

THIS JUST IN

## Bone Cancer Metastases

The chance may be greater than previously thought

Cats with bone cancers tend to be lame and usually have swelling at the cancer site. The area is often painful and feels warm to the touch. Amputation is commonly recommended as the best therapeutic option, and concern for metastasis (spread of cancer to other parts of the body) has been historically low. This idea, however, has been challenged by a Japanese retrospective study investigating the outcomes of cats with bone cancer who had limb or scapula (shoulder-blade) amputations.

The study included 67 cats with osteosarcoma (70% to 80% of bone cancers in cats are osteosarcoma). The most common site for cancer was the femur, followed by the tibia or fibula, and then the scapula. Unfortunately, about 40% of the cats in the study experienced distant metastases of their cancer. Osteosarcoma of the humerus had a particularly high rate of metastasis, occurring in six of seven cases.

If your cat develops bone cancer and undergoes an amputation as treatment, you still need to follow up with regular screening for evidence of metastasis. In some cases, additional therapy (i.e., chemotherapy) may be recommended to treat any metastatic lesions that are identified. ■

JAVMA Jan 15, 2022 Vol 260 No S1 Outcome of appendicular or scapular osteosarcoma treated by limb amputation in cats: 67 cases

### INSIDE THIS ISSUE

Cats' Unique Evolutionary Adaptions.....	2
Fish-Skin Grafts Can Be Used to Heal Wounds.....	2
Red Alert: Cat Stops Eating.....	3
Tiny Fleas Carry Big Diseases.....	4
Unrelenting Itchy Ears.....	6
Adding a Pet? It Takes Time.....	7
Do All Cats Itch and Scratch?.....	8
Helping Kittens.....	8

## The Reasons Some Cats Bite

Irritability, redirected aggression, fear, and playfulness may all motivate your cat to attack

An angry cat can do a lot of damage quickly. It can happen so fast that you may not even realize what made him angry. "Cats may attack their owners for various reasons, including fear, irritability, pain, or to solicit play or attention," says Pamela J. Perry, DVM, PhD, behavior resident at Cornell University's College of Veterinary Medicine.

To resolve the situation, think about what was happening just before his reaction. If you were touching a particular part of his body, he might be injured there. If he was cornered, or your dog was close by, he may have felt trapped.

"Some cats also redirect their aggression from their intended target to the owner," says Dr. Perry. If your cat sees another cat outside, he may want



Cats can sink their claws into our skin in the blink of an eye. The reasons vary widely, but the result is often the same.

to defend his territory. When he can't access the outdoor cat, he may become frustrated and take out his aggression on the first being that crosses his path, which might be you.

(continues on page 4, bottom)

### Cat Scratch Diseases

As well as being painful, a scratch from a cat can cause disease, including:

**Cat-scratch disease (lymphoreticulosis):** An infection with the bacteria *Bartonella henselae*. Cats pick up the bacteria from fleas and then can pass it on to humans via a scratch. Infection is initially characterized by redness, swelling, and oozing at the wound site, followed by fever, swollen regional lymph nodes, headache, and fatigue. Also called "cat-scratch fever."

**Pasteurellosis:** An infection caused by *Pasteurella* bacterial species. Symptoms are similar to those seen with cat-scratch disease.

**Tetanus:** An infection with the bacteria *Clostridium tetani*. This bacteria is common in the environment, and a cat scratch can be contaminated with it. Infection is characterized by muscle stiffness and spasms, difficulty swallowing, jaw cramping, and fever. Also known as lockjaw. The Centers for Disease Control and Prevention recommends that everyone have a tetanus vaccination and appropriate boosters.

If you do get scratched, wash the wound immediately and thoroughly with soap and water to reduce the risk of infection, bandage it if necessary, and call your doctor. Cat bites and scratches may require antibiotics and the sooner you start treatment, the better.

# Red Alert: Cat Stops Eating

*If your cat refuses food for even a short time, it can trigger a potentially fatal liver disease*

**W**hen your cat starts missing meals or her free-choice bowl isn't requiring as many refills, you need to take action. Not eating can be fatal for your feline friend, as it can predispose her to the most common liver disease in cats, hepatic lipidosis (HL).

HL occurs when fats are metabolized rapidly to supply energy for a cat that is not eating. This rapid mobilization can result in an accumulation of fat within liver cells, compromising liver function. HL is more likely to occur in overweight cats that stop eating.

Ideally, HL (also known as fatty liver disease) should be prevented by assuring that your cat is eating appropriately. If it develops, however, it must be caught early and treated aggressively. Affected cats usually begin with anorexia that may worsen with vomiting. In-hospital stabilization, including rehydration, normalization of electrolytes, and institution of a plan to promote adequate nutrition, can take up to 10 days. Complete recovery, if achieved, can take as long as 12 weeks.

