Is Potassium Bromide Toxicosis Treated?**

When animals experience signs of potassium bromide toxicosis, the medication is usually discontinued for a few days. The veterinarian may recommend that the pet be hospitalized to receive intravenous fluids. The medication may then be restarted at a lower dose, or the animal may be given a different medication instead.
Pregnancy in Cats

- In cats, pregnancy lasts for 56 to 79 days, or approximately 9 weeks.
- Pregnancy is determined by feeling (palpating) the developing kittens in the abdomen or by radiography (x-ray) and/or ultrasonography (ultrasound).
- Pregnant cats should be fed a well-balanced commercial diet and should have access to fresh water at all times.

What Is Pregnancy?

Pregnancy is the time before birth when kittens develop inside the mother’s uterus. Unlike canine fertility, feline fertility is influenced by the amount of time that the female is exposed to sunlight. As a result, pregnancy in cats tends to be seasonal, with most births occurring from spring through early fall.

Developing kittens usually have claws, eyes, and ears by the fifth week of pregnancy and full body hair by the eighth week. After 56 to 79 days, or about 9 weeks, the litter is born. Litter size can range from a single kitten to as many as 10 or more. In outdoor and feral cats, it is common for kittens in the same litter to be sired by different toms, or fathers.

What Are the Signs of Pregnancy?

During the first few weeks of pregnancy, there are very few signs. By the third week of pregnancy, the mother’s nipples become more prominent and pink, a condition called *pinking up*. By the fourth and fifth weeks, you may notice weight gain, especially around the abdomen. Toward the end of pregnancy, the breasts, or mammary glands, enlarge, and you may see a milky discharge from the nipples a day or two before birth.

How Is Pregnancy Determined?

Many veterinarians can identify pregnancy by palpating, or feeling, the abdomen with their hands as early as the third to fourth week of pregnancy. Ultrasonography, if available at the practice, may be used to identify fetal heartbeats around the third week of pregnancy. During the sixth week, radiographs (x-rays) can detect bones and give the most accurate estimate of litter size.

Nutrition and Exercise

Pregnant cats should be fed a well-balanced commercial diet and should have access to fresh water at all times. As the pregnancy progresses, your veterinarian can counsel you on increasing food intake or may recommend another diet that is higher in protein and calories. Supplements should not be given without consulting your veterinarian first.

As the developing kittens take up more space in the abdomen and press against the stomach, you may need to feed your cat smaller, more frequent meals. Cats often require even more food during nursing, when they can consume up to twice as much food as normal.
While exercise helps the mother maintain muscle tone, keeping pregnant cats indoors is generally a good idea. Certain viruses and parasites can be particularly harmful to developing kittens. For example, if your cat has not been vaccinated for panleukopenia (feline distemper), exposure to an infected cat can harm the mother, resulting in serious developmental brain disorders in the kittens. Keeping your pregnant cat indoors also prevents her from delivering the litter outdoors, where there are numerous dangers to kittens, including temperature extremes and predators.

**Prenatal Exams**

Your veterinarian can examine your cat and determine whether she is pregnant. If possible, vaccines and medications should be avoided during pregnancy because of potential harm to the mother and developing kittens. If you are concerned about parasites, including fleas, consult your veterinarian. He or she can advise you on which products are safe for use in pregnant cats.
Preventing Heartworms and Fleas

- Heartworms and fleas are parasites that can cause serious problems. Fortunately, these parasites can be prevented by using safe, effective, and easy-to-administer medications.
- Heartworm disease damages the heart, lungs, and related blood vessels and can be fatal. This disease is transmitted through the bite of an infected mosquito.
- Heartworm disease in dogs is treatable, but in some cases, treatment can be costly and complicated. There are no approved products for heartworm treatment in cats.
- Fleas are widespread, blood-drinking parasites that can transmit tapeworms and cause flea allergy dermatitis.
- Prevention of heartworms and fleas is the best option for your pet.

Why Worry About Heartworms?

Heartworm disease is serious and potentially fatal. It affects dogs, cats, and up to 30 other species of mammals. Heartworm disease has been reported in all 50 states. It is caused by parasitic worms (heartworms) living in the major vessels of the lungs and, occasionally, in the heart. Heartworms are transmitted (as microscopic larvae) through the bite of an infected mosquito. The scientific name for the heartworm parasite is *Dirofilaria immitis*.

Heartworms can cause a variety of medical problems affecting the lungs, heart, liver, and kidneys. Any of these problems, alone or in combination, can lead to death. While treatment is available for dogs, it can sometimes be costly and complicated. In cats, heartworms can cause a respiratory disorder that mimics feline asthma. However, there is no approved medical treatment for heartworm disease in cats.

Although heartworm disease is virtually 100% preventable, many pets are still diagnosed with it each year. The American Heartworm Society (AHS) estimates that 1 million dogs in the United States are infected with the disease and that its incidence may be rising. Cats are susceptible to heartworms, too, and even indoor cats are at risk. Studies have shown that more than 25% of heartworm-infected cats live indoors.

Why Worry About Fleas?

The flea that most commonly affects pets is called the *cat flea*. Its scientific name is *Ctenocephalides felis*. The dog flea (*Ctenocephalides canis*) is much less common but can infest pets as well. Fleas not only make pets and people miserable but can cause serious health problems. In mild cases, pets may only be troubled by persistent itching and scratching. In some unfortunate animals, however, fleas can also cause an extreme allergic reaction resulting in intense itching. This causes the pet to scratch excessively, leading to skin damage, hair loss, scabs, and skin infection. This condition, called *flea allergy dermatitis*, can become severe enough to require extensive treatment. The bite of just a single flea can cause this kind of reaction in some highly allergic pets.

Fleas can also transmit tapeworms to pets and people. In some cases, they can play a role in transmitting an unpleasant disease called *cat-scratch fever*, between cats and humans. And in
severe infestations, particularly in old, ill, or young animals (puppies or kittens), feeding fleas can remove so much blood from a pet that they can cause a debilitating and even life-threatening anemia.

Fleas can be found almost everywhere at any time of year. Depending on where you live, they may seem less prevalent during cooler months, but they can still survive through the winter on pets and in homes. They can be brought into your yard or even your home by wildlife, such as raccoons, opossums, and small rodents.

**Treating Heartworm Disease**

In dogs, if heartworm disease is detected early enough, it can be treated before permanent damage is done to the heart, lungs, and blood vessels. However, if the infection has been present for a long time or consists of a large number of worms, the risk of complications can increase. In these cases, treatment can be more expensive and complicated, and dogs may need many months to recover from the infection. Hospitalization may be required.

For cats, there is no approved medical treatment for heartworm disease. Your veterinarian can discuss with you how to monitor your cat and manage the signs of disease. Antibiotics, steroids, and other medications are sometimes recommended. For cats with severe breathing problems or other complications, hospitalization may be needed. In some cases, surgical removal of adult worms may be attempted. However, this surgery is costly and has some risks.

**Treating Fleas**

Once a flea infestation is established, it can be very difficult to eradicate due to the complex life cycle of these pests. Fleas have four life stages: eggs, larvae, pupae, and adults. Several of these stages can live in the environment (off of your pet). For every flea you see on your pet, there are probably hundreds more lurking in their egg, larval, or pupal forms in your pet’s living environment, just waiting for the right conditions to hatch or develop into blood-sucking adults. As a result, treatment for their removal is usually multi-pronged and may take several months of consistent effort.

First, you must treat every pet in your home, whether or not you see fleas on them. Some flea treatment products target adult fleas, whereas others may also kill the immature stages (eggs, larvae, or pupae). Ask your veterinarian which option is recommended for your pets.

Other management measures may include frequent vacuuming of carpets and laundering of pet bedding to remove fleas, eggs, larvae, or pupae that may be hiding in those places. In some cases, your veterinarian may also recommend treating the home with an area spray or fogger. If your pet is allowed outside, your veterinarian may want to discuss treating “flea-friendly” outdoor areas (such as crawl spaces, shrubs, and moist/shaded areas) with pesticides.

**Prevention**
Fleas and heartworms can be easily prevented by using safe, effective, and easy-to-administer monthly medications. Some of these products are given orally, whereas others are applied topically to the pet’s skin (these are called *spot-on* medications). There is also an injectable heartworm preventive for dogs that can be administered every 6 months by your veterinarian.

Some heartworm and flea preventive products have the added benefit of also controlling other internal parasites of concern, such as roundworms and hookworms (in dogs and cats) and whipworms (in dogs). Some products also target other external parasites, such as ticks and mites.

In some cases, the best protection for your pet may not be the use of a single product, but rather the simultaneous administration of more than one product to effectively control parasites. Your veterinary team can help you decide which strategy may be best for your pet.

Preventing heartworms and fleas before they can become a problem is the safest, smartest, and most effective way to combat these parasites and keep your beloved canine and feline friends healthy! Ask your veterinarian which product(s) he or she recommends for your pet’s situation.

**Caution:** Some parasite control products cannot be used on cats. Consult your veterinarian regarding which specific products can be used for cats to safely prevent fleas and heartworms.
Probiotics

- Probiotics are beneficial bacteria that compete with harmful bacteria to restore the proper bacterial balance in the intestines of dogs and cats.
- Probiotics are administered when an overgrowth of harmful bacteria result in diarrhea, vomiting, or gas.
- Different probiotic bacteria have different effects on the digestive tract.
- Because probiotic products on the market can vary in their integrity and efficacy, it’s best to consult your veterinarian about the proper probiotic for your pet.

During the birthing and nursing processes, puppies and kittens ingest bacteria that make themselves at home in the intestines. Some of these bacteria are beneficial to the pet, and some are potentially harmful. The beneficial bacteria help digest food, produce energy for the cells lining the digestive tract, and help with immune function. They also help keep the potentially harmful bacteria to a minimum.

It’s been estimated that there are up to 500 different kinds of bacteria in a dog or cat’s digestive tract. Under normal conditions, the beneficial and harmful bacteria strike a balance, so there are no detrimental effects to the pet. However, a number of factors can cause an overgrowth of harmful bacteria, such as disease, parasites, antibiotics, old age, stress, and food changes. The resulting imbalance can lead to diarrhea, vomiting, and gas.

What Are Probiotics?

By definition, probiotics are live microorganisms, such as bacteria or yeast, which provide a health benefit to the pet when given in adequate amounts. These probiotics are available as supplements or as part of some diets. When pets experience an overgrowth of potentially harmful bacteria, probiotics are administered to increase the numbers of beneficial bacteria and restore the balance in the digestive tract.

How Do Probiotics Work?

When beneficial bacteria are added to the digestive tract, they adhere to the walls of the intestines, so there is less room for the harmful bacteria to colonize there. They also compete for food, and alter the pH of the environment, making it less conducive to the survival of harmful bacteria. By restoring the balance of bacteria, probiotics help relieve the diarrhea, vomiting or gas the pet may be experiencing.

In humans, probiotics may also play a role in helping control allergic conditions, immune diseases, dental disease, as well as some nervous system problems. However, there has been no research to show that probiotics have the same effects in pets. Never give a human probiotic product to your pet unless instructed to do so by your veterinarian.

Why Would My Pet Need Probiotics?
Under normal conditions, a healthy pet shouldn’t need probiotics, because the intestinal tract can usually maintain the proper bacterial balance on its own. However, antibiotics, stress, and other factors can alter this balance. This can lead to an increase in harmful bacteria and resulting intestinal problems in some pets. Your veterinarian may recommend probiotics if your pet is showing signs of an overgrowth of harmful bacteria.

**How Do I Choose A Probiotic?**

Different types of bacteria exert different effects in the digestive tract. That’s why probiotics used in humans may not have the same beneficial effects in pets.

Also, remember that probiotics are living organisms. They must survive not only the manufacturing process, but also storage under certain conditions. A recent study showed that many of the probiotic products on the market did not have live organisms in the quantity specified on the label. These bacteria must also survive the acid environment of the stomach, so that they can have their effect in the intestinal tract.

That is why it’s best to ask your veterinarian for advice about probiotics. He or she can recommend a product that is appropriate for pets, and is produced by a reputable manufacturer.
Profender' for Cats

- Roundworms, hookworms, and tapeworms are parasites that live in the intestines of cats.
- Profender treats and controls roundworm, hookworm, and tapeworm infections in cats.
- Some intestinal parasites are contagious to humans, so protecting pets also protects family members.

What Are Roundworms, Hookworms, and Tapeworms?

Roundworms, hookworms, and tapeworms are extremely common parasites that spend their adult lives in the intestines of pets. There are several ways for cats and kittens to become infected with these intestinal parasites:

- Kittens can become infected with roundworms during nursing.
- Hookworm and roundworm eggs are shed in the feces of infected cats and can survive in the soil for a long time. Hookworm eggs mature to larvae and remain in the soil, and roundworm eggs become infective a few weeks after being deposited. When cats lie down in a contaminated environment and then groom themselves, sniff or lick the ground, or eat grass and other things outside, they can be infected.
- Cats can become infected with roundworms and hookworms when they kill and eat rodents, birds, and other small animals that can serve as hosts for these parasites.
- Hookworm larvae can infect hosts by penetrating the skin to enter the body.
- Most cats become infected with tapeworms through exposure to fleas. The immature stage of the tapeworm lives inside the flea; when the cat grooms a flea off of its skin or fur, the cat eats the flea (and the tapeworm) and becomes infected.
- In the intestines, tapeworm segments detach from the end of the adult tapeworm and are shed in the pet’s feces. Each segment contains numerous tapeworm eggs. Once in the environment, the segments break open, releasing the eggs, which eventually develop into tapeworm larvae. Pets can become infected with a certain type of tapeworm when they hunt and eat prey, such as birds, rodents, or reptiles that have eaten tapeworm larvae.

Some cats infected with intestinal parasites develop clinical signs such as weight loss, diarrhea, and vomiting. Adult roundworms resemble spaghetti and can sometimes be seen in feces or vomit. Similarly, tapeworm segments resemble small pieces of rice and can sometimes be seen in feces or around the cat’s anal area. However, in many cases there are no clinical signs and adult worms or tapeworm segments are not visible, so the only way to tell if a cat in infected is to test a sample of feces and identify the parasites.

What Is Profender?

Profender is a medication that safely and effectively kills and controls roundworms, hookworms, and tapeworms in cats.

How Is Profender Used?
Profender is very easy for cat owners to administer because it doesn’t require giving a pill or other medication by mouth. Profender is a topical liquid medication. Pet owners simply need to part the hair between the cat’s shoulder blades and apply a small tube of Profender liquid directly to the skin. A single application is effective, but the medication can be reapplied in 30 days if reinfection occurs.

Is Profender Safe?

Profender is safe for adult cats and can be used in kittens as young as 8 weeks of age and weighing at least 2.2 pounds. However, owners should be careful to keep pets from eating the product; treated cats should be separated from other pets until the product dries. Profender has not been tested in pregnant or nursing cats and should be used with caution in sick, debilitated, or heartworm-positive cats.

Why Might My Veterinarian Recommend Profender?

In most cats and kittens, roundworm, hookworm, and tapeworm infections are not fatal. However, hookworms attach to the lining of the intestines and drink blood, so the diarrhea that they cause can be bloody and very severe. Some cats and kittens can even develop anemia (an inadequate number of red blood cells) from blood loss secondary to a heavy hookworm infection. Roundworms can also cause significant illness, including severe diarrhea and intestinal blockage. Treating these infections in cats and kittens is an important part of promoting overall health, well-being, and longevity.

Roundworms, hookworms, and tapeworms pose a threat to cats, but they can also infect humans:

- Roundworm eggs can live for a long time in soil. Children are particularly at risk for exposure to roundworms if they play in soil or sandboxes that are contaminated with animal feces. In humans, roundworms are a significant cause of several types of larva migrans, an illness caused by migration of young worms through body organs such as the liver, lungs, and nervous system. Young roundworms may also travel to the eye, where they can cause blindness.
- Humans can become infected with hookworms when infective larvae in the environment penetrate the skin. The larvae then migrate under the skin, resulting in a condition called cutaneous larva migrans. People with this condition may experience itchy skin lesions with a snakelike pattern. Occasionally, swallowed larvae may migrate to the intestine, causing abdominal pain. However, hookworms do not mature to adults in humans, and the infections usually resolve on their own.
- Human tapeworm infections are relatively rare and usually occur when a person inadvertently consumes an infected flea. Most cases involve children. In isolated cases, people may become infected by accidentally eating certain types of tapeworm eggs. The tapeworm larvae form cysts, which may require drainage, surgical removal, or medication.

Because humans can become infected with roundworms, hookworms, and tapeworms, protecting your pets from these parasites also protects your family members.
How Can I Protect My Pets and Family Members From Intestinal Parasites?

Because parasite eggs and larvae can remain infective in the environment for months to years, pet feces should be removed and disposed of immediately. If possible, cats should be kept indoors to prevent them from hunting infected prey. However, even indoor animals can catch infected mice, so it is important to have fecal samples checked periodically for evidence of parasites.

If there are children in your household, make sure your pets are tested and treated for intestinal parasite infections. Also, make sure children wash their hands after handling pets or going to playgrounds, and keep sandboxes covered when not in use to discourage neighborhood cats from using them as litterboxes.

Any new pet coming into the home should be tested for intestinal parasites before being permitted to share a litterbox with other cats in the home. Veterinarians routinely treat young kittens with an antiparasite medication several times until they can be placed on a monthly heartworm preventive that also controls roundworms and other internal parasites. When cats reach adulthood, routine fecal examinations are recommended, and many veterinarians recommend year-round parasite preventive medication for the life of the pet. Always consult your veterinarian about the best ways to protect your pet—and your family—against internal parasites.
**Program' Injection for Cats**

- Program is a drug that helps control fleas on dogs and cats.
- Program has several formulations—tablets, an oral liquid, and an injectable solution.
- The injectable formulation of Program is only for use in cats.
- Proper use of Program injection is associated with very few side effects.

**What Is Program?**

Program is a drug that helps control fleas on dogs and cats. Program is available in three formulations: a tablet that is given monthly with food (to dogs and cats), a liquid that is given monthly in food (to cats), and an injectable formulation for administration every 6 months (to cats).

**Why Is It Important to Control Fleas on Cats?**

Fleas are more than just a nuisance parasite on cats. Fleas ingest your cat’s blood and can consume tremendous amounts of it on a daily basis. A heavily infested cat can develop severe anemia, a condition in which the body does not have enough blood to carry oxygen and support functioning, possibly causing the cat to become weak and to die. In addition, fleas can transmit diseases and other parasites, such as bartonellosis (cat-scratch disease) and tapeworms, to your cat. Cat-scratch disease and tapeworms can affect humans.

Some cats experience an allergic reaction in response to flea bites—a condition called *flea allergy dermatitis*. Cats with this allergic condition are severely itchy; the scratching, chewing, licking, and rubbing associated with the intense itching leads to wounds, scabs, hair loss, and infections on the skin.

Even indoor cats are not completely protected from fleas, as other pets (or humans) can bring fleas into the home.

**How Does Program Work?**

Although adult fleas are relatively easy to see, there are three other stages of the flea life cycle that can be “hidden” on your pet and in the environment. For every adult flea you see, there may be hundreds of eggs, larvae, and pupae that will eventually develop into adult fleas and contribute to an infestation.

The active ingredient in Program (lufenuron) is an insect development inhibitor. Lufenuron prevents flea eggs from developing into adult fleas. When a cat is given a Program injection (or the liquid or chewable tablet), the active ingredient, lufenuron, is absorbed and enters the cat’s bloodstream. When an adult female flea bites a cat that has received Program, lufenuron is deposited into the flea’s eggs, preventing them from developing and hatching.

Although Program does not kill adult fleas, preventing the development of eggs eventually eliminates new generations of fleas in the environment. In this way, Program can successfully
control a flea infestation. If there are multiple pets in the home, all pets should be treated with an appropriate product to achieve good flea control. In some cases, your veterinarian may recommend the use of a separate product to target adult fleas. Ask your veterinarian about the best way to control fleas for your pets.

**How Are Program Injections Given?**

Program injections are given every 6 months by your veterinarian. The injectable formulation is only for use in cats and is given just under the skin.

**What Are the Benefits and Risks of Program Injections?**

When administered properly and at label dosages, Program injection is associated with very few side effects. Some cats experience temporary soreness or may develop a small lump at the location where the injection was given. Vomiting, lethargy (tiredness), and appetite loss have also been reported. If your cat experiences any problems after receiving a Program injection, notify your veterinarian.

Controlling fleas is an important part of maintaining your cat’s health. For pet owners who have difficulty medicating their cats or applying a topical (spot-on) flea control product each month, Program injections offer an excellent alternative for achieving long-term flea control. Ask your veterinarian if Program injections are a good choice for your cat.
Pyoderma

- Pyoderma is a bacterial infection of the skin.
- It varies in severity from a superficial rash to deep, pus-filled ulcerations.
- Problems that can lead to pyoderma include parasites, allergies, and hormonal imbalances.
- Treatment of pyoderma is aimed at clearing the infection and treating the primary cause.

What Is Pyoderma?

Pyoderma is a bacterial infection of the skin. It can occur when the skin’s natural defenses break down, allowing common skin bacteria to multiply out of control (called overgrowth). Bacteria from another source may also take hold when given the opportunity. Other organisms, such as yeast and fungal organisms, can take advantage of the skin changes that occur with pyoderma and establish their own infections. Dogs and cats of any age can be affected by pyoderma.

What Are the Signs of Pyoderma?

The clinical signs of pyoderma may include:

- Rash
- Itching
- Crusts, scales
- Pus-filled blisters (called pustules)
- Hair loss
- Oozing sores

What Are the Causes of Pyoderma?

Any disruption in the immune system’s ability to keep bacteria from overgrowing on the skin can lead to pyoderma, including the following:

- Physical damage to the skin (bite wounds, bug bites, scratching, ringworm, mange, burns, chemical contact irritation, tumors)
- Allergies to fleas, foods, pollens, or other allergens
- Immunosuppression caused by certain medications, viral disease, cancer, liver disease, thyroid disease, or other illness

How Is Pyoderma Diagnosed?

If your veterinarian looks at your pet’s skin and suspects pyoderma, he or she may perform diagnostic tests to confirm a bacterial infection and determine the primary cause. The following tests may be among your veterinarian’s recommendations:

- Skin testing, which may include the following:
- **Adhesive tape prep:** Placing a small strip of adhesive tape against the pet’s skin or hair for a few seconds permits skin cells and other debris to stick to the tape. When your veterinarian examines the tape under a microscope, bacteria, yeast, inflammatory cells, cancer cells, skin parasites, and other abnormalities can often be seen.

