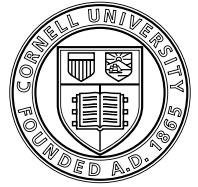




# Cat Watch

August 2020 - Vol. 24, No. 8



Expert information on medicine, behavior, and health in collaboration with a world leader in veterinary medicine

THIS JUST IN

## The Cat Was Positive

### For *Streptococcus A*

A May 23 article in *The Washington Post* recounted the story of a Wisconsin family with recurrent Strep A throat infections. Antibiotics would restore everyone to good health, but the infection would return.

Finally, veterinarians at the University of Wisconsin agreed to culture the cat for Strep A. Cats aren't known for carrying Strep A, but the cat came back positive.

The most common streptococcus found in cats (and dogs) is Strep G canis, not a common human pathogen. In the rare cases when Strep A has been cultured from pets (primarily from dogs), it was felt that the people shared their infections with the pet, not vice versa.

The Animal Health Diagnostic Laboratory at Cornell says, "The Infectious Diseases Society of America (idsociety.org) claims there is currently no credible scientific evidence to support Group A *Streptococcus* colonization of dogs or their role in these recurrent human infections, and therefore we do not recommend canine throat cultures in these situations." This was true for cats, too, but not anymore.

The primary streptococcus causing health problems in cats is *Strep equi subsp zoepidemicus*. This is considered an "emerging" pathogen and may cause pneumonia and or meningoenephalitis. ■



## Cats and COVID-19

### Keep cats safe and stay away if you're infected

As we are all aware, the COVID-19 situation changes daily, making it difficult to present the most recent information in a printed monthly newsletter. However, we believe it's important for our readers and all cats that we help you understand the connection.

Domestic cats can be infected by SARS-CoV-2, although they do not appear to be highly susceptible. In spite of the high prevalence of infections in humans, there have only been six domestic cats diagnosed with COVID-19 worldwide as of the time this article.

"At this point, there's no evidence that cats can transmit the virus to people, although there is circumstantial and some experimental evidence that humans can serve as sources of infection for cats," says Bruce Kornreich, DVM, PhD, DACVIM, Director of the Cornell Feline Health Center and Editor-in-Chief of CatWatch. "We also know that cats can transmit the virus to other cats," he says.

There's no reason to abandon your cats as a result of the current COVID pandemic, but it would be wise to isolate cats from any person or animal diagnosed with COVID-19 or demonstrating symptoms, and we recommend keeping all cats inside to avoid other cats (we always recommended keeping cats indoors).

It is not possible to predict with absolute certainty whether SARS-CoV-2 will ultimately be shown to be transmissible from cats to humans, and intense investigation of this potential and

other aspects of COVID-29 are ongoing. It's important to note, however, there are other viral respiratory diseases that cats are susceptible to that they cannot transmit to humans. At this time, the CDC is not recommending routine testing of pets for COVID-19.

For the more information on the COVID crisis and cat ownership: <http://tiny.cc/CW-CDC-pets> (CDC on pets), <https://tinyurl.com/CW-Covid-19> (from the Cornell Feline Health Center) and <https://tinyurl.com/CW-CDC-VOVID-19> (CDC on animals). ■



Samuel Levech | iStockphoto

## Precautions for Safety

The CDC recommends these COVID-19 precautionary measures:

- ▶ Do not let pets interact with people or animals outside the household.
- ▶ Keep cats indoors to prevent them from interacting with animals or people.
- ▶ If you are sick with or suspected of having COVID-19, restrict contact with your animals. If you must care for animals while you are sick, wear a face covering and wash your hands before and after you interact with them.

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## Tiger Came First

The first documented case of animal COVID-19 in the United States was a tiger at the Bronx zoo. The Malayan tiger was showing signs of mild respiratory disease and, while ruling out other potential causes, it was decided to do a SARS-CoV-2 test. The test, carried out at the Animal Health Diagnostic Center at Cornell and the University of Illinois and later confirmed at USDA's National Veterinary Services Laboratories, identified genetic material of the SARS-CoV-2 virus in the upper airways and trachea of the tiger. Combined with the symptoms observed, a presumptive diagnosis of COVID-19 was made. Subsequently, the feces of several of the other tigers and lions showing mild respiratory symptoms was tested and showed evidence of the virus.