"Due to hepatic lipidosis, I get nervous when a cat is completely off feed for over three to four days. I often encourage treats and, depending on the disease, feeding small amounts of cooked meats to see if we can stimulate appetite," says Joseph J. Wakshlag, DVM, PhD, chief of the nutrition service at Cornell University Hospital for Animals.

## Reasons for Anorexia

Anorexia is a sustained loss of appetite, and it most commonly occurs as a result of illness in cats. Gastrointestinal (GI) diseases like inflammatory bowel disease, GI lymphoma, or a foreign body in the GI tract can cause cats to stop eating, as can fevers and chronic liver or kidney disease. Dental disease may be so painful that your cat chooses not to eat, and any disease that interferes with a cat's sense of smell (i.e., upper respiratory infections) can also decrease her appetite.

Because so many diseases can cause your cat to stop eating, a thorough veterinary evaluation is needed, starting with a detailed history and physical



*If you think you are filling your cat's free-choice bowl less often than normal, you may want to consult your veterinarian.*

exam. Often bloodwork and other diagnostic tests are necessary to make an accurate diagnosis.

How to stimulate your cat's appetite depends somewhat upon the cause of anorexia. Most veterinarians will recommend treating the underlying disease, prescribing appetite stimulants (more on that below), and trying different foods. Particularly difficult cases may be referred to a veterinary nutritionist, says John Loftus, PhD, DVM, co-section chief of small animal internal medicine at the Cornell University Hospital for Animals.

Stress, whether something major like a move or adding a new pet or as seemingly minor as rearranging the furniture, can cause your cat to back off of her food. Obviously, you can't avoid all stress in your cat's life, but minimizing it by providing safe, quiet places for your cat to retire to, adequate numbers of litterboxes, time and environment for exercise, play, and one-on-one socialization, and perhaps using synthetic feline calming pheromones such as Feliway can be very helpful.

## Finicky

Some cats simply seem to be finicky. "I am a fan of allowing rotation of foods," says Dr. Wakshlag, although your ability to do this may depend on the disease process your cat is experiencing. "Many cat owners have some success rotating

around different canned products from seafood to poultry to terrestrial mammal bases to keep a cat interested. It's important to get the calories into cats to prevent hepatic lipidosis and muscle wasting," says Dr. Wakshlag.

Different flavors may motivate your sick cat. Note: If you start your kitten or new cat off by rotating foods, it may help you in the future if she loses her appetite.

Remember that your cat's desire to eat is motivated by scent. Start by warming your cat's normal food in the microwave, but don't serve it hot. Always check to make sure that it is not too hot in one area after heating, and stir it up. You can also simply add warm water and make a slurry.

Additional tricks to entice your sick cat's appetite include:

- ▶ Pouring juice from a can of tuna packed in water over her food.
- ▶ Adding plain shredded pieces of freshly cooked beef or chicken to her food.
- ▶ For cats who can tolerate dairy products, plain or vanilla yogurt or ricotta cheese stirred in with the normal food may hit the spot.
- ▶ Switching to a different flavor of your cat's standby favorite.
- ▶ Switching to wet foods with gravy/sauce if feeding loaf-type foods.

## Veterinary Intervention

Talk with your veterinarian about appetite stimulants such as mirtazapine. Originally prescribed as an anti-nausea medication for cats, it can stimulate the appetite as well. This drug can be given orally or in transdermal formulation. The latter may be helpful in cats that are hesitant to eat, as you can simply rub the medication on the inside of your cat's ear.

If your cat adamantly refuses to eat in spite of these measures, she may need a feeding tube placed for a short time. "In some cases, inappetence or anorexia in cats will require short- or long-term management with a feeding device, such as an esophagostomy tube, that will allow pet owners to assist in feeding their cats that refuse to eat voluntarily. This is well-tolerated in most cats that require this level of intervention," says Dr. Loftus.

With training, most owners can feed their cat at home, carefully mixing a quality, balanced slurry to administer via the tube. The goal is to get your cat's nutritional status back on track and, hopefully, her appetite will then take over and she will eat happily on her own. ■

Companion Animal Parasite Council's website, capvet.org, and click on the Quick Product Reference Guide at the top of the screen for an exhaustive list of FDA- and EPA-approved flea and tick preventatives for cats.

The mainstays of flea/tick prevention in cats are topical products, oral tablets, and a prescription collar. The most popular products are the topicals (especially the one that lasts for three months) and the collar.