- **Skin scrape:** Gently scraping the surface of the skin with a dull scalpel blade or similar instrument can remove cells just below the skin’s surface. These cells are then examined under a microscope. Mites that cause mange can be identified using this technique.

- **Bacterial culture:** A swab of the skin (or of a pustule) can be sent to the lab to determine what bacteria are present and which antibiotics should be used to treat the infection.

- **Fungal culture:** Hairs from infected skin can be sent to the lab to be tested for ringworm or other fungal infections.

- **Biopsy:** After a local anesthetic or sedation is administered to the patient, a small piece of skin can be removed and sent to the lab for evaluation.

- **Blood testing** looks for internal disorders that may have affected the skin’s barriers to infection. More extensive testing may be pursued to look for thyroid disease or other specific disorders.

- **Allergy testing** determines if an allergy exists and whether specific treatment for the allergy is possible.

**How Is Pyoderma Treated?**

It is very important to find the underlying cause of pyoderma to effectively treat the infection and help prevent it from happening again (recurring). The infection itself can usually be taken care of with a course of oral or topical antibiotics prescribed by your veterinarian. However, the underlying cause, whether it is parasites, hormonal imbalances, or allergies, must be specifically addressed to prevent the problem and keep it from recurring. When a pet’s primary disease is under control, chances are good that the animal will recover from pyoderma and not have episodes of recurrence.
Pyometra

- Pyometra is a severe bacterial infection of the uterus that can be life threatening.
- It can occur in any unspayed female cat or dog.
- Older, unspayed female dogs that have not had a litter are most commonly affected.
- Hormones can cause the uterine lining to thicken and form cysts, creating an ideal breeding ground for bacteria that ascend from the vagina, resulting in infection.
- Diagnosis is made with blood work, abdominal radiographs (x-rays), abdominal ultrasound, and/or examination of any vaginal discharge.
- Surgical removal of the uterus and ovaries is the best treatment.
- Antibiotics may also be needed.
- Spaying female pets early can prevent pyometra and reduce the risk of developing breast tumors.

What Is Pyometra?

Pyometra is a severe bacterial infection of the uterus that can be potentially life threatening. The condition is most common in older, unspayed female dogs that have never had a litter, but it can occur in any female dog or cat that has not been spayed. In dogs, pyometra is most likely to happen in the first few weeks to months after a heat cycle.

Pyometra is described as being “open” or “closed.” With “open” pyometra, the cervix (the portion of the uterus that connects with the vagina) is open. Fluid that forms in the uterus as a result of the infection can drain through the vagina out of the body.

When the cervix is closed, as in “closed” pyometra, the fluid in the uterus cannot drain through the vagina, so it builds up, stretching the uterine walls and potentially rupturing the uterus. If this occurs, the infection spreads to the abdomen and possibly into the bloodstream, leading to shock and, often, death.

What Causes Pyometra?

When a pet is in heat, the dominant hormone affecting the uterus is estrogen. At the end of the heat cycle, estrogen levels drop and progesterone (another hormone) levels rise. Over the course of several heat cycles, progesterone can cause changes in the uterine lining, such as thickened tissue and cysts. This creates the ideal environment for bacteria to flourish.

Pyometra occurs when bacteria ascend from the vagina into the uterus and multiply. The body attempts to fight off the infection by sending white blood cells to the uterus, which creates the fluid buildup.

Treatment with estrogen for other conditions (such as ending an unwanted pregnancy) can also predispose the pet to pyometra. Because of this potential side effect, this practice has fallen out of favor in the past few years.

What Are the Signs of Pyometra?
Pets that have open pyometra may have a foul-smelling white, yellow, or blood-tinged discharge from the vagina. Otherwise, the signs can be somewhat vague, such as:

- Lethargy (tiredness)
- Loss of appetite
- Vomiting
- Increased drinking and urinating
- Abdominal distention (swelling)

**How Is Pyometra Diagnosed?**

Your veterinarian will most likely recommend blood work and abdominal radiographs (x-rays) to visualize the uterus. Occasionally, an abdominal ultrasound may be needed to get a better view of the uterus. If your pet has a vaginal discharge, your veterinarian may examine the discharge under a microscope for signs of infection.

**How Is Pyometra Treated?**

Surgical removal of the uterus and ovaries is the best treatment for pyometra. In most cases, this is an emergency surgery that must be performed before the uterus ruptures or the infection spreads to other parts of the body. Because it is a more complicated surgery than a typical spay in a healthy animal, it will most likely be more expensive. The pet may also need intravenous fluids and antibiotics.

If the pet is a valuable breeding animal, and she has open pyometra, it may be possible to administer special hormones to shrink the uterus back to size and avoid surgery. However, these medications can have serious side effects, and the risk of pyometra recurring is high.

**How Can Pyometra Be Avoided?**

Early spaying of female pets prevents pyometra. Spaying before the first heat cycle will also reduce the chance of your pet developing breast tumors later in life.
Rabies

- Rabies is a deadly disease that is generally fatal in all species.
- It is transmitted through contact with saliva of an infected animal.
- There is no effective treatment in animals. It is virtually preventable through vaccination.

What Is It?

Rabies is a deadly disease caused by a virus that attacks the central nervous system. All warm-blooded animals, including wild animals, dogs, cats, and humans, are susceptible to it. Once clinical signs appear, rabies is generally fatal. However, the disease is also generally preventable through vaccination.

While the disease is not common, it remains prevalent in wildlife populations—primarily raccoons, bats, foxes, and skunks—that may have contact with domestic animals. Pets are at risk of contracting the disease from wild animals and potentially transmitting it to humans.

The virus can have an incubation period lasting from days to months. Rabies is usually transmitted through contact with the saliva of an infected animal. An animal’s saliva becomes infective once the virus has traveled through the animal’s nervous system from the initial bite site to the brain and, ultimately, the salivary glands. Pets and people usually become infected through a bite wound. Once the virus enters the salivary glands, the animal can pass the infection to other animals or humans through saliva. Animals with rabies are referred to as rabid.

Signs of Rabies

Clinical signs can be vague and difficult to identify. Signs can progress through several stages, and not all infected animals show evidence of all stages:

- **Early signs**: Fever, acting nervous or agitated, hiding
- **Later signs**: Aggression, increased agitation, erratic behavior
- **End stage**: Muscle weakness and paralysis, coma, death

Rabid animals can show unusual agitation or aggression or appear “drunk” or unable to walk. Seizures and drooling may also occur. Drooling results from paralysis of the throat muscles, preventing swallowing. Once signs appear, death usually occurs within 10 days.

Diagnosis and Treatment

Rabies is diagnosed in animals based on clinical signs and postmortem (after death) laboratory testing of brain tissue. There is no effective treatment in animals.

Prevention

Because of the potentially serious human health implications, rabies vaccination of dogs is required by law in virtually all states, and many states also require cats to be vaccinated.
Vaccination is the most effective way to prevent the disease in animals and, in doing so, to safeguard human health. In addition, it is recommended that you minimize your pets’ exposure to animals that may transmit the infection.

Your veterinarian can advise you of the rabies vaccination schedule required for your state. Some states require an initial vaccination at 12 to 16 weeks of age, a second vaccine at 1 year of age, and subsequent vaccinations every 3 years. Other states require annual revaccination.

Other preventive measures include:

- Keeping your pet away from wildlife
- Ensuring that all other dogs or cats that your pet has contact with are vaccinated
- Minimizing contact with stray animals; do not feed stray animals with an unknown vaccination status or allow them to remain near your home and pets

Vaccination helps protect your pet from unnecessary euthanasia or extended quarantine if your pet has contact with a rabid animal. Any pet that bites a human and has an unknown or out-of-date vaccination status may be subject to quarantine or euthanasia, depending on state laws.
Radiography

- Radiography is painless, very safe, and noninvasive, and it can sometimes be performed during an outpatient visit while you wait.
- Radiography is useful for evaluating the bones and the size, shape, and position of internal organs.
- Sedation is sometimes recommended for patients undergoing radiography.
- Radiography can help your veterinarian diagnose numerous medical conditions, including broken bones, intestinal blockages, bladder stones, and some types of cancer.

What Is a Radiograph?

A radiograph (sometimes called an x-ray) is a type of photograph that reveals the body’s bones and internal organs. The procedure for obtaining a radiograph is called radiography. Radiography is a very useful diagnostic tool for veterinarians because it can help obtain information about almost any organ in the body, including the heart, lungs, and abdominal organs, as well as the bones.

How Does Radiography Work?

Traditional radiography machines use very low doses of radiation delivered in a focused beam (an x-ray) that is aimed at a photographic plate containing specialized photographic film. The patient is positioned between the x-ray beam and the photographic plate. When the x-ray beam passes through the patient, an image is created on the specialized film. Structures that are very thick or dense, such as bone, do not allow much of the beam to penetrate and expose the film. These structures look very bright or white on a radiograph (see the x-ray image). In contrast, structures that are not dense (such as gas in the intestines or air in the lungs) allow the beam to penetrate more completely and expose the film. As a result, these structures appear relatively dark when the radiograph is viewed. Structures that are of medium density, such as fluid, appear in various shades of gray on the film.

Digital radiograph machines use a very similar principle, but the final image can be much sharper and can show greater detail than images obtained from traditional radiography machines.

How Is Radiography Performed?

Radiography is painless, safe, and completely noninvasive. Your pet will be positioned on the x-ray table, and the body part that will be radiographed is measured. This is necessary so that the intensity of the x-ray beam can be precisely adjusted to capture the most accurate information. Once the measurements are complete, the x-ray tube (which will generate a beam of low-level radiation) is aligned over the body part, and a button is pushed on the radiograph machine to take the “photograph.” This part of the procedure is very much like taking a photograph with a camera. In most cases, at least two “pictures” are taken from different angles to create a three-dimensional image of the body part being studied.
Your veterinarian may recommend that your pet receives sedation before undergoing radiography. Patients that are sedated are much easier to position because they are completely relaxed. Sedation may also be recommended if the patient has a broken bone or other painful condition.

**What Are Radiographs Used For?**

Radiographs are used to examine the bones and the size, shape, and position of many of the body’s organs. The size of organs is important because some medical conditions can cause enlargement of the heart, liver, or other organs. Some chronic conditions, such as chronic kidney disease or chronic liver disease, can cause these organs to appear smaller than normal on a radiograph. The shape of organs can be altered or distorted by certain medical conditions, including intestinal blockages or cancer. Tumors, depending on their size and location, can be detected using radiography. Radiography can also be used to diagnose many other conditions, such as bladder stones, broken bones, chronic arthritis, and certain spinal cord diseases.

**What Are the Benefits and Risks of Radiography?**

Radiography has many benefits and very minimal risks. It is very safe, completely painless, and noninvasive. It is available in most veterinary practices and can sometimes be performed during an outpatient visit while you wait. Depending on the type of radiographic study being performed, the procedure may take only a few minutes.

The risks of radiography are minimal. Because the level of radiation exposure needed to perform radiography is very low, even pregnant females and very young pets can undergo radiography. If a pet is very unstable, such as a pet with severe breathing difficulties, the stress of performing radiography may be a concern. In these cases, it may be necessary to stabilize the pet (with oxygen or other therapy) before attempting to perform radiography. In the vast majority of cases, the benefits of performing radiography far outweigh the possible risks. Radiography is a valuable tool for your veterinarian because it can provide critical information about many different illnesses and medical conditions.
Refilling Medications

- Remembering to refill prescriptions on time helps protect your pet’s safety and health.
- Some veterinarians require 24 hours’ notice for prescription refills, so be sure to allow enough time for your request to be processed.
- The best way to avoid running out of medication is to plan ahead and order refills on time.
- Despite our best efforts as pet owners, we sometimes forget to do things. However, whether you make a note on a calendar or arrange another reminder for yourself, it is important to make sure you remember to refill your pet’s medications on time. Your pet’s health and safety may depend on it!

Why Do Pets Need Long-Term Medications?

Many illnesses in pets can require long-term administration of medication, including some very common medical conditions:

- Seizure disorders (such as epilepsy)
- Heart disease
- Diabetes
- Thyroid disease
- Arthritis

In most cases, long-term medication does not cure the disease, but it controls the clinical signs or has other effects that make the disease more manageable. In some cases, medications can control the signs of chronic illnesses so completely that pet owners sometimes mistakenly believe their pet has been cured and discontinue the medication, only to have the clinical signs reappear. If your pet is having problems or side effects from a medication, notify your veterinarian right away. But in general, you should always give medications as directed by your veterinarian and should not discontinue a medication unless advised to do so.

Long-term medications are not always used to treat illnesses; sometimes, they are given to prevent problems. For example, many veterinarians recommend year-round administration of heartworm preventive medication and products that control fleas, ticks, and intestinal parasites.

What Should I Do If I Run Out of Medication?

If you run out of medication, call your veterinarian right away. In some cases, your pet may be okay if a few doses of the medication are missed; your veterinarian can advise you about what steps to take in the meantime. However, missing even a few doses of insulin, for example, can cause serious problems for your pet. Similarly, certain medications (such as steroids) cannot be discontinued abruptly without causing illness.

How Can I Avoid Running Out of Medication?

The best way to avoid running out of medication is to plan ahead and order refills on time!
Every person’s life is different, so what works as a reminder for one family may not work for another. Here are some tips:

- **Ask your veterinarian if their office can send you reminders.** Many veterinarians have computer systems that can let them (and, more importantly, you) know when your pet’s medications need to be refilled. Ask your veterinarian if their reminder system may work for you. In some cases, a phone call, e-mail, or postcard can serve as a reminder.

- **Find a creative way to remind yourself.** This may involve marking your calendar or sending yourself an e-mail reminder when it is time for a medication refill. Some pet owners link medication refills to another regular event; for example, if there is a household duty that you perform monthly, use that event to remind yourself to also check your pet’s medication or order a refill.

- **Plan ahead if you are going to be traveling.** Before you leave, check to be sure that you have enough of your pet’s medication to last for the duration of your trip. If you will run out, leave plenty of time to pick up a refill from your veterinarian before you leave—don’t just drop by on the way to the airport. If you are planning an extended trip with your pet, you may need to have his or her medical records forwarded to a veterinarian at your new location so that medications can be dispensed when needed.

- **Allow enough time for your veterinarian to refill your medication.** Some veterinarians require 24 hours’ notice to process prescription refills. Also, some medications must be specially formulated or ordered from an outside pharmacy. Make sure you know your practice’s refill policy, and allow enough time for prescription refills to be processed.
Ringworm

- Ringworm is a fungal infection of the skin, hair, and/or nails in dogs and cats.
- It is a zoonotic disease, meaning that it can be transmitted from animals to humans.
- The infection is also contagious among animals.
- Ringworm is transmitted by direct contact with an infected animal or by touching objects that have been exposed to the animal.
- The condition is usually diagnosed with a fungal culture.
- Some infections may resolve on their own without treatment, but topical and/or oral treatment can lead to faster resolution of the infection and limit the spread of infection to other animals and people in the household.
- Environmental treatment is important to eliminate the source of infection.

What Is Ringworm?

Despite the name, ringworm is not caused by worms, but by a fungus. Most infections in pets are caused by one of three types of fungi, the most common being *Microsporum canis*. The fungi invade the superficial layers of the skin, hair, and/or nails. Because fungi thrive in moist environments, these organisms are especially persistent in humid climates and damp surroundings.

Is Ringworm Contagious?

Ringworm is not only contagious to other animals, it is considered a zoonotic disease, meaning that it can be transmitted from animals to humans. Children and those with compromised immune systems are most at risk. In people, ringworm infection may appear as red, raised and itchy lesions on the skin.

What Are the Signs of Ringworm?

In pets, the fungal infection causes the hair to become brittle and break off, resulting in hairless patches of skin, most commonly on the face, ears, and legs. Within these hairless patches, the skin may be crusty or mild inflamed. Nails that are infected may become deformed.

Typically, the infection is not itchy, although secondary (associated) bacterial infections may cause pets to scratch at the lesions. Some animals may have no signs but may be sources of infection, shedding spores into the environment.

How Is Ringworm Transmitted?

Ringworm is typically spread by contact with an infected animal. Because animals can shed fungal spores and infected hairs into the environment, touching objects the infected animal has been in contact with, including bedding and brushes, can also lead to infection. Organisms that are shed into the environment can remain infectious for months.

How Is Ringworm Diagnosed?
The best way to diagnose ringworm infection in an animal is by fungal culture. The veterinarian will pluck a few hairs from several lesions and place them on a culture medium, where the organism can grow. Because it takes time for fungal growth, results may not be available for 2 weeks or more.

Veterinarians may also examine skin lesions under a Wood’s lamp. In some cases—but not all—the organism may fluoresce (glow) a yellow-green color. Because this test is not always accurate, a fungal culture is still the preferred method of diagnosis.

In cases in which people are diagnosed with ringworm, all animals in the household should be tested because some animals may be infected but show no signs. The same goes for multi-pet households in which one pet has been diagnosed with ringworm. Other pets should be tested and treated if positive in order to eliminate sources of ongoing infection.

How Is Ringworm Treated?

In healthy animals, the infection may be self-limiting, meaning that it will eventually resolve without treatment. However, treatment can hasten resolution of the problem and limit the spread of infection to other animals and people in the household.

Pets may be treated with topical shampoos or dips, oral medications, or both. Before applying a topical treatment, your veterinarian may recommend shaving or clipping the infected area. Topical treatments include lime sulfur dip or anti-fungal shampoos.

There are a number of oral medications for ringworm, such as griseofulvin and itraconazole. Griseofulvin should never be given to pregnant animals because it may cause birth defects in developing puppies or kittens. It may also cause bone marrow suppression in cats, especially those with feline immunodeficiency virus (FIV) or feline leukemia virus (FeLV). Administration of griseofulvin may require periodic blood monitoring tests. Itraconazole is becoming the preferred treatment for cats because it has fewer side effects.

Thorough cleaning and treatment of the home environment is important to prevent recurrence and spread of the infection to pets and people. To eliminate fungal organisms in the environment:

- Clip affected areas on the pet and dispose of all hairs
- Confine infected pets to one area of the house
- Thoroughly vacuum any areas that were highly trafficked by the pet, and dispose of the vacuum bag outside
- Wash all bedding and toys in hot water
- Dispose of any carpets or rugs, if possible
- Clean exposed areas and kennels with chlorine bleach that has been diluted 1:10 or with an anti-fungal spray recommended by your veterinarian
- Repeat vacuuming and surface treatment at least monthly until infection is resolved

Treatment may be required for 6 weeks or longer. Once skin lesions have resolved, fungal cultures should be performed again. Treatment should not be stopped until fungal cultures are
negative. Discontinuing treatment based only on resolution of lesions may result in recurrence of the infection
Rodenticide Poisoning

- Many mouse and rat poisons contain ingredients that can be toxic and even fatal to your pet.
- These toxins may cause blood clotting problems, nervous system problems, or kidney failure.
- Signs of poisoning include pale gums, bruising, bleeding from the mouth or nose, seizures, and increased drinking and urination.
- If your pet has ingested a rodent poison, contact your veterinarian immediately.
- The product packaging will help identify the type of poison and the proper treatment.
- Diagnosis may require blood tests, blood clotting tests, and radiographs (x-rays).
- Treatment may involve hospitalization, medications to counteract the effect of the toxin, blood transfusions, intravenous fluids, and antiseizure medications.

What Is Rodenticide Poisoning?

Rodenticide poisoning occurs when dogs and cats accidentally eat mouse or rat poison. These products contain a wide range of ingredients that differ in potency and effect. In general, most rodent poisons cause one of three effects in animals:

- Blood clotting problems, resulting in internal hemorrhage (bleeding)
- Nervous system problems, including seizures and paralysis
- Kidney failure

Any poison that is intended to kill a mouse or rat can be fatal to dogs and cats as well.

If you think that your pet has eaten rodent poison, contact your veterinarian immediately. If your veterinarian is not available, call the ASPCA Animal Poison Control Center at 1-888-426-4435. (You may be charged for the call.) It is helpful if you have the product packaging. Knowing the exact ingredients in the poison can help determine the best treatment for your pet.

Ingredients in rodent poisons that are potentially toxic to pets include brodifacoum, bromadiolone, bromethalin, chloropanthrene, cholecalciferol, coumarin, diphacinone, diphenthialone, pindone, strychnine, warfarin, and zinc phosphate.

What Are the Signs of Rodenticide Poisoning?

The signs of rodenticide poisoning vary depending on the type and amount of poison consumed and the length of time since the pet consumed the poison. In some cases, signs may not appear until a few days after the pet has eaten the poison.

With products that cause clotting problems, signs of internal hemorrhage may not be obvious. Signs you might see include:

- Lethargy (tiredness), depression
- Pale gums
• Trouble breathing
• Bruising
• Bloody vomit, urine, or feces
• Bloody nose
• Bleeding from the gums

Pets that have eaten poisons that cause nervous system problems may show the following signs:

• Lethargy, depression
• Loss of appetite
• Stumbling, difficulty walking
• Seizures
• Paralysis

And products that lead to kidney failure may cause:

• Vomiting
• Increased drinking
• Increased urination

**How Is this Condition Diagnosed?**

Again, if you have the packaging from the rodent poison, bring it to the veterinary clinic with your pet. It will help your veterinarian determine the right diagnosis and treatment.

Depending on the suspected ingredient in the poison, your veterinarian may recommend blood tests, tests to assess the clotting ability of the blood, and radiographs (x-rays) to check for signs of internal bleeding.

**How Is Rodenticide Poisoning Treated?**

If your pet ate the poison within the past hour, your veterinarian may induce vomiting or anesthetize your pet to flush the poison from the stomach. He or she may also give your pet a liquid solution of activated charcoal to help minimize further gastrointestinal absorption of the poison.

If your pet has eaten a rodent poison that affects blood clotting, your veterinarian will likely begin administering medication to improve blood clotting. In some cases, this medication must be continued for several weeks. Depending on the pet’s condition, hospitalization and blood transfusions may also be necessary.

There are no antidotes for the poisons that affect the nervous system or the kidneys. Your veterinarian may need to give the pet antiseizure medications or intravenous fluids to help ease the symptoms until the poison is out of the pet’s system.