## Preanesthetic Testing

*It's a little more money, but also peace of mind*

**W**hile anesthetic protocols are much safer now than even just 20 years ago, it makes sense to do some preanesthetic testing if your cat is scheduled for major surgery, has a chronic problem, and is an older cat.

There are four basic areas of testing generally recommended:

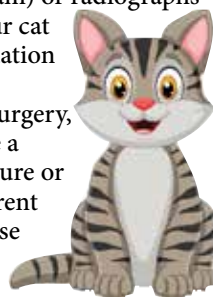
- ▶ Blood chemistries to evaluate your pet's liver and kidneys and rule out some metabolic conditions
- ▶ A complete blood count (CBD) to look for infection or anemia
- ▶ A clotting panel to be sure your cat won't have problems with bleeding
- ▶ A urinalysis that backs up the chemistry panel.

The information from these tests may guide your veterinarian in choosing which anesthetic drugs would be safest for your cat.

Minimal testing is recommended for young, healthy cats scheduled for minor procedures. Those tests such as a quick packed cell volume and quick evaluations for BUN (blood urea nitrogen) and blood glucose, which can often be done rapidly right at your clinic. However, cat with a chronic health condition, older cats, and cats facing an extensive surgery or dentistry may benefit from a full screening ahead of time.

Senior cats, and cats who have some unusual findings on their pre-surgery physical examination may need some extra testing. An EKG (echocardiogram) or radiographs could be suggested if any heart abnormalities are detected or if your cat shows any respiratory malfunctions. For older cats, a thyroid evaluation and blood pressure measurements may be recommended.

Abnormal findings don't necessarily mean your cat must skip surgery, especially if that surgery is for a critical condition. The findings are a heads up to your veterinarian that some adjustments to the procedure or post-op care. Your cat may require special intravenous fluids, different pain medications, or even to have a blood donor in the wings in case there is a problem. It's much better to know ahead of time than to be caught with an emergency in the middle of a procedure. ■



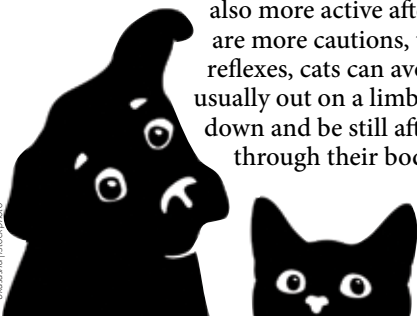
## Snake Bite: Cats Beat Dogs on Survival

*It is likely due to the feline's slower clotting ability*

**A** study in the *Journal of Comparative Biochemistry and Physiology* compared the effects of snake venoms on the blood-clotting agents in dogs and cats. The researchers said that 31 percent of dogs survive a bite by an eastern brown snake without receiving antivenom, while 66 percent of cats survive. With some snakes, death is caused by "venom-induced consumptive coagulopathy," which is a condition where the venom causes the blood to lose its ability to clot. The victim basically bleeds to death internally.

The researchers used a coagulation analyser to test the effects of 11 venoms on dog and cat plasma in the lab. They found the spontaneous clotting time of the blood—even without venom—was dramatically faster in dogs than in cats. This is consistent with clinical records, which show a more rapid onset of symptoms in dogs.

Cats have other advantages. Dogs are more likely to be bit around the head, which is a very vascular area so venom moves quickly throughout the body. Most dogs are also more active after a bite, usually attacking the snake. Cats are more cautious, tapping a snake with a paw. With their quick reflexes, cats can avoid many bites and, if they do get bitten, it is usually out on a limb. In addition, they are more likely to hunker down and be still after a bite, so the venom does not travel as fast through their bodies. ■



Zdenek, C.N., et al. *Pets in peril: The relative susceptibility of cats and dogs to procoagulant snake venoms. Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology, 2020; 108769 DOI: 10.1016/j.cbpc.2020.108769.*



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# Runny Eyes Are Not Normal

*Why your cat is tearing up and when to be concerned*

Cats can get runny eyes for a variety of reasons—and the cause is not necessarily in the eye itself.