**Comfortis** (Elanco), with the active ingredient spinosad, is a monthly chewable tablet for cats that are at least 14 weeks of age and 2 pounds in body weight. It kills fleas, and reported occasional side effects include lethargy, vomiting, and diarrhea.

**Credelio** (also from Elanco), with the active ingredient lotilaner, is a monthly chewable tablet for cats 8 weeks of age and older and greater than 2 pounds in body weight. It kills fleas and is labeled for prevention of black-legged (deer) ticks in cats 6 months of age and older that weigh at least 2 pounds. Lotilaner belongs to the isoxazoline class of drugs, which has occasionally been associated with neurologic side effects, so caution is advised in cats with neurologic disorders. Vomiting is the main other side effect.

Among the topicals for flea prevention, the Advantage products (Bayer), with their active ingredient imidacloprid, are popular. The only disadvantage is that they don't kill ticks, which must be considered when choosing a product for cats who go outdoors. All Advantage products kill fleas.

**Advantage II** includes pyriproxyfen, which is an insect growth regulator that helps knock down current environmental flea populations and prevent new ones from starting by targeting the eggs and larval stages.

**Advantage Multi**, which includes moxidectin (prevents heartworm disease), treats and controls ear mites and common intestinal parasites.

Cats must weigh at least 2 pounds and be 8 weeks or older for Advantage II and 9 weeks or older for Advantage Multi. Skin irritation at the application site is a possible side effect of any topical product and has been reported with the Advantage products.

**Bravecto** (Merck), active ingredient fluralaner, has become a popular topical preventative among cat owners because of its long duration of action and because it also prevents tick infestations.

## Gaining Control of an Infestation

Eliminating a current flea infestation can be difficult. Fleas are hardy, and developing fleas can survive for months under the right conditions. If you have a flea problem, you must carefully de-flea both your cat and your environment.

A useful aid is Capstar (Elanco), which is an oral product that starts killing fleas within 30 minutes and lasts 24 hours. This makes it very useful for short-term help in certain situations, such as in a heavy infestation to protect your cat from blood loss while your environmental control measures kick in.

The active ingredient is nitenpyram. While Capstar is available without a prescription, if you have a serious flea infestation, you should consult your veterinarian. Capstar is labeled for use in cats 4 weeks of age and older, and at least 2 pounds in body weight. It is useful for flea-allergic cats to minimize itching in the face of a flea infestation. Although Capstar's side effects are minimal, its short duration of action makes it impractical for long-term prevention.

Indoor environmental treatment is recommended, as that's where the majority of fleas are most of the time. The treatment should include an insect growth regulator (IGR) product. IGRs interfere with the development of eggs and larvae, which speeds up the process of elimination of your flea population. You can use a spray, like Knockout spray by Virbac, or call an exterminator if you prefer.

Heavy vacuuming is recommended DAILY. Be sure to discard your vacuum bag or bagless debris—which will be full of fleas, flea eggs, and pre-adult fleas—into a closed, sealed plastic garbage bag. When vacuuming or spraying, be aware that the heaviest burden of eggs and larvae will be where your cat frequently jumps down, like from a bed or chair, as that's when eggs and larvae fall off. Flea larvae also are commonly found in darker areas, like under furniture. Focus on these areas. And don't forget to carefully clean your cat's travel carrier. Eggs can lay dormant in there for months, waking up and hatching when they sense your cat's presence.

Make sure all haired animals are being treated with a safe (i.e., approved for their age and species) and effective flea preventative product. This is important for a full six months to get through the current problem. If you're wise, you'll continue following a prevention program permanently.

Fluralaner is an isoxazoline, so you should use it with caution in cats with neurologic disorders. Other side effects are minimal. It kills fleas and black-legged (deer) ticks for 12 weeks, but it's only effective against *Dermacentor* ticks for eight weeks.

**Revolution** (Zoetis), active ingredient selamectin, is approved for cats 8 weeks of age and older. In addition to killing fleas, it kills and prevents ear mites, and treats and prevents both roundworm and hookworm (intestinal parasites) infections. You can bump up a notch to **Revolution Plus**, which adds sarolaner, an isoxazoline, to kill ticks. However, the same caution regarding neurologic disorders applies.

Finally, the prescription flea/tick preventative collar **Seresto** (Bayer), with active ingredients flumethrin and imidacloprid, is labeled for cats over 8 months of age and kills fleas and ticks for 8 months. The active ingredients are not

absorbed systemically (testing showed no detectable amounts in blood or tissue), but rather sit in your cat's natural skin oils, with sustained-release technology releasing just enough ingredient every day. While the Seresto collar got some bad press in 2021 with unsubstantiated questions regarding its safety, the millions of collars sold and in use since its release speaks volumes about its relative safety and efficacy. Side effects include hair loss and/or skin irritation at the collar site.