**How Can I Protect My Pet From Rodenticide Poisoning?**
If you have to use rodent poison, keep it out of the reach of curious pets. That said, if rodents in your house eat poison, there’s always a chance that your pet could eat a poisoned rodent. While the likelihood of this harming your pet is low, it may be a problem if the rodent has eaten large quantities of one of the newer kinds of rodenticides. When in doubt, contact your veterinarian.
Roundworms

- Roundworms are parasites that live in the intestines of dogs and cats.
- Roundworm infections can be transmitted from animals to humans.
- Depending on the type of roundworm, pets can be infected by their mother during pregnancy or nursing, by eating roundworm eggs in the environment, or by eating infected rodents or birds.
- Signs in pets include a pot-bellied look, failure to gain weight, dull coat, vomiting, and/or diarrhea.
- Roundworm infections are diagnosed by finding microscopic eggs during a veterinary fecal exam or by finding worms in vomit or feces.
- Several antiparasite medications can treat roundworm infections.
- Regular fecal exams and monthly preventive medications are recommended to keep pets free of roundworms and other internal parasites.

What Are Roundworms?

Roundworms are extremely common parasites that spend their adult lives in the intestines of puppies, kittens, dogs, and cats. There are several species of roundworms. Some can grow to about seven inches in length and cause severe illness, especially in younger pets.

How Do Pets Become Infected With Roundworms?

Mother dogs can pass roundworms on to developing puppies in the uterus or through milk when the puppies are nursing. Kittens do not become infected while in the uterus, but they can become infected when nursing.

Adult roundworms live in the intestines, where they reproduce by laying eggs. An infected dog or cat sheds roundworm eggs into the environment when it passes feces. Once the eggs are in soil, the worms develop to the infective stage within the egg. Other pets can become infected by eating the eggs from contaminated soil, which often happens when pets groom themselves, sniff or lick the ground, or eat grass and other things outside. Pets can also be infected when they eat infected prey, such as birds and rodents.

Once roundworm eggs are eaten, they hatch in the digestive tract. In most cases, the worms then migrate through the liver and lungs. Once in the lungs, the young worms are coughed up and swallowed, eventually making their way to the small intestine, where they mature into adults and reproduce.

What Are the Signs of a Roundworm Infection?

Puppies and kittens are usually the most severely affected and often look pot-bellied. Other signs include:

- Coughing
- Dull, thin coat
- Vomiting
- Diarrhea
- Failure to gain weight

**Can People Get Roundworms From Their Pets?**

Yes. Roundworms are considered zoonotic parasites, meaning that they can be transmitted from animals to humans. Children are most at risk for infection. They usually become infected from eating contaminated soil, which is often found at playgrounds frequented by pets.

In humans, roundworms are a significant cause of several types of *larva migrans*, an illness caused by migration of young worms through body organs such as the liver, lungs, and nervous system. Young worms may also travel to the eye, where they can cause blindness.

If there are children in your household, make sure your pets are tested and treated for any roundworm infection. Keep your pets on a monthly preventive that also controls roundworms. Make sure children wash their hands after handling pets or frequenting playgrounds. Keep sandboxes covered when not in use to discourage neighborhood cats from using them as litterboxes.

**How Are Roundworm Infections Diagnosed?**

Your veterinarian can diagnose a roundworm infection by finding microscopic roundworm eggs on a fecal exam. Unfortunately, some owners discover that their pet is infected when live roundworms are expelled in vomit or feces.

**How Is an Infection Treated?**

Veterinarians routinely treat young pets with an antiparasite medication several times, until they can be placed on a monthly heartworm preventive that also controls roundworms and other internal parasites. Roundworm infections are very common in puppies and kittens, but eggs aren’t always apparent in fecal material from infected pets. Your veterinarian may therefore recommend deworming your puppy or kitten even if a fecal test does not confirm a roundworm infection.

Many antiparasite medications only kill the adult worms in the intestines, not the migrating younger worms or eggs. Therefore, if your pet is infected with roundworms, your veterinarian may recommend two to three rounds of treatment to clear the infection. Generally, fecal samples are rechecked after treatment to make sure the infection has been resolved.

**How Can I Protect My Pet From Roundworm Infections?**

Because roundworm eggs can remain infective in the environment for months to years, pet feces should be removed and disposed of immediately.
When walking your dog, keep him or her on a leash to help reduce exposure to areas that may have been contaminated by other dogs. This will also minimize the chance of your dog eating infected rodents and birds. If possible, cats should be kept indoors to prevent them from hunting infected prey. However, even indoor animals can catch infected mice. Sharing litterboxes and outdoor bathroom areas can spread roundworms among pets, so any new pets should be tested for roundworms and other internal parasites before being introduced to your other pets.

Always consult your veterinarian about the best ways to protect your pet—and your family—against internal parasites. A monthly preventive that includes medication for roundworms is a good start for year-round protection from parasites. Since it’s easy to forget a monthly treatment, periodic fecal exams are still recommended to ensure your pet is parasite-free.
Seborrhea

- *Seborrhea* is a general term used to describe skin and hair that has excessive flaking or grease.
- While primary seborrhea is a rare inherited disease, most cases of seborrhea are secondary to other disease processes such as allergies, external parasites, infections, and glandular or immune system diseases.
- Treatment for the underlying disease may help resolve cases of secondary seborrhea, but primary seborrhea usually requires lifelong treatment.

What Is Seborrhea?

*Seborrhea* is a general term used to describe skin and hair that has excessive amounts of flakes (like dandruff) and/or grease. In most cases, the term describes the clinical signs, and not a disease itself.

The one exception is primary seborrhea, which is a relatively rare inherited disease in breeds such as cocker spaniels and Persian and Himalayan cats. Pets with primary seborrhea do not produce and shed/replace skin cells normally, or they may have a defect in the function of the glands in their skin. Seborrhea may be limited to one area of the body or may be more generalized.

In most pets, seborrhea describes the clinical signs that are secondary to an underlying disease process. The term *seborrhea sicca* is used to describe dry, flaky skin conditions, and *seborrhea oleosa* is used for greasy, oily (and often smelly), flaky skin.

What Causes Seborrhea?

Primary seborrhea is also known as *idiopathic seborrhea*, meaning the exact cause is not known. Because it occurs commonly in certain breeds, genetics is thought to play a role.

Secondary seborrhea is usually caused by an underlying disease process, such as allergies, bacterial or yeast infections, external parasites, hypothyroidism (low amounts of thyroid hormone), Cushing’s disease (too much adrenal hormone), or immune system diseases.

How Is Seborrhea Diagnosed?

Your veterinarian will begin by taking a complete medical history of your pet. He or she will also perform a thorough physical examination.

Most diagnostic tests are designed to help determine the underlying disease condition that results in the signs of seborrhea. Your veterinarian may perform a skin scraping to search for parasites, bacteria, and fungi under the microscope. This involves gently scraping areas of affected skin with a scalpel blade until they bleed slightly. Several skin scrapings are usually done at different affected locations, and the resulting samples of skin cells and debris are mounted on a slide and examined under a microscope.
Your veterinarian may also recommend specific blood tests to check for underlying diseases, such as hypothyroidism and Cushing’s disease. In addition, skin cultures or skin biopsies (tissue samples) may be required to pin down a definite diagnosis.

**How Is Seborrhea Treated?**

Unfortunately, primary seborrhea usually can’t be cured, but it can be managed. Treatment may involve a combination of a hypoallergenic diet, vitamin or fatty acid supplements, and antibiotic or antifungal medications to manage secondary skin infections. Medicated shampoos and moisturizers may also be recommended. Pets with primary seborrhea should not be bred, to prevent passing on the disease.

Treatment of secondary seborrhea varies depending on the underlying condition. Once the underlying condition (such as allergies or hypothyroidism) is controlled, the seborrhea may resolve. Medicated shampoos can also be helpful in some cases.
Selecting a Groomer

- Groomers are not regulated or licensed by a government agency.
- When looking for a groomer, seek recommendations from friends, veterinarians, trainers, and boarding facilities.
- When looking for a groomer, visit the grooming facility during regular business hours to check the cleanliness and observe how pets are handled.
- When visiting a grooming facility, ask about its health policies, including proof of vaccination.
- Some services, such as dental cleanings, should only be provided by a veterinarian.
- Brushing your pet and handling its paws at home can help make your pet more comfortable when it’s time for professional grooming.

How Do I Find a Groomer?

Choosing a grooming facility based on an ad in the Yellow Pages or on the Internet is not the best way to select a groomer. Because groomers are not regulated or licensed by any government agency, the skills and experience of groomers can vary greatly.

A good way to start looking for a groomer is by asking for recommendations from friends, veterinary hospitals, boarding facilities, and animal trainers. You can also visit Web sites, such as those of the National Dog Groomers Association of America (nationaldoggroomers.com) and the Professional Cat Groomers Association of America (professionalcatgroomers.com). These organizations provide groomers with education and certification and may be able to recommend a groomer in your area. You may also want to consult the Better Business Bureau (bbb.org) to ensure that no complaints have been lodged against a grooming facility that you are considering.

What Kind of Grooming Facility Is Best?

First, decide whether you would prefer to take your pet to a grooming facility or to have a mobile groomer come to your home. In general, mobile groomers charge a little more for convenience.

Before taking your pet for grooming, stop by the facility during regular business hours to see the facility and watch the groomer(s) in action. Ensure that the facility is clean and well-ventilated and that the cages look comfortable. If possible, watch the groomer(s) as he or she grooms pets, noting whether the pets are handled gently and appear stressed. If the facility uses heat-producing dryers, ask how the staff ensures that pets are not burned or overheated.

Ask about the facility’s health policy. If it doesn’t require proof of vaccination, it is in your pet’s best interest to go elsewhere. Ask about the policy on accepting sick pets. For example, coughing dogs may carry a contagious disease that can spread to your dog. For references, you may ask the facility for contact information of current clients.

What Services Should Be Included in Grooming?
It’s important to discuss what is included with the grooming fee. Most facilities offer bathing, drying, brushing, clipping, ear cleaning, and nail trimming. In most cases, there is an additional fee for animals that are severely matted or need additional shaving. If your pet has skin allergies, consider taking your own hypoallergenic shampoo to the groomer to avoid skin flare-ups.

Some services should only be performed by a veterinarian. Proper dental cleanings should be done while a pet is under general anesthesia to allow a veterinary professional to remove plaque and tartar from beneath the gum line with minimal stress to the patient. In addition, only a veterinarian should empty anal glands. If your pet has frequent ear infections, ask your veterinarian whether a groomer should pluck ear hair. Pets requiring any kind of tranquilizer or sedative, such as cats that are severely matted, should be groomed at a veterinary facility where they can be closely monitored.

**How Can I Make Grooming a Positive Experience for My Pet?**

If your pet will require a lot of grooming throughout his or her life, start familiarizing your pet with the grooming facility when he or she is young. At home, try to brush your pet and handle his or her paws on a daily basis. The more comfortable your pet is with being handled, the more tolerant and stress-free he or she will be at the groomer.
Selecting a New Kitten

- Take your time when deciding whether a kitten is right for you. The kitten you choose may be with you for 10 to 20 years or more.
- For best social development, a kitten should remain with its mother and/or littermates until 12 weeks of age.
- It can be tempting to adopt more than one or two kittens from a litter, so be careful not to agree to take home more kittens than you have time for and can afford.
- Don’t be tempted to choose a kitten based on looks alone. Look for personality, too.
- Before you decide to adopt a kitten, your veterinarian should check the kitten’s physical well-being.
- Adopting two kittens at the same time is often recommended so that they can continue to learn from each other and keep each other company.
- Before deciding to adopt a special-needs kitten, ask your veterinarian what you can expect in terms of the care required and the kitten’s prognosis.

Timing

Take your time when deciding whether a kitten is right for you. The kitten you choose may be with you for 10 to 20 years or more.

Kittens can leave their mother and littermates after they have been weaned, usually by 8 to 10 weeks of age. However, for best social development, a kitten should remain with its mother and/or littermates until 12 weeks of age. A kitten that is taken from its mother before weaning is complete may develop the troublesome behavior of sucking on nearby items or fingers.

Looking for Personality

Don’t be tempted to choose a kitten based on looks alone. Look for personality, too. Try to find a time when the kitten is active. Kittens are usually sleepy after eating. When watching kittens, note the following:

- Who is playful, confident, and friendly? A timid kitten might not be the best choice for a home with children who want to play with the kitten.
- If you get down on the floor, how do the kittens react to you? A well-socialized kitten should be comfortable with you and unafraid.
- Use something (other than your finger or hand) to entice the kittens to play. They should express an interest.
- After playtime, try to hold the kitten. He or she shouldn’t hiss, bite, or scratch you. A little squirming is normal.
- Learn as much as possible about the kitten’s history. Where and how a kitten is raised can greatly affect his or her temperament and behavior throughout life. For example, a kitten that has not been socialized to people by 7 weeks of age may have trouble bonding with them.

The Physical
Before you adopt a kitten, you and your veterinarian should check the kitten’s physical well-being. Many kittens have fleas, ear mites, and intestinal worms, so these problems shouldn’t be a reason to reject a kitten. However, you should ask yourself whether you can afford a kitten’s veterinary care. Be sure that you check the following:

**Skin and haircoat**—Healthy kittens have soft fur with no bald spots. The skin shouldn’t have scabs or rashes. Little black specks in the fur and on the skin may be flea dirt (excrement). This may be a sign of a flea infestation, which can be treated.

**Body**—The kitten shouldn’t feel fat or skinny. If you can feel the ribs, that’s okay. However, the ribs shouldn’t be visible. If the belly is hard or swollen, the kitten might have worms.

**Eyes**—The eyes should be free of discharge. The kitten shouldn't be squinting, and the eyes shouldn’t be red. The third eyelid (a protective membrane that is normally folded into the inner corner of the eye) should not be prominent.

**Ears**—The ears should look clean inside. Head shaking, scratching, and/or the presence of gritty brown or black debris may be a sign of ear mites, which can be treated.

**Nose**—The kitten should not be sneezing or coughing frequently and should not have a runny nose. This could indicate a respiratory infection that is treatable but is contagious to other kittens and cats.

**Mouth**—The teeth should be white. The gums should be pink but not red or pale. Ask what the kitten eats and whether his or her appetite is good. A kitten that is ready for adoption should be eating solid food. At first, try to feed the same food the kitten has been used to eating; a sudden diet change can cause stomach problems.

**Rear end**—The kitten’s anus and surrounding area should be clean—no signs of discharge or diarrhea.

**Overall energy level**—Be wary if the kitten is constantly sleeping and does not seem playful or active. This could be a sign of illness.

Any new kitten or cat being introduced into the home should be examined by a veterinarian as soon as possible and separated from all other household pets for a quarantine period of at least a few weeks. During that time, the new kitten should be tested for parasites and infectious diseases such as feline leukemia virus—especially if this testing was not performed before you obtained the pet. New cats or kittens should be observed closely for any signs of illness. Any problems should be reported to your veterinarian before introducing the new kitten to your other pets.

**Two May Be Better Than One**

Adopting two kittens at the same time is often recommended so that they can continue to learn from each other and keep each other company. In addition, in terms of feline behavior, it’s much
easier to start with two kittens than to adopt a second cat later. Adult cats are territorial, so introducing another cat can be difficult.

It can be tempting to adopt more than one or two kittens from a litter, so be careful not to agree to take home more kittens than you have time for and can afford.

Special-Needs Kittens

Not everyone is looking for a perfectly healthy kitten. People who have decided to adopt special-needs cats know that they can become very special companions. However, these cats may require a lot of care (which can be expensive) and may not live as long as healthy cats. Before deciding to adopt a special-needs kitten, ask your veterinarian what you can expect in terms of the care required and the kitten’s prognosis.
Serum Biochemistry Profile

- A serum biochemistry profile is a blood test that provides an overview of many of the body’s functions.
- Performing a serum biochemistry profile poses minimal risk for your pet, and in many cases, the information your veterinarian gains from this testing is very valuable.
- Your veterinarian may recommend that your pet not receive any food for 8 to 12 hours before blood is drawn for a serum biochemistry profile. Also, tell your veterinarian about any medications or nutritional supplements your pet may be receiving, as some products can alter the results of this test.

What Is a Serum Biochemistry Profile?

Blood testing is commonly used to help diagnose illness in animals. It can also help determine the state of your pet’s health during regular wellness visits, and it is commonly performed before sedation or anesthesia to help determine if a pet is healthy enough to undergo the procedure.

Your veterinarian may recommend a variety of blood tests to help assess your pet’s health. A serum biochemistry profile is a blood test that provides a good overview of many of the body’s functions. As with any other diagnostic test, results of a biochemistry profile do not tell the whole story of your pet’s health. These results are interpreted in combination with physical exam findings, medical history, and other information to assess your pet’s health status and determine if additional testing should be recommended.

Depending on which diagnostic laboratory is used, a serum biochemistry profile can be called different things, including “Superchem” and “Vetscreen,” and the profile may differ in the tests it includes.

How Is a Serum Biochemistry Profile Performed?

To perform a serum biochemistry profile, your veterinary team must obtain a small blood sample from your pet. This procedure is usually very quick; it may take only a few seconds if the patient is well behaved. For patients that are very frightened or not well behaved, your veterinary team may want to use a muzzle, towel, or other method of gentle restraint. In some cases, such as in patients with very thick fur, it may be necessary to shave the hair from the area where blood will be drawn. The hair will grow back, and this is often a good way to find the vein quickly.

Some veterinary offices have in-house blood analysis equipment, so they can perform a serum biochemistry profile in the office and have results the same day. Other offices send blood samples to an outside laboratory for the test to be performed. If an outside laboratory is used, results are generally available within 1 to 2 days.

Because a recent meal changes the blood and may affect the results of a serum biochemistry profile, your veterinarian may recommend that your pet not receive any food for 8 to 12 hours before blood is drawn for this test. In most cases, water can still be offered. Please let your veterinarian know if this temporary fast will be a problem for you or your pet.
Also, be sure to tell your veterinarian about any medications or nutritional supplements your pet may be receiving, as some products can alter the results of a serum biochemistry profile.

**What Does a Serum Biochemistry Profile Tell Your Veterinarian?**

The serum biochemistry profile measures a variety of chemicals and enzymes (proteins that are involved in the body’s chemical reactions) in the blood to provide very general information about the status of organ (especially the liver, kidneys, and pancreas) health and function. The biochemistry profile also shows the patient’s blood sugar level and the quantities of important electrolytes (molecules like sodium, calcium, and potassium) in the blood. Any of the following values may be included in a serum biochemistry profile:

- Serum biochemistry values that help provide information about the liver include the ALKP (alkaline phosphatase), ALT (alanine aminotransferase), AST (aspartate aminotransferase), and TBIL (total bilirubin).
- Serum biochemistry values that help evaluate the kidneys include the BUN (blood urea nitrogen) and CREAT (creatinine).
- AMYL (amylase) and LIP (lipase) are enzymes produced by the pancreas.
- Electrolytes are checked for quantity and for proportion to other electrolytes. They include Ca (calcium), Cl (chloride), K (potassium), Na (sodium), and PHOS (phosphorus). Electrolyte abnormalities can be associated with many types of health issues.

**What Is a Serum Biochemistry Profile Used For?**

A serum biochemistry profile is an important component of wellness blood work. Your veterinarian may recommend wellness blood work during your pet’s regular exams. Even if your pet is young and healthy, performing this testing periodically can help establish “normal” values for your pet. The next time blood work is performed, your veterinarian can compare the new results with previous results to see if anything has changed. Depending on your pet’s age and health history, additional tests (such as thyroid testing or urinalysis) may also be recommended as part of wellness testing. For seniors or chronically ill pets, your veterinarian may recommend blood work more frequently.

A serum biochemistry profile can help screen for many medical conditions, including diabetes and kidney disease. In many cases, early diagnosis and management can improve quality of life and long-term outcomes for pets with chronic illnesses.

When a pet presents with clinical signs indicating an illness, a serum biochemistry profile may be performed very early during the diagnostic process. Even if results of this initial testing are all “normal,” this information can rule out a variety of medical conditions. If your pet has abnormal or inconclusive biochemistry profile results, your veterinarian will combine that information with other vital information about your pet to decide if further diagnostic testing is recommended. Additional tests may include a urinalysis, radiographs (x-rays), or additional blood testing. Depending on your pet’s overall condition, your veterinarian may recommend medications or other management.
A serum biochemistry profile can also be part of routine blood work that is performed before a pet undergoes sedation or general anesthesia for a surgical procedure. If test results are abnormal, your veterinarian may recommend additional precautions to help ensure your pet’s safety during the procedure. Your veterinarian may also recommend postponing the procedure or choosing an alternative treatment option.

**Are There Risks Associated with Performing a Serum Biochemistry Profile?**

Very few risks are associated with performing a serum biochemistry profile. Drawing blood takes only a few seconds, and your veterinary team will take precautions to ensure that your pet is not injured during this procedure. Once blood is obtained, all further processing is performed at the veterinarian’s office or at a diagnostic laboratory, so there is no risk of harm to your pet.

Performing a serum biochemistry profile poses minimal risk for your pet, and in many cases the information your veterinarian gains from this testing is very valuable.
Skin Problems and Your Pet

- A variety of skin problems can affect dogs and cats, including allergies, bacterial and fungal infections, and parasite infestations.
- The signs of skin problems in pets can be very similar, so it is important to have your veterinarian examine your pet to determine the cause of the problem.
- Most skin problems in pets are curable or manageable. If your pet seems itchy or has skin that doesn’t look healthy, contact your veterinarian.

A wide variety of skin and coat conditions can cause your pet to itch and scratch, but pinpointing the problem can sometimes be difficult because many skin disorders have similar outward signs. Below are four major categories of skin conditions seen in cats and dogs.

**Allergic Skin Diseases**

Allergic skin disease develops when your pet’s immune system overreacts to certain substances (allergens), causing clinical signs that affect the skin. Your pet may come into contact with these allergens in several ways:

- **Breathing.** When allergens are inhaled, the associated skin disease is called *atopy* or *atopic skin disease*. Inhaled allergens can be molds, dust, plant pollens, or a variety of other agents.
- **Touch.** Sometimes, your pet can be allergic to things that make contact with the skin, such as grass or natural or artificial fibers. Pets that are allergic to components of flea saliva can develop *flea allergic dermatitis* if they are bitten by fleas.
- **Eating.** Some cases of allergic skin disease in pets are triggered by an allergy to something in the pet’s food.

Allergic skin disease causes itching, and pets that scratch excessively can damage their skin. Sometimes, frequent chewing, scratching, and biting can cause secondary skin infections, wounds, scabs, hair loss, and other problems.

Diagnosing allergic skin disease can be challenging because different types of allergies can have the same clinical signs, and allergic skin disease can look like many other types of skin problems. Your veterinarian will try to rule out other types of skin irritation before making a diagnosis of allergic skin disease.