Your cat may just have something in his eye, but chronic tearing suggests a more involved cause. Thomas J. Kern, DVM, DACVO, Associate Professor of Ophthalmology at Cornell, says that runny eyes in cats are often related to “common upper respiratory infections (URIs), even without respiratory signs—chlamydia, mycoplasma, herpesvirus, calicivirus. Rarely, malformations or malpositioning of the tear drainage ducts may cause excessive watery discharge, especially in brachycephalic (short-faced) cats like Persians, due to overflow of normal tears.”

You may notice clear watery discharge or it could be more like mucous. “Runny eyes from all of these causes may affect one or both eyes simultaneously or sequentially, acutely or chronically,” Dr. Kern says. “Many cats have intermittent crusty discharge, often brown or black, that accumulates at the inside corner of the lids; this seems to be a tear film remnant and can usually be managed by simple removal with a cotton ball or Q-tip as needed.”

## Debris and Abrasions

If your cat’s eyes are normally dry and clear, but you notice tearing in one, he may have gotten something in it. Even a small piece of dirt or plant material can cause irritation and discomfort. If he will let you, flush the affected eye with plain artificial tears. The artificial tears may sweep the debris out of the eye.

Unfortunately, even the smallest foreign body can damage the cornea. Scratches are painful and combine with the natural moisture of the eye to provide an ideal environment for infection. These infections can become ulcers that, if left untreated, can gradually chew through the cornea and can rupture the eye.

While this is terrible, the good news is that your veterinarian can check for ulcers and abrasions with a fluorescein stain. This stain runs off of healthy cornea tissue but sticks to scratches and ulcers. These areas will look bright green when viewed with a blacklight.

In most cases, ulcers and abrasions can be treated with topical drops and



*Runny eyes in cats can be associated with upper respiratory infections.*

ointments, but if the ulcer is severe or does not respond to treatment, your veterinarian will likely refer you to a veterinary ophthalmologist for more intensive diagnostics and treatment.

## Upper Respiratory Infections

Cats are prone to URIs. These infections are all highly contagious and spread quickly between cats. The ocular discharge from a cat with a URI can vary in color and consistency. Some cats just experience a little crusting in the corners of the eyes, while others can have such severe discharge that the eyes are crusted shut. As well as runny eyes, these cats often have nasal discharge and may show lethargy, inappetence, coughing, sneezing, and/or tongue ulcers. Some may have difficulty breathing or only be able to breathe through their mouths.

If your cat is showing respiratory signs, let your veterinary staff know ahead of time. They may have you come in through a different door or use a particular exam room to limit exposure and spread to other patients.

Calicivirus and herpesvirus (viral rhinotracheitis) are included in the typical rhinotracheitis-calicivirus-panleukopenia (RCP) vaccine. This vaccine is recommended for all cats and kittens. (The chlamydia vaccine is not recommended for all cats.)

Your cat will receive symptomatic treatment to alleviate his symptoms and may start antibiotic therapy if a bacterial agent is suspected. A swab can be sent out to a lab to identify the cause of the infection and determine the best treatment option.

## Tear-Duct Abnormalities

Your cat has nasolacrimal ducts in the corner of his eyes that drain into his nasal cavity. These ducts allow the normal tears that keep his corneas moist and healthy to drain out of the eye. If the tear ducts are blocked or not in the correct spot, excess tears will build up and spill over the lower eyelid to track down your cat’s face. Over time, this can cause staining.

Your veterinarian can do a quick check of the nasolacrimal ducts at the same time that he/she is checking for scrapes and ulcers. If the ducts are open and functioning normally, the fluorescein stain will drain into the nasal cavity and a little will come out your cat’s nose. So don’t panic if you see some fluorescent green dripping from his nose—that’s good! If the stain does not appear near the nose, more testing may need to be done to evaluate the tear ducts and identify any potential problems.

The tear ducts can be flushed to clear them. This is a minor procedure, but your cat will likely need to be sedated.