Preventing fleas and ticks on cats makes good sense. Perhaps the best argument for flea prevention for indoor cats is that fleas cause diseases, both human and feline. This makes the big question not why would you, but why wouldn't you use flea/tick preventative in your cat. The prevention of flea and tick infestations is less expensive, uncomfortable, and inconvenient than the cost and headache of treatment. ■

# Adding a Pet? It Takes Time

Dr. Kaplan explains how to make everything friendly

Cats have strong opinions that can become apparent when you add a new pet. To avoid hissing, spitting, and scratched noses, “Be patient, do it slowly, and do not rush the process,” says Leni K. Kaplan, MS, DVM, of Cornell University’s Small Animal Community Practice. The introductory period will set the tone for the rest of your cat’s life with the new pet, so it is worth taking the time to make it a positive experience. Dr. Kaplan advises these steps to promote peaceful acceptance:

**1 Choose wisely.** “Try to ascertain whether a dog is cat friendly before bringing him into your home,” says Dr. Kaplan. Some shelters, rescues, and breeders can test dogs and puppies with cats before they are adopted out, or they may let you do a home visit with the dog to see how the animals interact. Some cats may never accept a canine friend, so a new cat may be a better choice.

And sometimes, adding a new pet just isn’t a good idea. “Keep in mind that some cats prefer to be the only pet in the household,” says Dr. Kaplan. If your cat turns into a furry ball of rage at the sight or sound of another animal, it may be best for everyone if she gets your full attention for the rest of her life.

**2 Gates and secure getaways.** Your cat needs to know that home is a place where she is safe, secure, and can find her own space.

“Plan on separating the new pets from the old pets for at least one week while everyone acclimates,” says Dr. Kaplan. A gate or wire pen that separates them but allows them to sniff, see, and hear one another can work beautifully toward a gradual, safe introduction.

You can get exercise pens (ex-pens) that are tall enough to keep a puppy secure while your cat roams freely. You can also get pens with tops, so no one can jump in or out. Some companies make door-size gates that allow you to go in and out, but keep your pets confined without restricting their freedom, such as the sunroom belongs to the new dog. Ex-pens are generally preferable to crates, especially when you’re home to keep an eye on things. Save crates for overnights and when you leave the house.

A little privacy goes a long way, too. “All pets should have a ‘safe space’ where the other cannot gain access,” says Dr. Kaplan. This might be a room blocked off by a gate only one pet can jump over to get away from the other one. Or, maybe a cat tree or open crate will do the trick.

Knowing that she can get away from the new pet and have a break will help your cat feel more secure.

**3 Short, positive interactions.** “Make all interactions between new and old pets positive by using treats, verbal praise, or cuddles,” says Dr. Kaplan. “Avoid yelling or contributing to an already stressful situation and plan ahead so you set everyone up for success.” Keeping interactions short will increase the odds that they go well and reduce the risk of either pet getting overstimulated.

Your cat may take some time to warm up to the idea of a new buddy. “Be patient. It may take days/weeks/months for a new pet to acclimate to a household with other animals—it is dependent on the individual pet,” says Dr. Kaplan.

**4 Supervise.** When stressed, cats and dogs alike can lash out and

bite or scratch to defend themselves. To keep everyone safe, new pets should be separated from your cat when you aren’t around to watch them.

“Plan to supervise all interactions for the first one to three months,” says Dr. Kaplan. “If you cannot closely supervise, separate the new from the old pets by confining cats to their safe space room, or place dogs in a crate.”

**5 Take time and be patient.** “Let them take as much time as they need to get used to one another and feel comfortable,” advises Dr. Kaplan. Watch the body language and behavior of both your cat and your new pet. Signs of unhappiness include tense posture, hard staring, hissing, swatting, and growling. If your cat is afraid of the newcomer, she may hide as far away as she can. She might even be irritable with you.

If your cat is still unhappy a few weeks after the new pet has arrived, she isn’t ready to be fully integrated. Continue supervising interactions and separating them when needed until your cat is relaxed around the new pet, and resumes her normal routine.

If things aren’t going well or your cat shows stress behaviors such as house soiling or excessive hiding after the new pet arrives, talk to your veterinarian. There are medications that can be given to your cat to help reduce stress and promote that peaceful household. ■



With encouragement, your cat and new dog may become true friends, but you have to do introductions correctly and monitor their developing relationship for at least three months.