Ideally, treatment of allergic skin disease involves reducing or eliminating your pet’s exposure to the allergens that are causing the problem. For example, if a pet has a food allergy, a special diet may be prescribed. If your pet is allergic to fleas, safe and effective flea control is essential to controlling the problem. For pets that are allergic to inhaled allergens, limiting their exposure (to grass or house dust, for example) is helpful, but medications are often necessary. In some cases, allergy testing may be recommended. If the exact allergens can be identified, a serum can be developed that, when administered to the pet in injections, reduces the pet’s sensitivity to the allergens over time.
Sometimes, the cause of an allergic skin problem can’t be determined right away. Fortunately, your veterinarian can frequently use medication to treat the itching without finding out exactly what the pet is allergic to. Although this is not a “cure,” the pet can be made more comfortable until a more permanent solution is possible. In general, the best remedy is to avoid whatever it is that sparks the allergic reaction.

**Bacterial Skin Infections**

All people (and pets) have bacteria on their skin. In most cases, these bacteria don’t cause a problem. However, when the skin is damaged (such as through scratching due to a skin allergy), a secondary bacterial infection can develop.

Bacterial skin infections, called *pyoderma*, are not contagious to people or other pets. However, the skin problems they cause, including pustules, open wounds, and infections that damage the hair follicles (leading to hair loss), can become a serious medical issue for affected pets.

Bacterial skin infections are usually diagnosed based on the patient’s medical history and the location and appearance of the affected area. Your veterinarian may also perform blood tests, skin tests, or bacterial culture testing to determine the exact origin of the problem. Many bacterial skin infections have an underlying cause, such as a parasite infestation, hormonal or immune system disorder, or allergy. If the underlying cause is not treated appropriately, the skin infection will likely return. In addition to treatment for the underlying cause, your veterinarian may recommend antibiotics, which can be administered in many forms, including pills, injections, shampoos, gels, ointments, and sprays.

**Fungal Skin Infections**

*Malassezia*. The most common fungal organism that causes skin problems in pets is a yeast called *Malassezia*. This infection generally occurs secondary to another skin problem, such as allergic skin disease or a bacterial skin infection. Fortunately, *Malassezia* is treatable through a variety of methods (including shampoos, gels/ointments, and pills). The key to resolving the problem for good is to successfully manage the underlying condition.

*Ringworm*. When most people hear *ringworm*, they may think of a parasite, but ringworm is actually a relatively common fungal skin infection. Ringworm causes crusty skin lesions and hair loss. It can occur anywhere on the body but commonly affects the head and legs. Sometimes the area of hair loss is circular, but not always. Diagnosis is best made via a fungal culture. For this test, your veterinarian will pluck a few hairs from an affected area and place the sample in a special solution to see if the ringworm organism will grow. Ringworm is treatable, usually through medicated baths, ointments/gels, or pills. Complete eradication of the infection can take a month or longer.

Ringworm can be quite contagious to people and other pets. Therefore, children and other household pets should be kept away from an infected pet during the treatment period. People who come into contact with the affected pet should wash their hands regularly.
Parasitic Skin Diseases

A number of parasites can infest dogs and cats. They can cause itching, which may lead to self-mutilation from excessive scratching and biting and other trauma to the skin. Fleas are one of the biggest culprits. Pet that are allergic to fleas may scratch excessively, causing redness, wounds, pustules, scabs, and hair loss in the affected areas. Even pets that aren’t allergic to fleas still experience itching and general misery from these parasites. Other small parasites, such as ticks, chiggers, lice, and biting flies, can also bother pets. For most of these parasites, your veterinarian can recommend a product to control them and protect your pet from their effects.

Mites that can affect dogs and cats include ear mites (which are contagious among pets and cause severe itching and ear infections); sarcoptic mites, which burrow under the skin, causing intense itching and skin lesions (known as scabies or red mange), and are contagious to people in the household; and Demodex mites, which are more common in dogs than in cats and are associated with itching, hair loss, and skin problems.

Most parasitic skin diseases can be diagnosed through direct visualization of the parasite (such as fleas), or by examining small samples of skin or debris under a microscope to diagnose the problem (such as ear or Demodex mites). All of these parasitic conditions are treatable, so if your pet is itching, or you notice any bald areas or skin wounds, contact your veterinarian.

Help Is Available

The skin problems listed here are the most common ones that affect dogs and cats, but there are many others, including immune-mediated skin disease, cancer involving the skin, and endocrine (hormonal) problems that affect the skin.

Most skin conditions can be cured or at least (as with some allergies) managed. No matter the cause of your pet’s skin problem, it is possible to ease his or her suffering. When you do, it will be a relief for both of you.
Spaying or Neutering Your Pet

- Spaying and neutering are surgical procedures to remove reproductive organs.
- These procedures are typically recommended for puppies and kittens before they reach sexual maturity (at about 5 months old).
- Spaying or neutering your pet prevents him or her from having unwanted offspring. It also has very important health and behavior benefits for your pet.
- General anesthesia is required.
- Spaying is a more involved procedure than neutering.

What Is It?

Spaying and neutering are surgical procedures used to remove the reproductive organs of dogs and cats. Spaying is the removal of the uterus and ovaries of a female dog or cat. Neutering is the removal of a male dog’s or cat’s testicles. These procedures are also sometimes referred to as “sterilizing” or “fixing” pets.

How It Works

Both of these procedures are performed by a veterinarian while the pet is under anesthesia. Spaying is generally a more involved procedure than neutering because the reproductive organs being removed are internal.

Although all surgical procedures carry some risks, spaying and neutering are the most common surgeries performed in dogs and cats, and most pets handle the surgery very well. Be sure to follow instructions regarding withholding food and water before surgery. Your pet will need to stay at the hospital anywhere from a few hours to a few days, depending on his or her age, size, sex, and condition. Also be careful to follow all recommendations for home care or aftercare, such as pain medications and appointments for suture removal.

Pets can be spayed or neutered when they are as young as 8 weeks of age, and many animal shelters follow this policy before releasing pets for adoption. Otherwise, the procedure is typically recommended for dogs and cats before they reach sexual maturity (at about 5 months old).

Benefits of Spaying and Neutering

One of the best reasons to spay or neuter your pet is to avoid adding to the problem of pet overpopulation. Every day in the United States, thousands more puppies and kittens are born than are human babies. The result is that there are not enough homes for all of these pets. The Humane Society of the United States (HSUS) estimates that between 6 and 8 million pets enter animal shelters each year. Of these pets, the HSUS believes that at least half—3 to 4 million—are euthanized, or “put to sleep.” Many of these animals are young and healthy.

Spaying and neutering also have immediate benefits for you and your pet:
• Your pet will be much less likely to get a number of serious health problems that can be life-threatening and expensive to treat, such as uterine, mammary (breast), or testicular cancer.

• Spayed and neutered pets are less likely to try to escape and roam. Roaming pets are far more likely to get into fights with other animals or to experience traumatic injuries, such as being hit by a car.

• Neutering male cats makes them less likely to mark their territory (your home) by spraying urine.

• Spaying female pets prevents them from coming into heat—that is, actively seeking a mate. Pets in heat may vocalize more and may leave bloodstains on carpets or furniture. A female dog or cat in heat may also attract unwanted male canine or feline visitors to your property.

• Spayed or neutered pets are generally more even tempered and less likely to show aggression with other animals or people.

**Common Concerns About Spaying and Neutering**

**Will my pet gain weight?**

You can help keep your pet from gaining unnecessary weight by not overfeeding or overindulging him or her with treats and by making sure he or she gets plenty of exercise. Regular walks (for dogs) or playtimes (for cats) can help keep your friend fit.

**Isn’t it expensive?**

Spaying or neutering is a one-time investment in the health of your pet. This procedure is relatively inexpensive in light of the veterinary training and medications required for it. Compare the expense of this procedure to the expense of caring for a pregnant and nursing mother, raising a litter of puppies or kittens (including the necessary vaccinations and deworming medications), and feeding puppies or kittens until they are old enough to be placed in homes. Also consider that spayed and neutered pets are less likely to roam, suffer accidents, or develop certain serious diseases.

**Shouldn’t my female pet have at least one litter?**

Spaying female dogs and cats before they go into heat even once further reduces the chance of certain medical conditions that affect the reproductive organs. Preventing pregnancy also eliminates the possibility of your pet having complications from pregnancy and delivery. It is also very time-consuming and expensive to raise healthy offspring, and it can be very difficult to find homes for the new arrivals. Your female dog or cat will not “miss” being a mother, and if you have children, you can help teach them the “miracle of life” through other methods, such as books and videos. If fewer puppies and kittens are born, more will find homes and avoid euthanasia.
Summer Hazards and Your Cat

- When temperatures outside reach dangerous levels, the temperature inside the house can, too. Keep fresh water available, and make sure your cat has a cool place to spend the day.
- Bring your cat indoors if a heat advisory is issued, or if severe weather (heavy rain, high winds, flooding) is expected.
- Keep vaccines up to date, have your cat spayed or neutered, and continue parasite control throughout the summer.
- Regardless of whether your cat spends time outdoors, exposure to dangerously high temperatures, environmental hazards, and physical dangers is possible. Knowing what to look for is the first step toward protecting your cat from potential summer hazards.

What Should I Know About Warmer Temperatures and Heatstroke?

Cats that don’t go outside are protected from many warm weather hazards, but only if the temperature inside the home remains within a healthy range. In an effort to reduce energy usage and costs, some pet owners shut off fans and air conditioning when they leave the house in the morning and turn them on when they return later in the day. However, when temperatures outside reach dangerous levels, temperatures inside the house can, too. Being shut inside a hot house can be dangerous for your cat. Like dogs, cats can rely on panting to cool themselves off. When the temperature in the environment increases, panting becomes less effective. This means that your cat could be locked inside with minimal options for cooling down.

Instead of turning off the air conditioner, try leaving it on a conservative but comfortable setting (perhaps 76°F) while you are out. Make sure your cat has plenty of fresh water, and consider closing curtains to reduce the heating effects of sunlight through the windows. If there are parts of the house that are likely to be cooler, make sure your cat has access to those areas.

Cats that go outside need even more protection from hot weather. Access to clean drinking water is essential, as well as making sure cool, shaded areas are available if your cat wants to get out of the sun. Remember, however, that fleas also tend to like cool, shaded, moist areas, so be sure to use a safe and effective flea control product on your cat. Cats should not be left outside for long periods of time in the summer and should always have the option of coming inside. It’s important to be aware of the risk of heatstroke so you can keep your cat safe and healthy.

Cats tend not to develop heatstroke as commonly as dogs do, perhaps because cats tend not to exercise with humans and spend less time in the car. However, even a few minutes in a car (even with the windows cracked) on a hot day can be deadly for a cat. Research has shown that on a partly cloudy, 93°F day, a car can heat up to 120°F in just 15 minutes. Even cooler days can be deadly. A similar test conducted on a 71°F day determined that the temperature inside a car parked in the sun with the windows cracked open went up to 116°F in 1 hour.

Even cats that are used to being outside can suffer during hot weather. Remember that young, elderly, or sick cats are more likely to become dehydrated or otherwise ill as a result of heat exposure. If a severe heat advisory is issued in your area and humans are advised to stay indoors, it is a good idea to bring your cat indoors, too. If your cat cannot be brought indoors, a ventilated
or air-conditioned garage or mud room can provide enough shelter in some cases. Cats should also be brought inside if severe weather is expected, as heavy rain, flooding, and high winds can be hazardous, especially for cats that are hiding under cars or in other low-lying areas.

**Why Are Strange Animals and Other Cats Hazardous?**

Cats that are allowed to roam outside are more likely to have encounters with other cats and wild animals during the summer months. Such encounters increase the risk of bite wounds, scratches, and other injuries related to fighting. Infectious diseases such as rabies and feline AIDS can be transmitted through bite wounds. Additionally, female cats’ fertility cycles are linked to the length of time they are exposed to daylight. Female cats tend to start going into heat in the spring, and they may go into and out of heat repeatedly for several months. Unwanted pregnancies and litters of kittens increase dramatically in the summer, which contributes to pet overpopulation, the spread of infectious diseases, and other issues.

Protect your cat from these hazards by having him or her spayed or neutered and keeping vaccines up-to-date. Keeping cats indoors not only protects them from a variety of animal encounters, it also prevents them from being injured or killed by cars.

**What Toxic Chemicals Might My Pet Be Exposed To?**

Lawn chemicals and fertilizers, insect repellants and sprays, weed control products, antifreeze, slug bait, ant bait, rat poison, and pool chemicals are just a few toxic chemicals your cat may encounter in your home or on your property. Learn more about dangerous chemicals at the ASPCA (American Society for the Prevention of Cruelty to Animals) Animal Poison Control Center: [http://www.aspca.org/pet-care/poison-control/](http://www.aspca.org/pet-care/poison-control/).

**How Can I Prevent Bee Stings and Related Hazards?**

Bee stings, spider bites, and other related injuries are common in cats. Keeping your cat indoors reduces the risk of these things, but it is a good idea to check around your home (inside and out) for beehives, wasp nests, and other hazards your family and pets may encounter. Don’t forget to also check garages and storage sheds.

**How Can I Prevent Fleas, Ticks, and Other Parasites?**

Fleas, ticks, and intestinal parasites (like roundworms and hookworms) are year-round hazards for your cat. However, increased exposure to the outdoors and certain parasite life stages during the warmer months makes these predators more of a concern during the summer. Be sure to keep your cat up-to-date on fecal parasite testing, and make sure you continue flea, tick, and parasite prevention during the summer months. If your cat receives heartworm preventive medication, continue this during the summer (heartworm disease is carried by mosquitoes, which are mostly active from the spring through the fall). If you are using a flea and tick control product for your cat, be sure you purchase the correct product and that you are using it properly. **Never use a dog product on a cat.** Ask your veterinarian about the best ways to protect your cat from fleas, ticks, heartworms, and intestinal parasites.
What Should I Know About Toxic Plants?

Your cat may encounter toxic houseplants (such as elephant ear and dieffenbachia) at any time of the year, but plants that flower in warm weather, like daisies, dahlias, lilies, and chrysanthemums, are also toxic and create additional hazards for cats that go outside. Information about poisonous houseplants and outdoor plants and flowers is available at the ASPCA Animal Poison Control Center: http://www.aspca.org/pet-care/poison-control/.
Tail Docking

- Tail docking, also known by the term *caudectomy*, is the surgical removal of a portion of the tail.
- Surgical caudectomy can be performed for medical reasons, such as to ensure complete tumor removal or to alleviate excessive skin folds around the base of the tail.
- In most cases, tail docking is a cosmetic procedure without apparent medical benefit; it therefore remains controversial.

**What Is Tail Docking?**

Tail docking, also known by the term *caudectomy*, is the surgical removal of a portion of the tail.

**Why Is Tail Docking Performed?**

When caudectomy is performed for medical reasons, it is not referred to by the term *tail docking*. If a dog (or cat) breaks his or her tail in such a way that adequate healing is unlikely, it may be medically advantageous for the pet if part of the tail is removed. Similarly, if a pet sustains a serious wound or infection on the tail, caudectomy can have medical benefits for the pet. Caudectomy is also sometimes performed to ensure adequate removal of tumors on the tail, or to help alleviate skin infection under the tail caused by excessive skin folds.

When caudectomy is not performed for medical reasons, it is referred to as *tail docking*. According to the American Veterinary Medical Association (AVMA), tail docking is a cosmetic procedure. It is performed to alter a dog’s physical appearance in compliance with certain breed standards, but has no proven medical benefit for the pet. Tail docking, therefore, remains a controversial procedure.

Traditionally, owners of certain working and hunting dogs (such as German short-haired pointers) had their dogs’ tails docked because it was thought to reduce the chances of trauma or injury to the tail while the dog performed his or her duties. It was also thought that tail docking would help prevent a long tail from becoming soiled while the dog was working. However, limited scientific evidence exists to support these assertions.

**How Is Tail Docking Performed?**

The amount of tail removed during a tail docking depends on the standard for the particular dog breed. In general, the remaining tail segment is between ¼ inch long (for a Norwich terrier, for example) and 1 ¼ inches long (for a giant schnauzer). Surgical separation of the bones in the tail can be performed using a scalpel. The small incision can then be stitched closed using suture material. Laser surgery or electrosurgery are also options. However, in some cases a constricting band is used.

In most cases, tail docking is performed when puppies are between 3 and 5 days old. Local anesthesia (with or without sedation) can be used to numb the area before surgery, but the procedure is sometimes performed without it. If the surgery is not performed before the dog is 5
days old, it should be postponed until the dog is 8 to 12 weeks of age. General anesthesia is recommended if surgery is performed at that time.

If medical caudectomy is performed in an adult dog, general anesthesia is used. The amount of tail that is removed depends on the medical issue that is being treated.

**What At-Home Care Is Needed Following Tail Docking?**

Because tail docking is usually performed when puppies are only a few days old, before they are sold or adopted, pet owners rarely have to provide any care.

If tail docking is performed when a puppy is older (between 8 and 12 weeks old), there may still be a suture present at the time of purchase or adoption. If so, the puppy should be prevented from licking the area until it has healed completely. Similarly, littermates or the dam may try to lick the area, which should be prevented. If any swelling, discharge, or discoloration of the area is observed, notify your veterinarian immediately.

For older pets that have undergone caudectomy for a medical reason, there will likely be sutures present, or the area may be bandaged to keep it clean. If sutures are present, they should be checked regularly for bleeding, swelling, or discharge. If a bandage is present, it should be checked frequently for moisture, slippage, or soiling. If the pet tries to lick the area, an Elizabethan collar may be necessary. This is a cone-shaped collar that fits over the pet’s head and limits access to the rear of the body. Your veterinarian can fit your pet with the proper-sized collar if necessary.
Tapeworms

- Tapeworms are long, flat, parasitic worms that live in the intestines of dogs and cats.
- Pets generally become infected by ingesting fleas that contain tapeworm larvae during grooming.
- Pets may also become infected by eating prey that is infected with tapeworm larvae.
- Most tapeworm infections do not cause illness in pets.
- People can get tapeworm infections by accidentally ingesting an infected flea or, in rare cases, by consuming tapeworm eggs.
- The infection is generally diagnosed by finding tapeworm segments around the pet’s anus, in the pet’s bedding, or in the pet’s feces.
- There are several medications that are effective at eliminating tapeworm infections.
- Flea control is important to help prevent the pet from becoming reinfected.

What Are Tapeworms?

Tapeworms are long, flat, parasitic worms that live in the intestines of dogs and cats. Several species of tapeworms can infect pets. Most have a head that attaches to the intestinal wall and a series of segments, called proglottids, that make up the worm’s body. An adult tapeworm can reach 6 inches or more in length and has the appearance of a white piece of tape or ribbon.

How Do Pets Become Infected With Tapeworms?

Tapeworm segments detach from the end of the adult tapeworm and are shed in the pet’s feces. Each segment contains numerous tapeworm eggs. Once in the environment, the segments break open, releasing the eggs, which eventually develop into tapeworm larvae.

The most common tapeworm found in dogs and cats is associated with fleas. Developing flea larvae in the environment eat the tapeworm larvae, and pets become infected when they ingest an infected flea during grooming.

Pets can become infected with another type of tapeworm when they hunt and eat prey, such as a bird, rodent, or reptile, that has eaten the tapeworm larvae.

What Are the Signs of a Tapeworm Infection?

Dogs and cats generally don’t become sick from a tapeworm infection. But rarely, a large infestation may cause weight loss or an intestinal blockage.

Owners may become aware that their pet has tapeworms by finding tapeworm segments stuck to the fur around the pet’s anus, in the pet’s bedding, or in the pet’s feces. When fresh, these segments are white or cream-colored, can move, and have the appearance of grains of rice. As they dry, they look more like sesame seeds. Occasionally, pets may experience irritation or itchiness around the anus from passing the tapeworm segments.

Can People Get Tapeworms From Their Pets?
Human infections are rare and usually occur when people inadvertently consume an infected flea. Most cases involve children, and tapeworm segments may be found around the anus or in bowel movements. The tapeworm infection can be eliminated with an effective antiparasite medication.

In isolated cases, people may become infected by accidentally eating some types of tapeworm eggs. The ingested tapeworm larvae form cysts, which may require drainage, surgical removal, or medication.

**How Are Tapeworm Infections Diagnosed?**

Tapeworm eggs may be difficult to detect on a routine veterinary fecal exam. In most cases, the eggs are contained within the tapeworm segments, and unless the segments have broken open, they may not appear on a fecal exam.

Infections are usually diagnosed by finding tapeworm segments around the pet’s anus or in the pet’s feces.

**How Is an Infection Treated?**

Several medications are effective at eliminating tapeworm infections. At the same time, it is important to treat and control any flea infestation on the pet or in the environment. As long as the pet is exposed to fleas, he or she is likely to become reinfected with tapeworms.

**How Can I Protect my Pet From Tapeworm Infections?**

Monthly flea prevention is an important way to help prevent your pet from becoming infected. You should also discourage pets from hunting and eating prey by keeping cats indoors and dogs on a leash when outside.
The Wellness Examination

- A wellness exam is an overall general health assessment that may include blood tests, urinalysis, and parasite screening.
- A wellness exam is recommended for most pets at least annually.
- Some veterinarians recommend wellness exams at least every 6 months for senior pets and pets with chronic health issues.
- A wellness exam can help ensure your pet's health and detect early stages of disease.

What Is a Wellness Examination?

A wellness examination is a complete physical examination along with diagnostic testing that may include bloodwork, urinalysis, and checking a stool sample for parasites. In many cases, a wellness examination can help detect the early stages of disease. Often, your veterinarian will schedule this exam when your pet is due for vaccinations.

What Does a Wellness Exam Include?

Wellness programs vary depending on the species, age, and health needs of the patient. Your veterinarian may ask you to fill out a preliminary checklist along with a complete medical history of your pet. The checklist will ask about any issues that your pet may have. For example, if you noticed that your pet is losing weight, your veterinarian may perform special tests to help rule out specific diseases that can cause weight loss. Make sure to fill out the forms thoroughly and bring a list of questions that you may have about your pet’s health. This is the perfect time to ask these questions.

Most wellness exams include a complete physical examination, which is a nose-to-tail inspection for any abnormalities. Your veterinarian will use special equipment, including a stethoscope to listen to the heart and lungs, an otoscope to view the inside of the ears, and an ophthalmoscope to examine the eyes. Your veterinarian will also feel all over your pet’s body for lumps and bumps. In addition, your veterinarian will check your pet’s vital signs (temperature, pulse, and respiration) and record your pet’s current weight.

Many veterinarians perform testing on samples of blood, urine, and stool during a wellness exam. The blood test may include a complete blood cell count (CBC) and a chemistry panel. These tests can help determine if your pet has problems such as anemia, infection, or organ disease. Other tests, such as a thyroid evaluation, may be helpful, depending on the physical examination results and patient history.