## Bottom Line

“I don’t recommend home treatment for undiagnosed eye conditions,” says Dr. Kern. “Some of the causes can progress to painful and/or sight-threatening conditions. And unlike most dogs, cats melodramatically and physically—with claws and teeth—resist application of ocular medications, so it’s worth saving the patient’s ‘kitty minutes’ for treatments that are specifically indicated.” Seeking veterinary care promptly for eye discharge helps ensure you start the right treatment to get your kitty feeling better as soon as possible. ■

## You Should Know

Seek care for eye discharge if:

- ▶▶ The cat also has respiratory signs
- ▶▶ The discharge is purulent (has pus)
- ▶▶ The cat is squinting
- ▶▶ You notice light sensitivity
- ▶▶ The corneas are cloudy or opaque
- ▶▶ Vision is impaired



# Not Eating Can Quickly Escalate

*Inappetence sets the stage for deadly hepatic lipidosis*

**H**epatic lipidosis, or fatty liver disease, is a potentially fatal illness that must be caught early and treated aggressively. The most common liver disease in cats, hepatic lipidosis results from inappetence, a serious lack of appetite. Affected cats usually begin with anorexia that may worsen with vomiting.

During the period of anorexia/inappetence, the liver tries to metabolize stored fats to keep the cat alive, but it rapidly becomes overwhelmed from handling too much fat. After six to seven weeks, untreated cats may die either because their brain stops functioning due to a lack of nutrients or because the liver becomes so overworked that it fails.

“Cats have a notable tendency to accumulate triglycerides in their hepatocytes (liver cells), and when these cells become filled with fat, the liver is unable to function properly. If not rescued promptly from the disease, affected cats don’t just end up with

## Neutering and Obesity

While there is no known correlation between spaying or neutering and the development of hepatic lipidosis, spayed and neutered cats do seem to have a tendency toward obesity. Keep your cat trim and active right from the start.

deformed livers—they die!” says Sharon Center, DVM DACVIM, James Law Professor of Internal Medicine and expert in veterinary liver disease in Cornell’s Department of Clinical Sciences.

The incidence of hepatic lipidosis appears to be highest in obese cats (see “Fat Cats: Obesity Isn’t Fun or Healthy,” December 2017, available at [catwatchnewsletter.com](http://catwatchnewsletter.com)), but even cats of a normal weight and in good health can develop hepatic lipidosis if they go off their food.

Most cats with hepatic lipidosis are middle-aged (6 to 12 years old), but 3-month-old kittens to 25-year-old cats have been diagnosed with the disease. While female cats and diabetic cats have slightly increased risks, there does not seem to be a breed predilection.

### Causes

Hepatic lipidosis can result from

any disease, environmental change, or stressful interaction that causes inappetence. Most cats with hepatic lipidosis (70–90%) have a primary disease involving the liver, although chronic or severe illnesses in any body system can trigger hepatic lipidosis.

The critical tipping point is anorexia or the failure of your cat to eat. When a cat stops eating, the body mobilizes fat stores for nutrition. However, this soon overwhelms the liver so it cannot properly metabolize the fats. Fat builds up in the cells of the liver, resulting in hepatic lipidosis.

Affected cats often become reclusive, says Dr. Center. “They will avoid their food bowl—won’t even go near it—as if they’re scared of it,” she says. “In fact, when they see it, they might move away quickly and just sit there salivating. Also, they may become jaundiced, with a yellowish tinge to the skin in their ears and to their gums.

### Diagnosis

Diagnosing hepatic lipidosis starts with a thorough history that involves a cat not eating or not eating well (yet another reason why free feeding is not ideal in a multi-cat home). Commonly, owners state that cats have not been eating or not been eating well for two weeks and may have dropped up to 25% of their body weight. Don’t wait that long—if your cat has stopped eating for 24 to 36 hours, make a veterinary appointment!

A physical examination typically shows weight loss, jaundice, an enlarged liver, and muscle wasting (cachexia). Jaundice may be noted on the inside of your cat’s ears, gums, and around her eyes. In advanced cases, the skin has a yellow tone, too. Cats may display loss of cognitive function, severe lethargy, marked head/neck ventroflexion (head drops to the ground), and drooling. Severely affected cats also may show



*This pretty cat would be so much happier at a normal weight! But it will take him time to lose that fat. Overreacting to your cat’s weight and starting a too-aggressive weight-loss program can cause hepatic lipidosis. Slow and steady weight loss is the safest plan. If you want to put Fluffy on a diet, discuss a plan with your veterinarian, and consider using Purrfect Weight, an Apple weight loss app designed by the Cornell Feline Health Center that you can download it for free at <http://tiny.cc/CWpurrfect> (there’s no Android version yet).*

## Research Shows Promise

A study from the Netherlands found two potential drugs to help treat hepatic lipidosis in cats. This was an “in vitro” study, so done on lab cultures not with live cats, but two drugs showed some promise: T863 and AICAR. Both medications act on enzymatic processes that might help cats with this condition. Obviously, many more studies need to be done before these drugs can be safely used for cats with hepatic lipidosis.