Parasite tests are usually performed during wellness examinations. Your veterinarian may request that you bring in a sample of your pet’s stool for analysis. A fresh stool sample can be tested using special procedures to identify parasites. However, not all parasites are detected through stool samples. Your veterinarian may recommend testing your pet for heartworm disease. This type of parasite test involves taking a blood sample. Some veterinarians perform heartworm testing and fecal testing on site, but others send these tests to an outside laboratory for analysis.
Your veterinarian may also recommend checking your pet's urine by performing a urinalysis. This helps determine whether your pet's kidneys are working correctly and may also help diagnose certain conditions, such as diabetes and urinary tract infection. A urinalysis also involves testing the urine for the presence of bacteria, blood, and sediment as well as evidence of infection, any of which may mean that there is a problem.

Depending on your pet’s age, current medical condition, and medical history, your veterinarian may recommend additional tests as part of your pet’s wellness examination.

**What Is a Wellness Exam Used For?**

A wellness examination is an important part of preventive health care for pets in all stages of life, from puppies and kittens to senior pets. If your pet seems to be young and healthy, a wellness examination is a good way to detect changes such as weight gain or loss, dental disease, or other subtle changes that may not be evident at home.

For any pet, especially senior pets, a wellness examination is a good way to detect early onset of disease. Early diagnosis and treatment of diseases, such as diabetes and heart disease, can greatly improve the overall health and well-being of your pet.
Thrombocytopenia (decreased platelet count)

- Thrombocytopenia is a life-threatening condition leading to uncontrollable bleeding and severe anemia.
- It is a decrease in the number of platelets, which are necessary to form clots.
- Various diseases may lead to thrombocytopenia.
- Immediate medical attention is necessary for survival.
- The success of treatment depends on the primary disease and response to treatment.

What Is Thrombocytopenia?

*Thrombocytopenia* is the term used when a patient does not have enough platelets in the blood. Platelets (also called thrombocytes) are cell fragments that are necessary for forming blood clots and that help in repairing damaged blood vessels. Platelets are formed in the bone marrow. Their numbers can be low if not enough are being made or if too many are being used or destroyed by the body. Causes of thrombocytopenia include blood loss, immune system disorders, clotting disorders, cancer, and infectious diseases such as Rocky Mountain spotted fever and feline leukemia virus.

Adequate numbers of platelets are essential to survival. Platelets are needed to repair obvious injuries, such as open wounds, as well as microscopic injuries that occur in day-to-day life. If platelet numbers are too low, uncontrolled bleeding can occur, and if treatment is unsuccessful, the patient will die from overwhelming blood loss.

Signs of Thrombocytopenia

- Small bloody spots seen on the skin or gums
- Bleeding from the nose
- Blood in vomit, stool, or urine
- Excessive bleeding from a wound
- Pale gums
- Lethargy, weakness

Diagnosis

Thrombocytopenia is diagnosed based on history, clinical signs, physical examination findings, and laboratory tests. A platelet count is included in a complete blood count (CBC), which will allow your veterinarian to determine the severity of the thrombocytopenia. Other tests may be performed to determine what is causing the low platelet numbers. These may include a blood chemistry panel, urinalysis, radiography (x-rays), ultrasound, tests for immune diseases, tests for infectious disease, and taking a bone marrow sample.

Treatment

Thrombocytopenia needs to be treated as soon as it is recognized. Many of the illnesses that cause thrombocytopenia are not obvious right away. Your veterinarian may choose to start
treatment for the most common causes before knowing the exact one. Initial treatments may include blood or plasma transfusions, steroids, and antibiotics. As the diagnosis becomes clear, your veterinarian may customize treatment. Some patients may need to be medicated for months to years until their platelet numbers stabilize. Follow-up care for these patients consists of frequent physical examinations and platelet counts. Medications may be slowly discontinued after platelet numbers have been in the normal range for some time; however, relapses occur in about 50% of cases. Some pets don’t respond to treatment.

Prevention

There is no known way to prevent thrombocytopenia. However, the use of the feline leukemia vaccine and a solid tick prevention strategy may help in the prevention of infectious diseases that cause thrombocytopenia. It may be possible to minimize relapses by avoiding the original cause
Thyroid Level Test/Thyroid Profile Tests/Feline Hyperthyroidism

- Feline hyperthyroidism is a disorder caused by the production of too much thyroid hormone by one of both of the thyroid glands.
- Diagnosis of feline hyperthyroidism is made by evaluation of clinical signs, physical examination, and one or more thyroid level blood tests.
- A baseline thyroid level test is a blood test that measures the amount of T₄ (thyroid hormone) in the blood.
- Thyroid profile tests measure a broader array of hormones to provide a more accurate assessment of thyroid function than the baseline thyroid level test.
- Feline hyperthyroidism is treated with administration of a daily oral pill, radiation therapy to destroy the thyroid tissue, or surgical removal of thyroid tissue.

What Is Feline Hyperthyroidism?

Feline hyperthyroidism is the most common glandular disorder of cats older than 8 years. The disorder is usually caused by a benign tumor in one or both of the thyroid glands, which are located on either side of the neck. These tumors cause the thyroid glands to over-produce thyroid hormones. In rare cases (1% to 2%), the tumors may be cancerous.

Thyroid hormones are important for regulating metabolism. When a cat has abnormally high levels of circulating thyroid hormones, the cat’s metabolic rate increases, leading to secondary problems associated with increased blood pressure. High blood pressure can damage other organs, such as the heart, kidneys, liver, and eyes.

What Are the Signs of Feline Hyperthyroidism?

Cats with hyperthyroidism may show any or all of the following signs:

- Weight loss
- Increased appetite
- Vomiting
- Diarrhea
- Increased drinking and urination
- Unkempt haircoat
- Hyperactivity

Diagnosis of feline hyperthyroidism begins with a medical history and physical examination. In some cases, the veterinarian may be able to feel enlarged thyroid glands on either side of the cat’s neck. If hyperthyroidism is suspected, the veterinarian will recommend blood tests to confirm the diagnosis.

What Is a Baseline Thyroid Level Test?
A baseline thyroid level test is a simple blood test to determine the level of thyroid hormone (T₄) in the blood. It is a good screening test for cats that have signs associated with hyperthyroidism. A high total T₄ level confirms the diagnosis of hyperthyroidism.

**What Is a Thyroid Profile Test?**

Occasionally, cats with signs of hyperthyroidism may have normal or borderline results on the baseline thyroid level test. It’s possible for other illnesses to lower the T₄ level. In this case, your veterinarian may recommend a thyroid profile test.

This blood test usually measures a variety of hormones, including T₃ (another thyroid hormone), TSH (thyroid stimulating hormone), and free T₄ (the amount of T₄ that is not bound to protein in the blood). The free T₄ level is not influenced as readily by other illnesses and generally remains high in cats that are hyperthyroid. Compared with the baseline thyroid level test, the profile may provide a more accurate assessment of thyroid function. Because this test is more expensive, veterinarians sometimes start with the simple thyroid level test.

Your veterinarian may also suggest a T₃ suppression test. With this test, a baseline blood sample is taken, then the cat is administered a T₃ pill over the course of 3 days, followed by another blood test. The result may help diagnose cases of borderline hyperthyroidism.

**How Is Hyperthyroidism Treated?**

There are a number of options for treating hyperthyroidism.

A common medical treatment for hyperthyroid cats is administration of an oral pill called *methimazole*. The pill must be given daily—usually twice a day—for the life of the cat. Periodic testing of the baseline T₄ level is recommended, as dosage adjustments are sometimes required for continued management of the condition. Most cats tolerate methimazole very well, but side effects may include vomiting and facial itching.

A second and more permanent solution is treatment with radioactive iodine. When radioactive iodine is administered, it destroys the cat’s thyroid tissue. While the procedure is relatively safe, the cat must remain at a special facility during treatment, which may require 7 days or more of hospitalization. Treatment with radioactive iodine usually cures the thyroid condition, so no pills are needed.

Another treatment option is surgical removal of the thyroid glands. If all of the abnormal tissue is removed, this treatment can cure hyperthyroidism. However, there may be anesthesia risks with older cats, and the surgery may result in complications.

**What Are the Benefits of Thyroid Testing?**

Untreated hyperthyroidism can lead to heart failure, sudden blindness from high blood pressure, chronic vomiting and diarrhea, and death. Thyroid testing can help diagnose feline
hyperthyroidism so that proper treatment can be initiated and the effects of the disease may be mitigated.
Ticks and Your Cat

- Ticks can transmit dangerous diseases, like cytauxzoonosis, when they attach to a cat and feed.
- Your veterinarian can recommend safe and effective products to help protect your cat from ticks.
- You should never remove a tick with your fingers. Tweezers or tick removal tools work well. When in doubt, ask your veterinary care team for assistance removing a tick.

What Are Ticks?

Ticks are small, eight-legged parasites that must drink blood in order to survive and reproduce. Ticks don’t fly, and they can’t jump (unlike fleas). In fact, ticks are more closely related to spiders and mites than to “insects” like fleas. Of the hundreds of tick species, approximately 80 are found in the United States. Ticks can feed on a variety of hosts, including cats, birds, dogs, and people.

Why Are Ticks a Problem for Cats?

It may be tempting to dismiss the importance of ticks on cats, because cats are less likely to be diagnosed with Lyme disease and some of the other diseases that ticks transmit to people and dogs. However, there are still reasons to be concerned about your cat coming into contact with ticks.

If a cat is heavily infested with ticks, the parasites can drink enough blood to cause anemia (severe blood loss). Additionally, if your cat brings ticks into the house, your family members could be exposed to Lyme disease and other diseases that ticks can transmit if they bite people.

Ticks can transmit a disease called cytauxzoonosis (pronounced sight-oh-zo-uh-nosis) to cats. This disease causes serious illness and even death in infected cats. Cytauxzoonosis is actually caused by two parasites. The first parasite, an infected tick, bites a cat and transmits the second parasite, a single-celled parasite called Cytauxzoon felis, to the cat. Once infected with Cytauxzoon felis, the cat may develop severe clinical signs, including:

- High fever
- Lethargy (tiredness)
- Appetite loss

The infection progresses very quickly (over a period of days) and many infected cats die from this disease.

Less commonly, cats can also contract tularemia from tick bites. Signs of this disease include:

- Loss of appetite
- Oral ulcers
- Fever
Humans can become infected with tularemia if they are bitten or scratched by a cat with the disease.

There is a popular myth that cats groom themselves so frequently and thoroughly that they remove all of their ticks. However, ticks can attach to the face, ears, and other areas that are difficult for cats to groom. This means that even a cat that grooms meticulously can still have a problem with ticks.

**How Do Cats Get Ticks?**

Despite a very popular myth, ticks don’t fall or jump out of trees onto a host. However, ticks can climb, and they tend to attach themselves to shrubs and blades of tall grass. They can also live in dens of rodents and other small mammals. One species of tick can even live indoors.

When a host walks by and brushes against the grass or shrub where the tick is waiting, the tick climbs onto the host. Once on a new host, the tick eventually finds a location to attach and feed.

Cats that roam or hunt rodents and small mammals are likely to be exposed to ticks, especially if they have access to wooded areas. However, even indoor cats can be exposed to ticks if dogs or humans bring ticks into the house.

**How Can I Protect My Cat From Ticks?**

Keeping your cat indoors can reduce the risk of exposure to ticks. If you have other pets that go outside and can bring ticks into the house, use an effective form of tick control and check them daily for ticks. If your cat must go outside, limiting exposure to wooded areas, tall grass, and other tick habitats is a good idea. However, this can be difficult if the cat roams freely and has access to these areas.

Safe and effective tick-control products can be used on cats to help protect them from ticks. There are many options, so ask your veterinarian about the best choice for your cat.

Remember that ticks are successful parasites that can be difficult to kill. Even if you are using an effective tick control product, you should still check your cat daily for ticks and remove any as soon as you find them. You should never remove a tick with your fingers. Tweezers work well, but be sure to grasp the tick close to the head and pull gently to avoid leaving the mouthparts imbedded in the skin. There are also tick removal tools that are very easy to use. Avoid using lighter fluid, matches, or other products that may irritate the skin or cause other injuries to your cat. When in doubt, ask your veterinary care team for assistance removing the tick.
Traveling With Your Cat

- Bring enough of your cat’s regular food and medication for the duration of the trip.
- If you plan to travel with your pet, let your veterinarian know ahead of time; your cat may need a health certificate, or there may be other health issues to address.

How Can I Make the Travel Experience Better for My Cat?

Our pets share so much of our lives that many of us don’t want to consider traveling without them. Whether you are flying, driving a car, or RVing, sharing a trip with a pet can add richness to the experience. Proper planning can make the travel experience better and less stressful for you and for your pet.

What Food and Medications Should I Bring When Traveling With My Cat?

There are many factors you can’t control when you are on the road, but changing your cat’s food can cause vomiting, diarrhea, or other problems that can be difficult to deal with while traveling. Some cats may even refuse to eat a different food; if this refusal goes on for a few days, it can quickly turn into a problem. You can help avoid this problem by bringing enough of your cat’s regular food for the duration of the trip. If your cat receives medication, bring enough for the trip and try to maintain your regular schedule.

If you are traveling by car or RV, set up a large cage or crate with your cat’s litterbox, food, and water; bringing your cat’s favorite bed, blanket, or toys can also help make the trip more relaxing and pleasant. If you are flying, you will need an airline-approved carrier for your cat; you should also request that your cat fly in a temperature-controlled cargo area.

Many people escape the snow by traveling with their pet to warmer climates. Although fleas and ticks may not be a problem during the winter where you live, your cat may be exposed to these parasites at your destination. Make sure you’re prepared by asking your veterinarian for appropriate flea and tick control products.

How Should I Plan for Travel With My Cat?

Spontaneity and family emergencies aside, most of us wouldn’t take a trip without planning some things ahead of time. The same thing applies when traveling with your cat:

**Where to stay:** Many hotels and rental properties allow pets. Locating proper accommodations ahead of time and being clear about fees (some places charge an extra fee for pets) can help minimize anxiety when you arrive.

**Travel requirements:** Most airlines require a health certificate for pets that will be flying. The health certificate generally states that the pet is in good health and free from any infectious or contagious diseases. Don’t assume this document can be obtained from your veterinarian on the way to the airport! Your cat may need a physical examination, fecal exam, or other procedures before your veterinarian can sign a health certificate. Also, the certificate must be obtained
within a certain window of time before you travel. Find out from your airline what their requirements are and plan to get the health certificate ahead of time.

Some destinations (particularly island locations like England and Hawaii) may have quarantine regulations or rabies certification procedures. Clarify any of these requirements well in advance of your trip.

**Medical care:** Do you have a plan in case your cat gets sick while you are traveling? If possible, find a veterinarian at your destination; your own veterinarian may be able to make some recommendations. This is particularly important if your cat has an existing medical problem or is on medication.

Should I Sedate My Cat for Travel?

Giving a tranquilizer to a cat before traveling has pros and cons. Some would argue that if your cat is tranquilized, then he or she is not sharing the travel experience with you—so what is the point of bringing your pet along? Sedation can also have side effects, including lowering body temperature (which could be an issue if your pet is flying in the cargo area of a plane), and causing hypotension (low blood pressure). Others may argue that a little light sedation can calm a cat that is overly stressed or excited while traveling and can therefore make the trip more pleasant for everyone involved. There is no one-size-fits-all answer to this question. Some cats do very well with a light sedative, but remember that sedation does not address all travel issues. If your cat has severe motion sickness or gets extremely stressed while traveling, it may be better to arrange for a pet sitter or board him or her. Also, not every cat is a good candidate for a tranquilizer, so ask your veterinarian if sedation is a good idea for your cat.

If you have never given your cat a tranquilizer before, give a test dose ahead of your trip. Pick a day when you will be home with your pet for most of the day. That way, if the medication causes excessive sedation or other negative side effects, you will be there to intervene and call your veterinarian for help.

What Else Should I Know About Travelling With My Cat?

If you plan to travel with your pet, let your veterinarian know ahead of time. He or she may be able to advise you about parasite protection and other health considerations that may be different at your destination. If you decide to leave your cat at home, your veterinarian can likely recommend a good boarding facility or pet sitting service. Addressing any questions or concerns with your veterinarian ahead of time can save worry and stress while you are away.
Treating Heartworm Disease

- Heartworm disease is a serious and potentially fatal condition that damages the heart, lungs, and related blood vessels.
- Dogs and cats are at risk for becoming infected with heartworms.
- Heartworm disease in dogs is treatable, but in some cases, treatment can be costly and complicated. There are no approved products for heartworm treatment in cats.
- Heartworm disease is easily and effectively avoided through administration of preventive medications.

Why Treat Heartworm Disease?

Heartworm disease is a serious and potentially fatal condition that affects dogs, cats, and up to 30 other species of mammals. It is caused by parasitic worms living in the major vessels of the lungs and, occasionally, in the heart. The scientific name for the heartworm is *Dirofilaria immitis*.

Although heartworm disease is virtually 100% preventable, many dogs and cats are diagnosed with it each year. Heartworm disease has been diagnosed in all 50 states. Because heartworms are transmitted (as microscopic larvae) through the bite of an infected mosquito, heartworm disease can occur anywhere there are mosquitoes. Even indoor cats are not safe from heartworm infection, as studies have shown that more than 25% of heartworm-infected cats live indoors.

The American Heartworm Society (AHS) estimates that 1 million dogs in the United States are infected with the disease, and the incidence may be rising. Wherever dogs are infected, studies have shown that cats are likely to be infected, too.

Signs of Heartworm Disease

Initial signs of heartworm disease in dogs and cats can be subtle. When infected, both species may develop a chronic cough. In cats, the signs may mimic feline asthma. Some cats have also reportedly died suddenly without showing any prior clinical signs. Affected dogs may have lethargy (tiredness) and exercise intolerance (refusal to exercise or difficulty exercising). Many infected dogs and cats don’t show clinical signs, so testing may be the only way to identify pets with heartworm disease.

Treatment

**Dogs**

If infection is detected early enough, canine heartworm disease can be treated before permanent damage is done to the heart, lungs, and blood vessels. However, if the infection has been present for a long time or consists of a large number of heartworms, the risk of complications can increase. In these cases, treatment can be more expensive and complicated, and dogs may need many months to recover from the infection as juvenile and adult worms are cleared from their systems. Hospitalization may be required.
The goal of treating heartworm disease in dogs is to remove all stages of the parasite (including adults, larvae, and an immature stage known as *microfilariae*) and improve the pet's condition without causing treatment complications. First, your veterinarian will conduct a series of diagnostic tests to determine which stages of heartworms are present. During this time, your veterinarian will also perform tests to reveal how much damage (if any) has already been done to your dog’s heart, lungs, and blood vessels as a result of being infected. After administering treatment for heartworm disease, your veterinarian will likely recommend follow-up testing to ensure that the infection has resolved. Some dogs may need to be treated more than once to clear the infection.

If significant damage to a dog’s heart, lungs, and vessels has already occurred, permanent health issues may remain, even after the heartworm infection is successfully treated.

Dogs exhibiting severe clinical signs may first need to be stabilized with steroids and other medications before administration of medication to kill heartworms. Additional medications may also play a helpful role in supporting dogs whose heart and lungs have sustained permanent damage from heartworm disease.

During treatment, unnecessary stress on an infected dog’s cardiopulmonary system (heart and lungs) should be avoided as the adult worms die. Depending on your dog’s condition, your veterinarian may recommend hospitalization. When your dog comes home, exercise restriction will likely be recommended for a period of time to avoid overly stressing the cardiopulmonary system. Your veterinarian can discuss additional recommendations for monitoring and caring for your dog during and after treatment of heartworm disease.

**Cats**

In cats, there is no approved medical treatment for heartworm disease. Your veterinarian can discuss with you how best to monitor your cat and manage the signs of disease. Antibiotics, steroids, and other medications are sometimes recommended. For cats with severe breathing problems or other complications, hospitalization may be needed. In some cases, surgical removal of adult worms may be attempted. However, this surgery is costly and has some risks.

**Prevention**

The best “treatment” for dogs and particularly cats is prevention. Safe, easy-to-administer, effective medications are available to prevent heartworm disease in dogs and cats. Ask your veterinarian which medication is best for you and your pet. The American Heartworm Society ([www.heartwormsociety.org](http://www.heartwormsociety.org)) recommends year-round administration of heartworm preventive medications. Some heartworm preventive products have the added benefit of controlling other internal parasites of concern, such as roundworms and hookworms in dogs and cats as well as whipworms in dogs. Some products also target other external parasites, such as ticks and mites.
Trimming Your Cat's Nails

- Nail trimming should be a calm, stress-free experience for you and your cat.
- If your cat experiences pain from nail trimming, you will probably have trouble trimming his or her nails in the future, so make sure that you clip just the tip of each nail.
- Contact your veterinarian if you are unsure of how to cut your cat’s nails or if you experience difficulties.

Nail trimming should be calm and stress-free for you and your cat. Teaching your cat to accept having his or her feet touched can help make nail trimming easier. Ideally, cats should be introduced to nail trimming when they are kittens. Most cats require nail trimming every 10 days to 2 weeks. Contact your veterinarian if you are unsure of how to cut your cat’s nails or if you experience difficulties.

The Setup

Collect your clippers and something to control bleeding in case it occurs (see below for suggestions and more on bleeding). You can use scissors-type, guillotine-type, or even human nail clippers. Find a chair in a quiet room where your cat can sit comfortably on your lap while facing away from you. You may want to place a folded towel or blanket on your lap in case your cat’s nails are very sharp and he or she tries to jump down before you’ve completed the nail trim. Choose a time when your cat is relaxed or even sleepy, such as after a meal or a period of activity. Ensure that other pets aren’t around and that your cat won’t be distracted by activity outside nearby windows.

The Technique

To trim your cat’s nails, put your thumb on top of a paw and your fingers underneath it for support. Gently press your thumb and fingers toward each other to extend the nails. Clip only the very tip of the nail (no more than 1/16 of an inch). Clip from top to bottom, not side to side. If your cat has light-colored nails, you might be able to see a pink area (called the quick) on the part of the nail closer to the paw. This is where the blood vessels and nerves are, and accidentally cutting it causes pain and bleeding. If your cat experiences discomfort or pain during nail trimming, you will probably have trouble trimming his or her nails in the future, so make sure that you keep the experience as pleasant as possible and clip just the tip of each nail.

If you accidentally cause the nail to bleed, apply styptic powder to the tip of the nail. If you don’t have styptic powder, gently dab the tip of the nail on a bar of soap or in a little flour or cornstarch.

If your cat struggles, talk to him or her calmly. If this doesn’t help, take a break and try trimming some nails later. Never punish your cat for not cooperating, but be sure to reward good behavior with praise or a treat.
Ultrasonography

- Ultrasonography is a diagnostic technique that allows your veterinarian to look inside your pet’s body without surgery.
- Ultrasonography uses reflected sound waves to create images of organs or spaces inside your pet’s body.
- Ultrasonography is painless and noninvasive. In many situations, it can be conducted while the pet is awake.

What Is Ultrasonography?

Ultrasonography is a type of diagnostic technique known as an imaging study. This means that when a doctor performs ultrasonography (sometimes called an ultrasound study) he or she can see pictures, or “images,” of parts of the patient’s body. Other examples of imaging studies include x-rays (radiography) and MRI (magnetic resonance imaging).

Ultrasonography uses high-frequency sound waves—ultrasound—to create a picture of what is inside your pet’s body. It is a noninvasive, painless way to diagnose and evaluate many common diseases. Ultrasonography is a very good method for evaluating fluid-filled structures (like the bladder) as well as organs like the liver, spleen, kidneys, and heart.

How Does It Work?

Ultrasonography requires a special machine that can create ultrasound waves. This machine is connected to a small probe that your veterinarian can hold against your pet’s skin. The probe sends out painless ultrasound waves that bounce off of structures (e.g., organs) in your pet’s body and return to a sensor inside the ultrasound machine. The ultrasound equipment collects these reflected “echoes” and uses them to generate images that are viewable on a screen.

In ultrasound images, dense areas (e.g., bone) appear whiter or brighter because they reflect more sound waves back to the sensor; less dense areas, such as fluid, reflect fewer sound waves and appear darker. The term “echogenicity” refers to how reflective an object is—that is, how many echoes it sends back. The denser the object, the higher its echogenicity.

What Is It Used For?

Ultrasound waves can generate excellent images of abdominal organs, such as the following:

- Liver
- Spleen
- Gallbladder
- Adrenal glands
- Pancreas
- Kidneys and urinary tract
- Parts of the stomach and intestine
- Reproductive organs
Ultrasonography can also detect the presence of fluid, such as blood or urine. Ultrasound waves cannot penetrate bone, so ultrasonography cannot be used to see objects hidden behind bones, such as the brain.

Because ultrasonography creates images that the doctor sees right away, it can be used to evaluate the heart as it beats for the motion of heart valves and chambers, blood flow through the heart, and contractions of the heart muscle. It can also be used to assess the heart for defects.

Ultrasonography is useful for assessing fetal health and monitoring pregnancy in breeding animals.

Ultrasonography can also play a role in diagnosing and “staging” cancer. Tumors and masses can be located, counted, and measured using ultrasonography, which can be valuable when a veterinarian is looking for evidence of cancer spread. In the same way, ultrasonography can help in monitoring a patient’s response to cancer therapy.

**The Ultrasonography Examination**

In most cases, ultrasound examinations are conducted while the pet is awake. Tranquilizers and anesthesia are generally not required, and food and water restrictions are usually not necessary. The haircoat will be clipped over the area to be scanned. This allows the ultrasound probe to be placed directly against the skin without interference from body hair. A nonirritating gel will be placed on the pet’s skin before the examination. This gel provides lubrication, allowing the probe to slide over the skin. It also prevents any air from getting between the probe and the tissue being scanned; this improves the quality of the ultrasound image. The ultrasound examination is noninvasive and painless and typically takes less than 40 minutes to complete. Ultrasonography is a minimally invasive diagnostic option.
Understanding Pet Food Labels

- Understanding pet food labels is the first step in choosing the right food to help make an optimal nutritional plan for a pet.
- Animals require specific nutrients from the ingredients in their foods.
- The new regulation to include calorie information on pet food labels might help decrease the number of overweight pets.

Pet owners can be passionate about choosing the best food for their pets, but with thousands of pet food products on the market, how do pet owners make the best choice? Pet food labels are a good place to start. Understanding the label information can help pet owners make informed decisions about the food they feed their pets.

Which Part of the Label Helps Assess Quality?

The following key components of a pet food label help evaluate nutritional information:

- A nutritional adequacy statement from the Association of American Feed Control Officials (AAFCO; a nongovernment advisory organization with representative officials from every US state)
- A list of ingredients (in descending order by weight)
- A guaranteed analysis

The AAFCO nutritional adequacy statement declares whether the product or treat is complete and balanced and whether it should be fed under veterinary supervision. The following types of nutritional adequacy statements can appear on a pet food label:

- Animal feeding trials using AAFCO procedures substantiate that the product provides complete and balanced nutrition for all life stages or a particular stage.
- The product is formulated to meet the nutrient levels established by AAFCO for a particular life stage or for all life stages.
- The product is intended for intermittent or supplemental use only.

The presence of either of the first two statements indicates that a food can be used as the sole source of nutrition. “Complete and balanced” indicates that a food has all the recognized, required nutrients in the proper proportions, when fed appropriately.

In a feeding trial, a product is fed to a specific number of dogs or cats for a minimum of 6 months to determine whether it provides adequate nutrition. By conducting feeding trials, pet food companies ensure that animals in a particular life stage (i.e., gestation, lactation, growth, adult maintenance) will obtain proper nutrition from a food. Feeding trials also provide some assurance of palatability and the availability of nutrients.

When a food is formulated by calculation or chemical analysis, the nutrients may meet the maximum or minimum levels established by AAFCO, but because the finished product is not fed to animals, availability and palatability are not assessed.
The nutritional adequacy statement regarding intermittent or supplemental feeding applies to treats or to veterinary diets that require a veterinarian to monitor the pet.

What Should I Know About the Ingredients?

The following are important to know about pet food ingredients:

- Each ingredient, including additives, must be listed in the ingredients statement.
- Ingredients are listed in descending order by weight. However, this does not reveal the amounts of the ingredients. For example, wheat germ meal, wheat bran, and wheat flour are all components of wheat, but they may provide different nutrients. The ingredient list is valuable when a patient has a confirmed allergy and must avoid a certain allergen.
- AAFCO defines what ingredients can or cannot be called. For example, according to AAFCO, corn gluten is the part of the commercial, shelled corn after removal of the larger portion of the corn’s starch and germ.

What Do the Percentages on the Label Mean?

AAFCO regulations require pet food manufacturers in the United States to include a guaranteed analysis that lists percentages of certain nutrients on pet food labels. These percentages (i.e., minimum protein and fat; maximum fiber and water) are listed on an as-fed basis. “As fed” simply means the percentage of each nutrient, including water or moisture, contained in the final product the pet consumes. To compare products on a level “playing field,” pet owners should always use the dry matter (without moisture) equivalent listed on pet food labels. If a dry matter basis is not used, canned food appears to have a lower concentration of nutrients than dry food because the latter contains approximately 10% water and canned food contains approximately 75% water.

What Are the “Chemicals” in the Ingredients?

Pet owners may be concerned to see “phylloquinone,” “α-tocopherol,” “cobalamin,” and “ascorbic acid” listed on their pets’ food until they learn that these are the technical names for vitamins K₁, E, B₁₂, and C, respectively. α-Tocopherol is also an antioxidant. Antioxidants are added to foods to balance the nutrient profile and preserve fats; therefore, preservatives are not universally bad for pets and prevent foods from becoming rancid.

What Are the By-products on the Label?

Many pet owner questions about pet food result from misunderstandings about particular ingredients. Pet owners may incorrectly think that by-products are only the undesirable parts of animals, such as hooves, feathers, and beaks. However, by definition in the pet food industry, meat by-products are clean parts other than meat, such as lungs, kidneys, and spleens. By-products are an excellent source of amino acids, protein, vitamins, and minerals. For example, poultry by-products contain 70% protein on an as-fed basis and are highly digestible.
Who Ensures the Quality of Pet Foods?

Several governing agencies have a role in regulating pet food. The Food and Drug Administration (FDA) has authority over pet foods. The FDA establishes certain labeling regulations for animal food and enforces regulations about contamination. Feed control officials from the US Department of Agriculture (USDA) work with the FDA to inspect facilities and enforce regulations within each US state. AAFCO defines ingredients and has an agreement to work with FDA scientists to ensure the safety of ingredients. Owners can voluntarily submit reports using the FDA Safety Reporting Portal: www.safetyreporting.hhs.gov.

Are Organic or Natural Ingredients Better?

As more pet foods are manufactured to meet the demand for “organic” and “natural” ingredients, pet owners need to understand these terms. AAFCO has defined “natural” as originating from animals or plants. AAFCO has no regulatory definition for “organic,” which refers to the procedure by which organic ingredients are grown, harvested, and processed. There is no evidence that organic food is more beneficial to animals than nonorganic food. Pet foods that meet the human standard for organic (at least 95% of the content by weight, excluding salt and water, must be organic) may display the USDA organic seal on their packaging. The FDA uses “natural” to describe food and “organic” to describe food and the way in which it was processed.

Are the Feeding Guidelines Right for My Pet?

Complete and balanced pet foods must include feeding directions on their labels. However, one set of feeding guidelines cannot account for the great variation in metabolic rates and nutritional needs among individuals. In addition, breed, temperament, environment, and many other factors can influence food intake. Feeding guidelines provide a good starting point for clients but may overestimate the needs of some pets, leading to weight gain. Therefore, pet owners (with guidance from a veterinary professional) may have to adjust the feeding guidelines on a case-by-case basis to achieve a healthy, lean body condition in pets.

Why is My Pet Gaining Weight on New Food?

The size of a “cup” is commonly misunderstood. The feeding guidelines on pet food labels refer to a standard 8-oz measuring cup, so if a pet owner is using a 12-ounce coffee mug or other larger “cup,” it is easy to accidentally overfeed a pet. Also, the amount of calories fed to a pet can vary greatly depending on the brand of food. When pet owners change their pet’s food, they are often unaware that there can be a large discrepancy in the amount of calories in different foods.

Why Aren’t Calories Listed on the Label?

Calorie content is not on most pet food labels, but that may be changing in the future. The format of pet food labels was derived from large animal feed packaging, which does not legally require the inclusion of calorie content. AAFCO recently voted to mandate the inclusion of calorie content on pet food labels.
Conclusion

If read correctly, pet food labels can provide important information for optimizing pet nutrition. Clients should educate themselves about the myths and misconceptions regarding pet foods and their labels. Clients with questions about a pet food or its label should contact their veterinary hospital or the pet food manufacturer.

For more information on pet food labels, visit the FDA’s Web site at: http://www.fda.gov/animalveterinary/resourcesforyou/ucm047113.htm.
Urinalysis and Early Kidney Disease Detection

- In kidney disease, the kidneys do not function properly.
- Acute (sudden) kidney disease may be reversible, but chronic (long-term) kidney disease is usually progressive, meaning that it worsens over time.
- Kidney disease can be detected early with the help of a urinalysis.
- A urinalysis is an examination of a dog’s or cat’s urine to assess the health of the urinary tract, including the kidneys, and organs such as the liver and the pancreas.
- Ideally, the urine sample should be obtained by a relatively painless procedure called a cystocentesis, in which a needle is placed directly into the urinary bladder.
- To evaluate kidney function, the urinalysis should be interpreted with the results of a blood test called a chemistry panel.
- Your veterinarian may recommend a urinalysis if your pet is showing signs such as increased drinking, increased urination, and urinary accidents.
- A urinalysis may also be part of a routine screening examination, especially in older pets.

What Is Kidney Disease?

Kidney disease is a broad term meaning that the kidneys are not functioning properly. Acute kidney disease occurs quickly, often over the course of a few days, and is caused by a lack of oxygen to the kidneys or exposure to toxins such as antifreeze, pesticides, and some medications. If treated promptly, acute kidney disease may be reversible. Chronic kidney disease occurs over the course of months to years and is usually progressive, meaning that it worsens over time. Early detection and treatment of chronic renal disease can slow the progression of the disease and help keep your pet more comfortable.

What Are the Signs of Kidney Disease?

Pets with kidney disease may display any or all of the following signs:

- Increased drinking
- Increased urination
- Anorexia and weight loss
- Vomiting
- Lethargy
- Constipation or diarrhea

How Can Kidney Disease Be Detected Early?

When the kidneys begin to fail, they lose their ability to concentrate urine. Urine that was once deep yellow in color becomes dilute (more clear in appearance). While the difference in concentration isn’t always obvious to the naked eye, it can be detected by a urinalysis. However, you may notice that your pet is drinking more water, urinating more frequently, and urinating in inappropriate places.

What Is a Urinalysis?
As the name implies, a urinalysis is the analysis of a pet’s urine. While a urinalysis is generally performed to evaluate the health of the urinary tract, including the kidneys, it can also provide information about the state of organs such as the liver and the pancreas.

**How Is a Urinalysis Performed?**

Ideally, a urine sample should be obtained by cystocentesis—a relatively painless procedure in which a needle is placed through the abdominal wall directly into the urinary bladder. A urine sample obtained in this manner is not contaminated by bacteria in the lower urinary tract.

Urine samples can also be retrieved by placing a catheter (rubber tube) up the urinary tract into the bladder, but this procedure often requires anesthesia and may be difficult to perform on female pets. Samples obtained by “free catch” into a cup while the pet urinates or taken off the floor or exam table are usually contaminated with bacteria but may be sufficient for evaluating kidney function.

During a urinalysis, the technician will first evaluate the urine color and clarity or cloudiness. The urine is then assessed for specific gravity, which measures the ability of the kidneys to concentrate urine. Insufficient ability to concentrate urine is noted by an abnormal specific gravity and is often one of the first signs of early kidney disease.

The urine is then applied to a treated dipstick that changes color to identify the pH (acidity or alkalinity) of the urine and the presence of several substances, such as protein, glucose, red blood cells, and white blood cells. For example, the presence of glucose in the urine often indicates diabetes. Protein in the urine may be a sign of kidney damage.

Finally, the urine is centrifuged to separate the solids from the liquid, and the sediment is examined under a microscope for crystals, red blood cells or white blood cells, bacteria, and other abnormal substances.

**What Other Tests May Be Done to Detect Kidney Disease?**

A urinalysis should be evaluated with the results of a chemistry panel blood test. In early kidney disease, a low specific gravity may be the only abnormality identified. When the kidneys lose the ability to concentrate urine, the pet begins to urinate larger amounts. To make up for this loss of fluid, the pet drinks more than usual.

As kidney disease progresses, the concentrations of blood urea nitrogen (BUN) and creatinine rise in the blood. These two waste products are normally removed from the blood by the kidneys. When the kidneys aren’t functioning efficiently, the waste products increase in the blood and can be identified by the chemistry panel. A diagnosis of kidney failure can be made by confirming a loss of urine-concentrating ability combined with increased BUN and creatinine blood levels.

Your veterinarian may recommend a radiograph (x-ray) to examine the size and shape of the kidneys. The kidneys may also be visualized by ultrasound.
What Are the Benefits of Kidney Function Testing?

Kidney function testing can identify acute kidney disease so that proper treatment may potentially reverse the condition. While early detection of chronic kidney failure can’t stop the progression of the disease, treatment can help slow the process and help make your pet more comfortable. For example, a low-protein diet has been shown to help slow kidney disease progression.
Urinary Tract Disease in Cats

- Urinary tract disease is a very general term used to describe any one of several conditions that can affect any part of the urinary tract.
- Clinical signs associated with urinary tract disease vary depending on the exact condition.
- Some types of urinary tract disease can be reversed with treatment, while other conditions, such as chronic kidney failure, are irreversible. In the latter case, treatment may help slow the progression of the disease.

What Is Urinary Tract Disease?

The urinary tract consists of four parts:

1. Two kidneys, which produce urine
2. The ureters, tubes that transport urine from the kidneys to the bladder
3. The urinary bladder, where urine is stored
4. The urethra, which carries urine from the bladder to the outside

Any part of the urinary tract can be affected by disease. Here are just a few of the conditions that can affect the urinary tract in cats:

Kidney failure: Acute kidney failure is the sudden loss of kidney function, which may be caused by a number of factors, including decreased blood pressure, toxins such as antifreeze and lilies, and ureteral or urethral obstructions. If diagnosed early and treated aggressively, acute renal failure may be reversible. Chronic kidney failure is long-term loss of kidney function that cannot be reversed, but treatment may help slow the progression of the disease.

Kidney and bladder stones: Cats can form mineral crystals and stones in any part of the urinary tract. These crystals and stones can irritate the lining of the urinary tract or block the flow of urine, which is a medical emergency.

Idiopathic cystitis: An inflammation of the urinary bladder without an obvious cause, such as a bacterial infection. Cats with this condition may appear to be in pain when they urinate and may have blood in their urine. Stress may play a role in the development of this type of cystitis.

Urinary tract infections: Bacteria can ascend through the urethra or travel through the blood and infect the urinary bladder and the kidneys.

In addition, kittens may be born with congenital defects affecting the urinary tract, and older cats may develop cancer in the urinary tract.

What Are the Clinical Signs of Urinary Tract Disease?

The signs vary depending on the specific type of disease, but they may include:

- Increased drinking
• Passing more or less urine
• More frequent urination
• Straining to urinate
• Inability to urinate (this is a medical emergency!)
• Bloody or foul-smelling urine
• Painful back (where the kidneys are located)
• Urinating outside the litterbox
• Vomiting (sometimes containing blood)
• Halitosis (bad breath)
• Lethargy (tiredness)
• Dehydration
• Anorexia (appetite loss)
• Weight loss

How Is Urinary Tract Disease Diagnosed?

Your veterinarian will begin by taking a medical history of your pet, including asking about possible exposure to toxins. He or she will also perform a thorough physical exam to look for clues to the potential urinary tract disorder.

Diagnostic tests usually include blood work, such as a chemistry panel and a complete blood count (CBC), as well as a urinalysis. Depending on the suspected disease, your veterinarian may also recommend more specific blood or urine tests, such as a bacterial culture and sensitivity test, which helps identify the specific bacteria that might be involved in a urinary tract infection and the most effective antibiotic to treat the infection. Other tests may include abdominal radiographs (x-rays), an abdominal ultrasound, or cystoscopy, which involves inserting a tiny tube with a camera up the urethra and into the urinary bladder to look for abnormalities in these areas.

How Is Urinary Tract Disease Treated?

Treatment of urinary tract disease depends on the underlying cause and the patient’s overall condition. For example, if a pet has bladder stones, a special diet or surgery may be recommended. Pets that are severely ill from kidney disease or kidney failure may need hospitalization and intensive care to recover. In other cases, antibiotics, fluids, and other medications given on an outpatient basis are effective. There are even special diets and dietary supplements that can help some pets with urinary tract disease.

Chronic kidney failure is a progressive, irreversible condition. Treatment generally focuses on slowing the progression of disease and improving quality of life for the patient. Pets can sometimes have a good quality of life for many years after being diagnosed with kidney failure. Your veterinarian will evaluate your pet and discuss the best methods of treatment with you.

Since many pets may not show outward signs of urinary tract disease, regular physical examinations and wellness screening tests can increase the chances of early diagnosis and more effective treatment.
Urine Culture Test

- A urine culture test is done to identify the specific bacteria that are causing a urinary tract infection.
- Ideally, a sample of urine is collected by cystocentesis in which a needle is inserted directly into the animal’s bladder.
- The urine sample is placed on a special medium and incubated to allow the bacteria to grow.
- After the bacteria are identified, another test (a sensitivity test) is performed to determine the most effective antibiotic to use against the bacteria involved.

Urinary tract infections are common in dogs and, to a lesser degree, in cats. Signs of a urinary tract infection include increased drinking, increased or more frequent urination, urinary accidents, bloody urine, or urinating small amounts at a time.

In most cases, a veterinary hospital may perform a urinalysis to help detect an infection. The test results may indicate the likelihood of an infection, but they do not identify the exact bacteria that may be causing the infection.

Pets may be treated empirically, meaning that the veterinarian chooses an antibiotic based on his or her experience regarding which bacteria are most likely to be involved. If the infection doesn’t resolve, a urine culture test is needed to identify the specific bacteria and determine the most appropriate antibiotic.

What Is a Urine Culture Test?

A urine culture test is a method of identifying the specific bacteria that may be causing a urinary tract infection. It involves placing a urine sample on a special medium, incubating the sample so the bacteria can grow, and then identifying the bacteria. A second test (a sensitivity test) is usually conducted to determine the most effective antibiotics to use against the bacteria involved.

How Is a Urine Culture Test Done?

Ideally, a urine sample should be collected by cystocentesis in which a needle is inserted directly into the animal’s bladder. This is a fairly fast procedure that can be done with very little pain to the pet, but a relatively full bladder is required.

The placement of a catheter (a narrow tube) into the bladder is another method that may be used to collect a urine sample. The drawbacks of this procedure are that it may introduce other bacteria into the bladder and may be uncomfortable for the pet.

Samples that are collected off the floor or in a cup are contaminated with bacteria from the environment or from the lower urinary tract and, therefore, are not the best samples for a culture test.
Once a sample is acquired, a small amount of urine is spread on a special medium, and the container is placed in an incubator. During the course of a few days, any bacteria that are present should grow and can be identified. A sensitivity test is then conducted to determine the most effective antibiotics for the organisms involved.

What Are the Benefits of a Urine Culture Test?

A urine culture test is the most accurate way to confirm a urinary tract infection; combining a urine culture test with a sensitivity test is the best method to select an antibiotic to help resolve the infection. After antibiotic therapy, urine culture tests are also recommended to ensure that the infection has been eliminated.

- Your veterinarian may recommend a urine culture test:
- When your pet initially shows signs of a urinary tract infection
- After treatment with antibiotics
- When empirical therapy does not eliminate clinical signs in your pet
- If your pet appears to have frequent recurrences of clinical signs

While empirical treatment may be successful, the presence of an unusual bacterium or multiple bacteria may result in failure to eliminate the infection, and your pet will continue to show signs of discomfort. A urine culture test is the best way to ensure that your pet will be back to normal as soon as possible.
Urine Specific Gravity Test

- The urine specific gravity (SG) test tells your veterinarian how concentrated your pet’s urine is (how much water it contains).
- Collecting a urine sample for SG measurement can be done at your veterinarian’s office or, sometimes, at home.
- If your pet’s urine SG is abnormal, additional tests may be recommended to determine the cause.

What Is a Urine Specific Gravity Test?