*Journal of Veterinary Internal Medicine, 11 Dec 2019, 34(1):132-138*

## You Should Know

Common underlying conditions that can result in inappetence and hepatic lipidosis include:

- ▶ Obesity
- ▶ Dental and gum disease
- ▶ Stress (emotional, physical)
- ▶ Chronic or severe illnesses such as cancers, pancreatitis, kidney disease, liver disease, and inflammatory bowel disease

bruising and hemorrhages under the skin. Bloodwork and a urinalysis will commonly be done to evaluate liver function. An abdominal ultrasound can non-invasively suggest hepatic lipidosis via the appearance of the liver.

### Treatment

Treatment focuses on getting the liver back on track with nutritional support in the form of high-quality protein, vitamins, essential amino acids, and electrolytes. Cats with ventroflexion of the neck often require extra electrolytes, such as potassium and phosphate, and thiamine (vitamin B1). Carnitine, an amino acid, may help mobilize fatty acids from the liver.

Nutritional support usually requires an esophageal feeding tube. “While a few

cats can be recovered with an orally fed liquid feline-appropriate diet, if there is resistance to force feeding by oral route, this must be suspended,” says Dr. Center. “Initial treatment may be via a nasogastric tube. Ultimately, in most cats, the optimal route of feeding is via placement of an esophageal feeding tube. These are safe and easily managed by most owners. It is important to only pursue feeding tube placement when the cat is a reasonable candidate for anesthesia, which is usually not the first day of presentation.”

Many cats spend a week to 10 days in the veterinary hospital. Some cats will develop “refeeding syndrome,” which happens when the cat’s body shifts abruptly from a catabolic (starvation) state to the ingestion of a plethora of nutrients, especially carbohydrates. This syndrome is best identified while the cat is in the hospital. Potentially fatal decreases in blood potassium, phosphate, and magnesium can occur, along with a decrease in thiamine. The veterinary clinic will usually start your cat off with small amounts of food, gradually building up. Once your cat is past the critical stage, she should be able to continue treatment at home.

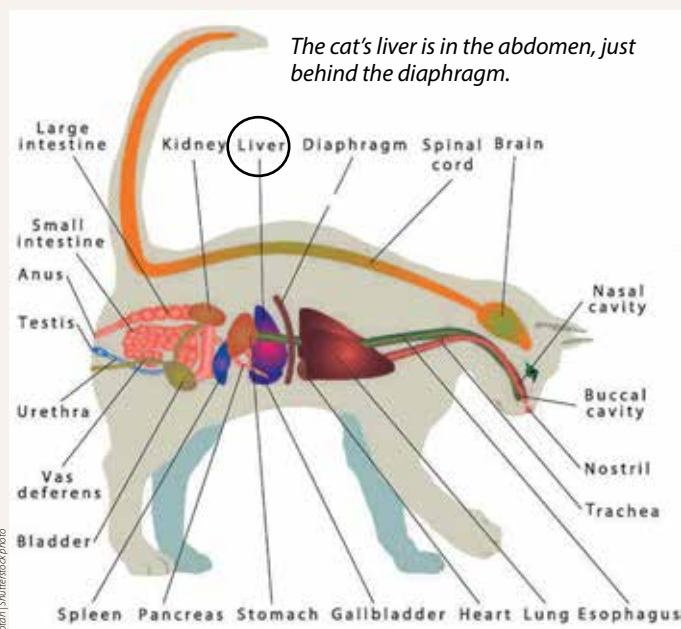
Most owners can be trained to maintain and clean esophagostomy and gastrostomy tubes at home. It is imperative to prevent your cat from interfering with or removing the tube, so bandaging and a collar of some sort are required. Most cats will require



Advanced cases of hepatic lipidosis may show a loss of cognitive function, lethargy, drooping head, and severe drooling.

specialized nutritional therapy for at least a month to restore health to the liver. Your veterinarian will likely prescribe a high-quality protein diet.