The kidneys have several important functions in the body, including eliminating waste products through the urine and regulating the body’s fluid balance. The urine specific gravity (SG) test tells your veterinarian how concentrated your pet’s urine is (how much water it contains). If the SG is too high, it can mean inadequate amounts of water are being eliminated through the urine. If the SG is too low, it can mean the body is losing too much water through the urine. There is a relatively wide range of normal readings for a urine SG test, but there are also several medical conditions that can affect the result.

Measuring the urine SG can help your veterinarian determine how well your pet’s kidneys are working. Urine that is too diluted may indicate that the kidneys can’t retain enough water to prevent dehydration. Often, urine SG is evaluated along with other urine and blood tests that screen for abnormalities involving the kidneys. Your veterinarian may recommend these tests if any type of kidney problem is suspected.

How Is the Urine Specific Gravity Measured?

To measure your pet’s urine SG, your veterinary team must obtain a small urine sample. For a dog, this may simply involve taking the dog for a short leash walk and collecting a sample as the pet urinates. You may even be able to do this at home. If so, be sure to collect the sample in a clean, dry container and bring it to your veterinarian as soon as possible. Ideally, urine should be tested right away (or at least the same day it is collected). If you can’t deliver the urine immediately, keep it refrigerated until you can take it to your veterinarian.

For cats, some veterinarians use a special type of plastic cat litter pellets and let the cat rest in a cage with some drinking water and a litterbox for a few hours. The plastic pellets are not absorbent, so once the cat urinates, the urine sample can be collected relatively easily. Some pet owners can also do this at home.

Most veterinarians perform the urine SG test in the office and have results the same day. To test the sample, one or two drops of urine are placed on the screen of a special hand-held instrument called a refractometer. This instrument allows your veterinarian to measure how concentrated your pet’s urine is.

What Does the Urine Specific Gravity Test Tell Your Veterinarian?
Several medical conditions can cause the urine SG to be abnormal:

- Dehydration
- Diabetes
- Adrenal gland disease
- Thyroid disease (in cats)
- Kidney disease

Although changes in the urine SG are commonly associated with illness, many other factors can affect the measurement. For example, if a healthy dog or cat drinks more water than usual (such as after exercise or on a hot day), the urine SG may be temporarily low (indicating diluted urine) because of increased water intake. Similarly, if a pet doesn’t drink water for several hours or has become dehydrated, the urine SG may be higher than normal, indicating urine that is too concentrated. In both examples, the pets are likely healthy, but their urine SG readings may not be within the normal range.

As with any other diagnostic test, the results of a urine SG test are combined with physical exam findings, medical history, and other information to assess your pet’s health status and determine if additional testing should be recommended. Additional tests may include a full urinalysis, radiographs (x-rays), an ultrasound examination, or blood testing.

**Are There Risks Associated With Measuring the Urine Specific Gravity?**

Very few risks are associated with measuring the urine SG. If your veterinarian simply collects a sample as your pet is urinating, there is no risk of harm to your pet. If another method of urine collection (such as using a urinary catheter or collecting the sample directly from the bladder using a syringe) is necessary, your veterinary staff will take precautions to ensure that your pet is not harmed.
Vaccine-Associated Sarcomas in Cats

- Vaccine-associated sarcomas are cancerous tumors that occur at vaccination sites in cats.
- Approximately 1 to 2 out of every 10,000 vaccinated cats develop this condition.
- Your cat should be seen by a veterinarian if you notice swelling at the vaccination site that grows larger after 1 month, is bigger than 2 cm (0.79 inches), or persists for more than 3 months.
- Diagnosis is made via a surgical biopsy (tissue sample).
- Treatment requires wide surgical excision (removal), often followed by radiation or chemotherapy.
- Because the risks of contracting a serious infectious disease are greater than the risks of developing a tumor, it’s generally recommended to keep cats current on vaccines.
- You should discuss the risks and benefits of vaccination with your veterinarian.

What Is a Vaccine-Associated Sarcoma?

Cats can develop cancerous tumors called fibrosarcomas, or sarcomas, at the locations where they have been vaccinated. These aggressive tumors can appear just months after vaccination, or many years after the fact.

While these tumors are very serious, they are not very common. It’s estimated that approximately 1 to 2 out of every 10,000 vaccinated cats develop this condition.

What Causes These Sarcomas?

Vaccines help protect cats from dangerous infectious viruses by stimulating an immune response (forming antibodies) against the virus. Vaccines generally contain very tiny amounts of the target virus, or protein particles derived from the virus. When this material is introduced into the body in a vaccine, the body’s immune system responds through a series of steps that include making antibodies and modifying other cells that will recognize the target organism later. These changes constitute an immune response. When the vaccinated individual encounters the “real” organism later, the body recognizes the organism and reacts to protect the vaccinated individual from becoming sick.

Live viruses can create an immune response, but they also have the potential to infect the animal. To prevent this, the viruses in vaccines are modified or killed to make the vaccines safer. In many cases, killed viruses cannot stimulate an immune response as effectively as modified or live viruses. A substance called an adjuvant is added to these vaccines to help the animal mount a more effective immune response over a longer period of time.

While no one is exactly sure what causes vaccine-associated sarcomas, it has been suggested that the adjuvant, combined with local inflammation, may be a contributing factor. Although these tumors have not been linked to a single brand of vaccines, they are more commonly associated with feline leukemia virus (FeLV) and rabies vaccines.

What Are the Signs of a Vaccine-Associated Sarcoma?
If your cat develops a swelling in the skin after a vaccination, don’t panic. Some vaccines can cause a mild reaction, which usually resolves in a few weeks. However, you should monitor the area and bring your cat to the veterinarian if the swelling:

- is growing in size 1 month after vaccination
- is greater than 2 cm (or 0.79 inches) in diameter
- persists longer than 3 months

Vaccine-associated sarcomas can be locally aggressive (meaning they can start just under the skin but quickly invade deeper structures, like muscle) and grow relatively fast. They can metastasize (spread) to other locations in the body, such as the lungs. Over time, the tumors can become large, unmovable, and ulcerated.

**How Are These Sarcomas Diagnosed?**

The best way to diagnose these tumors is by obtaining a surgical biopsy (tissue sample) and submitting it to a laboratory for analysis. At the same time, your veterinarian may recommend radiographs (x-rays) to determine if other areas of the body are affected.

**How Are Vaccine-Associated Sarcomas Treated?**

These tumors must be removed surgically, while your cat is under anesthesia. Before surgery, it may be necessary for your cat to undergo a computed tomography (CT) scan to help the surgeon determine how much tissue to remove. It is extremely important that the entire tumor is removed, or it may return in a more aggressive form.

Surgical removal is often followed with radiation therapy to eliminate any microscopic cancerous cells that may still be in the tissues. Some cats may require chemotherapy as well.

**Should I Stop Vaccinating My Cat?**

The chance of your cat contracting a serious disease is much higher than the chance of your cat developing a vaccine-associated sarcoma. So it’s generally recommended to keep vaccines current.

At the same time, veterinarians are taking every precaution to help reduce the risks associated with vaccines, including:

- **Eliminating unnecessary vaccines**: If your cat is indoor only and is never exposed to other cats, it may not be necessary for your cat to receive certain vaccines.
- **Reducing the number of vaccines given in a single location**: Multiple vaccines in one location may induce inflammation, so different vaccines are generally given in different areas of the body. There are standardized locations where each vaccine should be given that help veterinarians determine which vaccines are more likely to produce a problem.
- **Injecting vaccines in the limbs**: In the past, vaccines were commonly given between the shoulder blades. However, tumors that occur there are difficult to remove. If an
aggressive tumor develops in a limb, complete removal (which may include amputation of the leg) is more likely, which can save the life of a cat.

- **Extending the interval between vaccinations:** Some vaccines are available that last for up to 3 years, eliminating the need for annual vaccination.

It’s a good idea to discuss the risks and benefits of vaccination with your veterinarian to determine which vaccines are right for your cat.
Vaccine Titer Testing

- Vaccine titer tests measure the level of specific antibodies in a pet’s blood.
- Titer tests can help determine whether a puppy’s or kitten’s immune system has responded appropriately to an initial vaccine series.
- Some veterinarians use vaccine titer tests to help guide decisions regarding whether a pet should be revaccinated for certain diseases.

What Is Vaccine Titer Testing?

Vaccine titer testing is a way of measuring a pet’s immune system response when the pet is vaccinated against a specific disease. Titer tests detect antibodies, which are proteins produced by the body when the immune system detects a disease-causing organism (e.g., virus, bacteria) or another “foreign” substance, like a vaccine. Antibody-stimulating substances are called *antigens*. Titer test results tell your veterinarian not only whether your pet has antibodies to a specific antigen, but also the level of these specific antibodies.

Vaccine titer testing requires your veterinarian to take a small sample of your pet’s blood. The test is not painful, and the pet does not need to be anesthetized.

How Does It Work?

Titers are usually reported as a ratio—1:2, 1:500, 1:1000, etc. The ratio describes how many times the blood sample had to be diluted until antibodies could no longer be detected. A high vaccine titer (1:1000) is generally preferred to a low titer (1:2) and is generally considered more “protective.” However, the relationship between vaccine titer ratios and the level of vaccine protection has not yet been clearly established for many diseases.

What Is It Used For?

Vaccine titer tests may be administered to puppies and kittens after their initial vaccination series to see whether their immune system has responded properly to certain vaccines. At birth, animals have some antibodies from their mother to help protect them from disease. These antibodies (known as *maternal antibodies*) begin to “wear off” a few weeks after birth and are generally at very low levels a few months after birth. If a puppy or kitten is vaccinated while levels of maternal antibodies are still very high, the maternal antibodies can reduce the vaccine’s effectiveness against the disease. This is why puppies and kittens need a series of vaccines during their first few months of life: to deliver the appropriate disease immunity when the maternal antibodies have started to fade but before the pet is exposed to the disease.

A vaccine titer test can help detect the presence of specific antibodies. Low antibody levels may indicate that the vaccine has not been effective, that maternal antibodies are still interfering with the development of immunity, or that the puppy or kitten has a problem with its immune system. Depending on the situation, your veterinarian may want to revaccinate your pet.
Veterinarians may also use titer tests when making decisions about whether to revaccinate, or “booster,” an adult pet. According to the American Animal Hospital Association’s vaccine guidelines, vaccine titer tests have recently been established for some diseases, such as canine parvovirus and canine distemper. However, immunity is complex, and the absence of antibodies in an adult pet does not necessarily mean that the animal is no longer immune. It is important to follow your veterinarian’s recommendations regarding when and how often a pet should be vaccinated as well as whether a vaccine titer test should be performed.

Some foreign countries require that pets vaccinated for rabies undergo a titer test before they can be admitted to the country.
Valvular Heart Disease

- Heart valves help control movement of blood through the heart; valvular heart disease can develop when heart valves are not working properly.
- Your veterinarian may recommend a cardiac evaluation if valvular heart disease is suspected.
- Most cases of valvular heart disease are treated with medication, but severely affected pets may not survive, despite medical treatment.

What Is Valvular Heart Disease?

In dogs and cats, the heart contains four valves. Opening of a heart valve allows blood to flow freely from one heart chamber into the next chamber or vessel. Closing of the valve prevents blood from “backflowing” (flowing into the previous chamber).

With valvular heart disease, one or more heart valves become damaged and unable to adequately control movement of blood through the heart. Damaged valves may become thickened, tear away from their attachments, or lose the necessary flexibility to move freely. When the valves don’t function properly, blood flow through the heart can become turbulent or irregular. Backflow can also occur. These changes force the heart to work harder, which causes additional heart damage over time. This can lead to a condition called congestive heart failure, which is when the heart is unable to function appropriately. Valvular heart disease is one of the most common causes of heart failure in dogs; congestive heart failure can be fatal, especially if not treated.

What Are the Clinical Signs of Valvular Heart Disease?

With mild valvular heart disease, your pet may appear completely normal. However, clinical signs in more severe cases can include the following:

- Coughing
- Exercise intolerance (difficulty exercising)
- Lethargy (tiredness)
- Difficulty breathing
- Fainting or collapsing episodes

How Is Valvular Heart Disease Diagnosed?

Your veterinarian will likely diagnose valvular heart disease based on results of a cardiac examination. A cardiac exam helps to assess the overall health of the heart and circulatory system. Your veterinarian may perform some or all of these tests to diagnose your pet’s heart condition:

- **Auscultation**: Your veterinarian will listen to your pet's heart and lungs using a stethoscope, which magnifies the sounds of the heart and lungs. The scientific term for this process is *auscultation*. As your veterinarian listens, he or she may detect irregular heartbeats, an abnormal rhythm, or a heart murmur, all of which can be associated with
valvular heart disease. He or she may also hear abnormal lung sounds, such as sounds produced by fluid buildup, which can occur with congestive heart failure.

- **Blood tests:** Results of blood tests can provide your veterinarian with a large amount of information about your pet’s heart. Useful blood tests may include a heartworm test, chemistry profile, and complete blood count (CBC).
- **Electrocardiography:** Electrocardiography (also called an ECG or EKG) is used to check for abnormalities in the heart’s rhythm. An ECG detects electrical changes associated with the beating of the heart. The electrical changes are recorded by the ECG machine and then interpreted by a veterinarian. An ECG can determine whether the heart is beating too slow or too fast or whether there are irregular beats. It can also reflect changes associated with heart enlargement.
- **X-rays:** Chest x-rays can show the size, shape, and position of the heart. Because valvular heart disease causes the heart to work too hard, the heart muscle can become thickened, and the heart can become enlarged. X-rays also show your veterinarian your pet’s lungs. If congestive heart failure has caused fluid to accumulate in the lungs, your veterinarian will be able to evaluate this.
- **Blood pressure:** Your veterinarian may have equipment that can measure your pet’s blood pressure. Heart disease can cause changes in blood pressure that can contribute to additional illness. Blood pressure that is too low or too high may need to be treated with medication.
- **Cardiac ultrasound:** Your veterinarian may have equipment that can perform a cardiac ultrasound examination (or echocardiogram). The ultrasound machine is connected to a small handheld probe that is held against your pet’s chest. The probe sends out painless sound waves that bounce off of structures in your pet’s chest (such as the heart and blood vessels) and return to a sensor inside the ultrasound machine. This creates an image on a screen that can tell your veterinarian a great deal of information about your pet’s heart. Cardiac ultrasound permits your veterinarian to look at the motion of your pet’s heart valves as the heart is beating. This can provide valuable information about how well the valves are functioning.

**How Is Valvular Heart Disease Treated?**

Most cases of valvular disease are treated with medication. Medication can help the heart work more efficiently; it can also help remove excess fluid that may have built up in the lungs. Severely affected pets may not survive, despite medical treatment.

Sometimes, a special (low sodium) diet is recommended for pets with valvular heart disease. Your veterinarian can also advise you about whether it is safe for your pet to exercise, how much exercise is recommended, and what types of exercise are safe for your pet.

Patients with heart disease should return for scheduled recheck examinations. Your veterinarian may want to repeat some diagnostic tests to see if treatment is improving your pet’s medical problem. Your veterinarian may also want to perform blood work periodically to monitor for medication side effects, such as dehydration or kidney damage.

Surgical procedures are being developed to replace damaged heart valves in animals, but it may
be many years until these procedures are available for veterinary patients. At this time, studies are being conducted that may provide more insight into future treatment options.
**Vestibular Disease**

- Vestibular disease is a medical condition that affects the nervous system.
- Clinical signs of vestibular disease include incoordination (instability when trying to stand or walk), head tilt, and circling to one side.
- Sometimes the cause of vestibular disease remains undiagnosed, but underlying causes can include thyroid disease (in dogs) or a middle/inner ear infection.
- Spontaneous recovery from vestibular disease often occurs.

**What Is Vestibular Disease?**

Vestibular disease is an illness that affects a group of small organs called the *vestibular apparatus*. The vestibular apparatus is located in the brain and inner ear. These organs are responsible for an animal's ability to remain balanced, detect the degree of head rotation, and determine overall body position. Vestibular disease can result if the vestibular apparatus is damaged.

Vestibular disease can be caused by a middle or inner ear infection, tumors involving the middle or inner ear, brain tumors, or head trauma. Thyroid disease has been associated with vestibular disease in dogs, and certain medications can cause vestibular disease-like clinical signs. Sometimes the underlying cause remains undiagnosed; this is referred to as *idiopathic* vestibular disease.

Vestibular disease tends to affect older dogs, but cats can be affected earlier in life.

**Clinical Signs of Vestibular Disease**

When there is an issue with the vestibular apparatus, the pet loses the ability to maintain balance. Clinical signs can occur very suddenly and can be so severe that the pet is unable to walk, stand, or move.

The following are signs of vestibular disease:

- Incoordination (instability when trying to stand or walk)
- Rapid eye movement from side to side
- Circling
- Head tilt
- Rolling or falling to one side
- Vomiting

**Diagnosis**

The diagnosis of vestibular disease involves a physical examination and a neurologic examination (specific physical examination “tests” used to assess the patient’s nerve and brain function). Your veterinarian will likely examine the ear canal to see if there is evidence of an
infection or tumor. X-rays of the skull may also show tumors or evidence of fluid or inflammation in the middle or inner ear.

Some veterinarians have access to sophisticated equipment for computed tomography (CT) and magnetic resonance imaging (MRI), which can provide detailed images of the brain and inner ear. If this equipment is not available, diagnosis is based largely on clinical signs and physical examination findings.

Treatment

The goal of treatment is to address the underlying problem and keep the animal as comfortable as possible until recovery is adequate. If the patient is suffering from an ear infection, the infection should be treated. Sometimes, a course of antibiotics is given. Other treatments are aimed at controlling nausea/vomiting and providing comfort until the patient recovers. Severely affected pets may require hospitalization until they can eat and drink as well as stand without falling.

Many patients recover from vestibular disease within 14 days of the onset of clinical signs, with or without treatment. Occasionally, a slight head tilt may remain, but many patients recover completely. If the underlying cause of the episode was a tumor of the brain or inner/middle ear, the outcome depends largely on whether the tumor can be treated. Similarly, if the underlying cause was an ear infection or thyroid problem, recovery depends on effectively managing these problems.
Vomiting

- Vomiting is the forceful emptying of the stomach.
- If vomiting is prolonged, it can lead to dehydration.
- Vomiting can be associated with several medical conditions ranging from motion sickness to foreign body ingestion to cancer.
- Treatment is aimed at controlling the vomiting and resolving the primary cause.
- A safe environment, healthy diet, routine veterinary care, and wellness blood work will go a long way toward preventing vomiting.

What Is Vomiting?

*Vomiting* is defined as the forceful emptying of the stomach’s contents. It is caused by a signal from the brain to the stomach that originates in a part of the brain known as the *vomiting center*. Vomiting initially developed because it helps save animals from poisoning. Nerves in the abdomen or certain substances in the bloodstream indicate to the brain that the animal may have eaten something toxic, and vomiting can help to rid the body of the toxic substance. Although this does occur now, the actual ingestion of toxins has become less of a threat to our pets than to their wild ancestors; over time, many more triggers began to induce the brain to signal vomiting. Prolonged vomiting can be dangerous because it can lead to life-threatening dehydration.

What Are the Causes of Vomiting?

Primary stomach or intestinal diseases that can cause vomiting include:

- Parasites
- Toxins
- Foreign bodies
- Spoiled food
- Food allergies
- Stomach ulcers
- Inflammatory bowel disease
- Cancer

Secondary or nonstomach disorders that can cause vomiting include:

- Motion sickness
- Thyroid disease (in cats)
- Pancreatitis (inflammation of the pancreas)
- Pyometra (uterine infection)
- Kidney or liver disease
- Canine parvovirus or distemper
- Feline panleukopenia virus

How Is the Cause of Vomiting Diagnosed?
Before attempting to diagnose what may be causing a pet to vomit, it is very important to differentiate between vomiting and regurgitation. Vomiting requires abdominal effort (constriction of the abdominal muscles) and is the active expelling of stomach contents. In contrast, regurgitation is the passive elimination of contents in the esophagus that happens without nausea or retching. This distinction is important because the medical conditions that tend to cause regurgitation are different from those associated with vomiting.

Once your pet’s vomiting has been confirmed, your veterinarian will begin to approach your pet’s diagnosis and treatment. In order to narrow the list of possible causes, your veterinarian will take into account your pet’s age and species. For instance, a young energetic dog that is vomiting is more likely to have eaten something it shouldn’t have, while a senior cat with weight loss, increased drinking, and vomiting is more likely to have a medical problem such as kidney disease or thyroid disease. Your veterinarian will likely ask detailed questions regarding duration of sickness, weight loss, medications, changes in appetite, and timing of the vomiting with regard to meals. A thorough physical exam will be performed to determine if there is abdominal pain, dehydration, or other abnormalities suggesting the cause of the vomiting. You may want to bring some of the vomit to the hospital because the appearance of the vomit can help with the diagnosis. For example, vomit with black coffee ground-like material indicates that the stomach may be bleeding.

Your veterinarian may also recommend performing laboratory tests on blood, feces, and urine. It may also be necessary to evaluate x-rays and perform an abdominal ultrasound examination. If your veterinarian suspects that the problem may be limited to the stomach and the intestines close to the stomach, an endoscopic examination may be recommended. This procedure requires anesthesia and involves passing an endoscope (a long tube containing a tiny video camera) down your pet’s esophagus to look into the stomach and intestines.

**How Is Vomiting Treated?**

Dehydration from prolonged or severe vomiting is of immediate concern, and it may be necessary to admit your pet to the hospital for fluid replacement while a diagnosis is being pursued. Treatment is aimed at controlling the vomiting itself (to prevent further dehydration) and at gaining control of or eliminating the primary cause of the vomiting.

Some causes of vomiting are easily treated, such as when a pet with an allergy to a certain food stops vomiting when the diet is switched. On the other hand, a pet with stomach cancer may need surgery, chemotherapy, or more prolonged and aggressive treatment.

**How Can I Prevent Vomiting?**

Vomiting is a signal to the owner and the veterinary team that something is wrong. If your pet vomits once, remove food and water for a few hours. Continuing to eat and drink may cause the vomiting to continue instead of stopping after one episode. If your pet continues to vomit without having anything to eat or drink, call your veterinarian. Also, do not allow your pet to eat grass—this is an old wives’ tale and does not benefit the pet. In fact, eating grass can contribute to additional medical problems.
Sometimes it can be very difficult to determine the cause of vomiting. This is especially true if a pet is not well supervised or has access to a variety to things that can cause vomiting. Keeping a watchful eye on what your pet eats and preventing his or her access to harmful substances will help prevent many causes of vomiting. Having routine physical examinations, fecal testing, and wellness blood work performed regularly can permit the early discovery and treatment of medical conditions such as parasites, diabetes, kidney or liver disease, thyroid disease, and other conditions that can cause vomiting. A watchful eye, along with early diagnosis and treatment of primary disease, provide the opportunity to prevent vomiting in many cases.
Von Willebrand's Disease

- Von Willebrand's disease is an inherited bleeding disorder that occurs most commonly in dogs and rarely in cats.
- It is caused by a deficiency in the quantity or activity of von Willebrand factor, a protein in the blood that helps platelets stick to injured surfaces to form a clot.
- It is found most commonly in Doberman pinschers, German shepherds, golden retrievers, poodles, and Shetland sheepdogs.
- Signs include prolonged bleeding after surgery or trauma, or bleeding from the nose, gums, and vagina, as well as bloody urine or feces.
- The disease can be diagnosed with a special blood test or with a DNA test.
- Treatment usually requires transfusions with blood or plasma products and/or administration of a synthetic hormone.
- There is no cure for von Willebrand's disease, and dogs with this condition should not be bred.

What Is Von Willebrand's Disease?

Von Willebrand's disease is the most common inherited bleeding disorder in humans and dogs. The disease rarely occurs in cats.

Dogs with this disease cannot clot blood normally, which results in bleeding, especially after surgery or trauma. While this disease has occurred in more than 50 different dog breeds, the breeds most commonly affected include Doberman pinschers, German shepherds, golden retrievers, poodles, and Shetland sheepdogs.

What Causes Von Willebrand's Disease?

The disease is caused by an inherited gene mutation that results in a deficiency in the quantity or activity of von Willebrand factor, a protein in the blood. When an animal is injured, cells called platelets stick to the damaged tissue to form a clot and prevent bleeding. Von Willebrand factor helps the platelets stick to each other, so a deficiency in this factor can result in abnormal bleeding.

What Are the Signs of This Disease?

Owners may not be aware that their dog has this disease until the pet experiences prolonged bleeding after a surgery or trauma. In severe cases, dogs may bleed from the nose, around the gum line, from the vagina, or have bloody urine or feces, even without trauma.

How Is This Disease Diagnosed?

Pet owners who have a breed with a high predisposition to the disease may want to test their dog as a puppy. A blood test can measure the amount of von Willebrand factor in the blood sample. A DNA test is also available for a small number of breeds and can be performed with a simple swab inside the mouth.
It is important to know if your dog has the disease so that your veterinarian can take the necessary precautions to control bleeding if your dog needs surgery or is injured. Dogs that have von Willebrand's disease or are carriers should not be bred, to prevent passing on the disease to their offspring.

In dogs suspected of having von Willebrand's disease, veterinarians can perform a screening test before surgery. Most commonly, veterinarians will check a buccal mucosal bleeding time. In this test, a small cut is made on the dog’s inner lip (sedation may be needed for some pets), and the length of time required for the bleeding to stop is measured. A prolonged bleeding time may indicate a bleeding disorder.

**How Is Von Willebrand's Disease Treated?**

There is no cure for von Willebrand's disease. However, in the event of a bleeding problem, dogs can be treated with transfusions of blood or plasma products to increase the amount of von Willebrand factor in the system. A synthetic hormone called *desmopressin acetate* may also be given to help the dog increase its level of von Willebrand factor.

It’s always better for the veterinarian to know about the disease before starting surgery. Transfusions may be given before, and if necessary, after the surgery to help prevent excessive bleeding. After treatment, the dog should be kept on strict cage rest and monitored until all bleeding has resolved.
Weight Check

- A weight check is the measurement of your pet’s weight and the evaluation of your pet’s body condition.
- A weight check should be performed at every veterinary examination and any time you notice changes in your pet’s weight.
- Unexpected weight loss may be the first sign of diseases such as diabetes, hyperthyroidism in cats, kidney failure, and cancer.
- Weight gain may occur with endocrine (glandular) diseases such as hypothyroidism in dogs.
- Regular weight checks are a good way to monitor the progress of a pet’s weight-loss program.

What Is a Weight Check?

When checking your pet’s weight, your veterinarian will not only weigh your pet on a scale but also assess the appearance of your pet’s body condition. Body condition is usually evaluated on a scale of 1 to 9, with 1 being too thin, 9 being obese, and 5 representing the ideal weight. A similar body condition scoring system uses a 1-to-5 scale, with 1 being too thin, 3 being ideal, and 5 indicating obesity.

When your pet is the ideal weight, you should be able to feel (but not see) the ribs, with a minimal fat covering. When observing your pet from above, your pet’s waist should be visible behind the rib cage. In dogs, the abdomen should “tuck up” behind the rib cage when viewed from the side.

Visible ribs, spinal vertebrae, and hip bones are usually signs that the pet is too thin. When pets are overweight, it is difficult to feel the ribs, and the waist is not visible when viewed from above.

Why Are Weight Checks Important?

Unexplained weight changes in your pet may be the first sign of a health problem. Regular weight checks enable your veterinarian to investigate these problems early. Excessive weight gain by itself may lead to other health problems, including:

- Diabetes (in cats)
- Arthritis
- Ligament and disk ruptures
- Heart disease
- Skin problems
- Shorter life span

Regular weight checks can help you keep your pet at the ideal weight, which can help him or her have a longer, healthier life.
West Nile Virus and Your Pet

- West Nile virus is usually transmitted to dogs and cats through the bite of an infected mosquito.
- Clinical signs of infection in dogs and cats may be very mild or absent.
- Protecting your pets from mosquitoes will reduce their risk of exposure to West Nile virus. Ask your veterinarian about safe and effective mosquito-repellant products for your pets.

What Is West Nile Virus?

West Nile virus (WNV) is a virus that causes encephalitis (brain inflammation). WNV is usually transmitted to dogs and cats through the bite of an infected mosquito. Some birds, including crows, jays, sparrows, finches, grackles, and robins, are competent reservoirs for the virus (meaning they are able to infect mosquitoes). Some infected birds can shed WNV in their feces and other body fluids. In theory, cats and dogs can become infected through ingestion of (or contact with) an infected bird, but mosquito bites remain the primary route of infection.

Currently, WNV is relatively uncommon in dogs or cats. Birds, horses, and humans are more likely to become infected. Although WNV occurs in people, transmission of the virus from dogs or cats to people has not been documented.

What Are the Signs of West Nile Virus in Pets?

Clinical signs in WNV-infected dogs and cats may include fever, lethargy (tiredness), and polyarthritis (joint inflammation). However, most infected dogs and cats do not display clinical signs, or signs may be very mild.

How Is West Nile Virus Diagnosed and Treated in Pets?

Blood tests are generally used to confirm a diagnosis of WNV in pets. Fortunately, most pets recover fully from the infection. Treatment of WNV is mostly supportive. Your veterinarian will show you how to manage any clinical signs until they disappear.

How Can I Protect My Pet From West Nile Virus?

Dogs and cats are usually infected with WNV through the bite of an infected mosquito. There is currently no vaccine against WNV for dogs and cats. Prevention focuses on reducing exposure to mosquitoes and using approved products that safely and effectively repel mosquitoes from dogs and cats.

The best ways for people to avoid being bitten by mosquitoes are to wear long-sleeved shirts, long pants, and socks outdoors; limit outdoor activities and take extra precautions during evening and early morning hours when mosquitoes are most active; and use an insect repellent that contains DEET. (Note: DEET-based repellents are not approved for use in dogs and cats).
Talk with your veterinarian about safe and effective mosquito-repellant products to use on your pets.

To mosquito-proof your home, drain any standing water on the property and install or repair screens so mosquitoes cannot enter.
When to Consider Euthanasia

- Euthanasia is the painless, humane termination of life.
- The decision regarding when to euthanize is fraught with medical, financial, ethical, religious, moral, and sometimes legal considerations.
- Seeking counsel from family, friends, and others can help with this difficult decision. Ultimately, you must trust yourself to make the best choice for your pet.

What Is Euthanasia?

Euthanasia is the painless, humane termination of life. There are times when medical science has exhausted all of its capabilities and euthanasia is the only way to prevent an animal from suffering needlessly. However, the decision regarding when to euthanize is fraught with medical, financial, ethical, religious, moral, and sometimes legal considerations. Euthanasia is therefore a medical procedure that needs to be discussed (however painful that discussion may be) and considered fully before a final decision is made.

How Is Euthanasia Performed?

Most veterinarians use a concentrated solution of a barbiturate, administered as an injection into a vein, to perform euthanasia on a pet. The medication enters the circulation immediately, and it generally stops heart and brain function very quickly. Most pets fall quietly asleep within a few seconds, followed quickly by termination of heart and brain function. However, some animals may experience an excitement phase as the medication begins to affect their brain. During this time, the pet may vocalize or exhibit other distressing behaviors. The excitement phase is not painful in any way; it is merely a reaction of the pet’s brain to the chemicals in the medication. The excitement phase generally lasts for only a few moments, after which the animal becomes calm and falls asleep; heart and brain function soon cease, and the euthanasia procedure is completed.

Your veterinarian may be able to offer you several options based on your preferences for conducting your pet’s euthanasia. Some veterinarians offer the option of being present or stepping out of the room as the injection is given. Some veterinarians may recommend placement of an intravenous catheter for administering the injection, and some veterinarians also administer a tranquilizer to calm the pet before the final injection is given. For pets that are too sick to travel, some veterinarians may be able to schedule a house call so that the procedure can be performed at your home. Ask your veterinarian what options he or she offers. Your veterinary team will make every effort to accommodate your wishes at this very difficult time.

When Should I Consider Euthanasia?

The decision regarding when to euthanize is never an easy one – not for you and certainly not for your veterinarian. This is partly because there are very few times when euthanasia is the only option available. For example, if a dog is hit by a car and sustains a broken back and other extensive injuries that cannot be treated, most people would not argue that the dog is suffering and euthanasia is the only reasonable option. However, most situations are not so clear cut. What
about the pet that has been sick for a long time with kidney disease, heart disease, cancer, or another serious illness, and the owners have reached their emotional or financial limits? What about the elderly pet that is progressively having problems walking and seems to be in pain most of the time? What about the elderly pet that has started to urinate and defecate uncontrollably in the house? These are just a few examples of some situations that may lead a caring pet owner to consider euthanasia.

In short, there are very few times when euthanasia is the only option for a pet. It can therefore be very difficult to know with certainty when it is absolutely time to terminate your pet’s life. Here are a few points to think about when struggling to come to a decision:

- Is my pet suffering?
- If my pet is suffering, what can be done about it?
- Are there any treatments that may help my pet?
- Will diagnostic tests provide useful information that can help me decide?
- Should I seek a second (or third) opinion?
- What are my limitations (e.g., financial and moral/ethical) in terms of diagnostic and treatment options?
- Does my pet enjoy his or her life right now?
- If I do this right now, am I doing it for myself or for my pet?
- If I don’t do this right now, am I doing it for myself or for my pet?
- When I look back on this decision, will I think that I gave up too soon? Will I think that I let things go too far?
- If I’m not ready right now, is there anything that can be done temporarily to help my pet while I struggle to come to a decision?

Although euthanasia is a very personal and private decision, you may not have to make this difficult choice on your own. Your veterinarian may be able to recommend alternative treatments or diagnostic options that can help your pet. In some cases, family members, friends, or clergy can also offer counsel. If finances are a key concern, family members may be willing to help finance further treatment if euthanasia is the only other option. Some veterinarians can also offer you payment arrangements if finances are an issue.

The decision to euthanasia is literally a life-or-death choice that should not be made in haste or without careful thought. Consulting friends, family, and others for support can be very helpful. Ultimately, as a loving pet owner, you must trust yourself to make the best decision for your pet.
Why Do I Need To Vaccinate My Pet?

- Vaccination is an important weapon against infectious diseases.
- Some diseases, like rabies, are transmissible to humans, so protecting your pets also protects your family members and community.
- Pets that stay indoors also can be exposed to infectious diseases, so even indoor cats can benefit from vaccinations.
- Vaccines are safe and generally well tolerated by most pets.
- Vaccine selection and scheduling should be an individualized choice that you and your veterinarian make together.

Companion animals today have the opportunity to live longer, healthier lives than ever before, in part due to the availability of vaccines that can protect pets from deadly infectious diseases. Over the past several decades, the widespread use of vaccines against diseases like rabies has saved the lives of millions of pets and driven some diseases into relative obscurity. Unfortunately, infectious diseases still pose a significant threat to dogs and cats that are unvaccinated; therefore, although vaccine programs have been highly successful, pet owners and veterinarians cannot afford to be complacent about the importance of keeping pets up-to-date on their vaccinations.

How Do Vaccines Work?

Although there are many types of vaccines, they tend to work through a similar principle. Most vaccines contain a very small portion of the virus or bacterium that is the infectious agent. Some vaccines contain small quantities of the entire virus or bacterium, whereas others contain particles that are part of the infectious organism. When this material is introduced into the body in a vaccine, the body’s immune system responds through a series of steps that include making antibodies and modifying other cells that will recognize the target organism later. When the vaccinated individual encounters the “real” organism later, the body recognizes the organism and reacts to protect the vaccinated individual from becoming sick.

Why Does My Pet Need Vaccines?

Vaccines protect your pet

Vaccines are one of our most important weapons against infectious diseases. Some diseases, such as “kennel cough,” in dogs and rhinotracheitis in cats can be transmitted directly from pet to pet. If your pet is ever around other animals, such as at a kennel, dog park, grooming salon, or daycare facility, exposure to infectious disease is possible. Even pets that look healthy on the outside may be sick, so keeping your pet’s vaccines up-to-date is a good way to help prevent illness.

Even primarily indoor pets can be exposed to diseases

Even if your pet doesn’t have direct contact with other animals, some diseases can be transmitted indirectly. For example, parvovirus infection, which is potentially fatal, is spread through contact with feces from an infected dog. Even if your dog never has contact with a dog infected with
parvovirus, exposure to the virus can occur through contact with feces from an infected dog, such as in a park or on a beach. Lyme disease—a dangerous infection that is carried by ticks—is another disease that your dog can be exposed to without coming into contact with other dogs.

In cats, panleukopenia infection is potentially fatal and spread through contact with body fluids (mostly urine and feces) from an infected cat. Once a cat is infected with panleukopenia, it may shed virus in body fluids for a few days or up to six weeks. Panleukopenia can live in the environment (such as on contaminated bedding, food bowls, litter boxes, and other items) for a very long time, so contact with contaminated objects can spread the infection to other cats. Additionally, if a pet owner is handling an infected cat, failure to change clothes and wash hands thoroughly with the correct disinfectant can expose other cats to the disease.

So, even pets that spend most of their lives indoors or have very limited contact with other animals are not completely safe from exposure to infectious diseases.

**Vaccines protect your family and community**

Some infectious diseases, such as leptospirosis in dogs and rabies in dogs and cats, are zoonotic diseases. That means humans also can become infected. In the case of rabies and leptospirosis, both diseases can cause serious illness and death in infected individuals—including humans. Protecting your pets against these diseases also protects the rest of your family members, as well as other pets and people in your community.

**Are Vaccines Safe?**

All of the available vaccines for dogs and cats have been thoroughly tested and found to be safe when administered as directed. Most pets tolerate vaccines very well, although reactions can occur in some cases. Some pets can seem a little “tired” after receiving vaccines. But notify your veterinarian if your pet develops breathing problems, facial swelling, vomiting, hives, redness on the skin, or other unusual changes after receiving a vaccine. You also should tell your veterinarian if your pet has ever had a problem in the past after receiving a vaccine.

**Which Vaccines Does My Pet Need?**

Many vaccines are available for dogs and cats, but every pet does not need to receive every available vaccine. So how do you know which vaccines your pet should have? The American Animal Hospital Association (AAHA) and the American Association of Feline Practitioners (AAFP) have summarized vaccine recommendations to help veterinarians clarify how to best protect dogs and cats through the use of vaccine programs. AAHA and AAFP evaluated the available vaccines and categorized them to provide guidelines on how commonly they should be used. Vaccines are categorized as core, non-core, or not recommended. A core vaccine is one that all pets should receive. The core vaccines for dogs are rabies, distemper, adenovirus-2, and parvovirus; and the core vaccines for cats are rabies, rhinotracheitis (feline herpesvirus-1), panleukopenia (feline distemper), and calicivirus. Non-core vaccines are optional ones that pets can benefit from based on their risk for exposure to the disease. Examples include the vaccines against Lyme disease and leptospirosis in dogs, and the vaccines against feline leukemia virus.
and feline immunodeficiency virus (or feline AIDS) in cats. Categorization of a vaccine as “not recommended” does not mean that the vaccine is bad or dangerous. This designation simply means that widespread use of the vaccine is not currently recommended.

Because core vaccines are recommended for all pets, your veterinarian will recommend keeping these vaccines up-to-date at all times. The decision regarding non-core vaccines should be made after you and your veterinarian have discussed the vaccines in question and whether your pet might benefit from receiving them. Factors to consider include your pet’s lifestyle (how much time your pet spends outside), where you live, where you travel with your pet, and how often your pet has contact with other animals. Bear in mind that vaccine recommendations and your pet’s lifestyle can change. Your veterinarian may want to discuss modifying the vaccine recommendations to ensure that your pet is well protected.

**What Is The Recommended Schedule For Vaccines?**

Puppies and kittens generally receive their first vaccines when they are around six to eight weeks of age (depending on the vaccine and manufacturer’s recommendations). Booster vaccines are generally given during your puppy or kitten checkup visits; your veterinarian can discuss the recommended schedule with you. Vaccines are generally repeated a year later.

Although puppies and kittens are considered especially vulnerable to some diseases, it is also very important for adult pets to be up-to-date on vaccines. Traditionally, many vaccines were repeated yearly, during regular checkup examinations. However, research has shown that some vaccines can protect pets for longer than one year. In light of these findings, the AAHA and AAFP guidelines note that some vaccines don't need to be repeated more frequently than every three years. The decision regarding how often your pet needs vaccine boosters depends on several factors, including your pet’s overall health status and risk for exposure to the diseases in question. Your veterinarian may recommend annual boosters after considering your pet’s lifestyle and disease exposure risk. The decision regarding how often to administer any vaccine (annually, every three years, or not at all) should be an individualized choice that you and your veterinarian make together.

Vaccination remains one of the most important services your veterinarian offers, and although vaccination is a routine procedure, it should not be taken for granted. It also allows a regular opportunity for your veterinarian to perform a physical examination, which is very important for keeping your pet healthy. Protecting patients is your veterinarian’s primary goal, and developing an appropriate vaccine protocol for your pet is as important as any other area of medicine.
Winter Hazards and Your Cat

- Cats are attracted to the sweet smell and taste of antifreeze, but if eaten, this toxin can quickly cause kidney failure.
- Outdoor cats depend on people for their warmth and survival during the winter months; special steps need to be taken to keep these cats safe.
- Holidays are a time for celebration but can pose multiple risks to cats. Lilies, chocolate, alcohol, ribbons, tinsel, and other common holiday items can all be dangerous to our feline companions.

What You Need to Know

Cats that spend time outdoors are exposed to various environmental and physical dangers. In the winter, cats are at risk for frostbite and hypothermia (low body temperature), just like humans. Cats should not be left outside for long periods of time in the winter and should always have the option of coming inside. It’s important to be aware of these risks, so you can keep your cat safe and healthy.

Colder Temperatures

Once temperatures start to dip below the freezing point, remember that any outdoor water will freeze. Cats need a constant supply of fresh, unfrozen water. For outdoor cats that only have access to outdoor water, heated water bowls can be used to keep water from freezing. If an electrical source is not available, water should be kept in a covered, enclosed space to prevent it from freezing quickly. Dog igloos filled with straw work well for outdoor cats, giving them a warm place to eat, drink, and keep dry from the winter elements. Heated pet mats are also helpful and will help a cat retain its body temperature, which is especially important for old or sick cats. It is important to only use heated products that are approved for pets.

Cats that spend a lot of time outdoors during the winter months use more calories in order to stay warm. Giving your cat a higher-quality, protein-rich food will help him or her stay warm and healthy. If your cat has any medical problems, consult your veterinarian before making any diet changes.

Outdoor cats may seek warmth under car hoods and can be injured or killed by the car’s fan belt. Before getting into your car, knock loudly on the hood to ensure that a cat is not hiding beneath.

Antifreeze

Even cats that are used to being outside can suffer hypothermia and frostbite. If severe winter storm warnings or extreme cold weather alerts recommending that humans stay indoors are issued in your area, it is a good idea to bring your cat indoors, too. If your cat cannot be brought indoors, a garage or mud room can provide enough shelter in some cases.

Also known as ethylene glycol, antifreeze is probably one of the most common and dangerous winter toxins. Antifreeze is highly toxic, and cats are sometimes attracted to its sweet smell and
Once a cat drinks antifreeze, the toxin is rapidly absorbed, and signs such as vomiting, loss of coordination, and depression can appear within 1 hour. The kidneys are most severely affected by antifreeze, and even if signs start to improve with treatment, they may have already started to shut down. Acute kidney failure can occur within 12 to 24 hours after ingestion of antifreeze, so it is important to take your cat to the vet immediately if you suspect he or she has drunk even a small amount of antifreeze.

**Salt and Chemical Ice Melts**

Cats that walk on sidewalks or pathways that have been de-iced can have chapped, dry, painful paws. Also, because cats tend to lick their paws, they can be exposed to toxic chemicals found in some ice melts. Pet-safe ice melt products can be purchased at most home improvement and pet stores. However, not everyone in the neighborhood may use these products, so it is important to wash your cat’s feet with a warm cloth after he or she comes in from being outside.

**Holiday Hazards**

The holidays pose many risks to cats. Chocolate, alcohol, onions, and coffee are some of the popular party supplies that can cause health problems in your cat. A common holiday plant is the lily, found in many holiday arrangements. Lilies are poisonous to cats. If a cat eats any part of a lily, initial signs of poisoning could include lethargy (tiredness) and a lack of appetite, but kidney failure can occur within 36 to 72 hours. Contact your veterinarian immediately if you think your cat has eaten any part of a lily plant.

Most cats love tinsel and ribbon, which, if eaten, can damage the intestines, requiring surgery. Keep these items out of reach of your cat.

Cover up electrical cords to prevent them from dangling and being mistaken for cat toys. If chewed, these cords could electrocute your cat.

**More Cold-Weather Tips**

Your Pet's Prescribed Diet

If your pet is on a prescribed diet, keeping him or her on that diet is essential for the best possible health and quality of life. Your veterinarian has carefully selected your pet’s prescribed diet based on his or her specific needs, so this food should not be changed.

Please order refills of your pet’s prescribed diet at least 2 weeks before he or she will finish the current supply. Your veterinarian will appreciate your help with keeping your pet healthy and properly fed.