Hepatic lipidosis can be fatal, but a decline in total blood bilirubin by 50% within the first seven to 10 days suggests an excellent chance of full recovery. Bilirubin is produced during the breakdown of red blood cells and then filtered through the liver to be excreted. High blood levels of bilirubin indicate liver disease. Luckily, hepatic lipidosis is not usually a recurrent disease. Although it’s an expensive, long process to save a cat with hepatic lipidosis, it is totally worth the effort. ■



## What Does a Liver Do?

The liver is your cat’s second-largest organ (skin is the first). Interestingly, the liver and skin are the only organs that can regenerate after some injuries or illnesses. While no one can live without a liver, your cat can survive on as little as 25 to 30% of her liver (of course, it’s far better if your cat has an intact and healthy liver!).

A healthy liver performs over 500 different functions that help to keep your cat in optimal health. All of the blood flowing from the gastrointestinal tract goes through the liver, which is on the frontline of the metabolism of digested foods. Some nutrients are processed and stored in the liver as glycogen for a rapid source of energy, while some are made into proteins and triglycerides. Bile is manufactured in the liver to help with digestion, and vitamins such as thiamine (B1) may be stored there. Various essential hormones and clotting factors are also produced by the liver; and, as if that weren’t enough, the liver also metabolizes many toxins.

# The Problem with Pica

*A bored or anxious cat can get herself into trouble*

Cats often use seemingly odd ways to cope with stress, such as sucking on fabric (wool is a kitty favorite) or eating bizarre items, like a bread-bag twist tie. Consuming any non-nutritive object is a cause for alarm. While choking is rare, ingesting fabric, string, plastic, or any other non-food item can lead to gastrointestinal tract obstructions, requiring emergency life-saving surgery.

“Pica” is the proper term for the ingestion of abnormal substances. Pica is the medieval Latin name for the magpie, a bird who is known for eating anything. People, dogs, and other animals can also demonstrate pica. In cats, a study from the United Kingdom showed that the most common material cats sucked or chewed on was wool (93%), followed by cotton, man-made fabrics, rubber, plastic, paper, and cardboard.

## Causes of Sucking

Unfortunately, no definitive cause has been found for pica, but there a number early weaning of kittens may be a contributory factor (see sidebar). Many cats show wool-sucking behavior as young as 6 months of age, and most cats that develop it are noted to express the problem by 18 months of age.

Stress, anxiety, and boredom can lead



*Chewing on a blanket looks harmless enough—until you're facing a surgery bill for an intestinal obstruction.*

to a resurgence. Chewing or sucking on objects is believed to release endorphins, which are pain-relieving hormones that lead to warm feelings of well-being and comfort (this is also a reason why some children suck their thumbs). In some anxious cats, chewing behaviors serve as coping mechanisms, with the resulting endorphin rush becoming addictive and develops into an obsessive-compulsive disorder (OCD).

Of course, you should rule out medical reasons for and pica. Gastrointestinal disorders (inflammatory

bowel disease, food allergies), infectious diseases (feline leukemia, feline immunodeficiency virus), kidney disease, pancreatitis, thyroid disorders, and diabetes can all cause pica.

Low-fiber intake may be a cause. Fiber promotes a feeling of fullness. Some cats do better with high-fiber kibble in a separate bowl that they can eat at will. Potted cat grass or catnip can help, too.

## Management Changes

Remove all the items your cat likes to suck on, such as afghans, wool sweaters, scarves, and heavy socks. Offer cat-safe rubber toys scented with fish oil and additional dry cat food. If you choose the latter, make sure that the dry food used is part of your cat's calculated daily caloric intake so you don't cause obesity.

Be aware of what she is doing. If your cat starts to chew or suck on something inappropriate, startle her with a sound, such as a loud tap on a tabletop. The minute she is distracted, get her attention with a treat or toy, and lure her away from the object of her desire. Remove the object, at least temporarily, if possible.

Consider stress. If the behavior is new, look for triggers, such as cat aggression. Work to find solutions, such as separating feuding cats or placing a favorite perch back where it used to be. Feliway, a calming, pheromone-like substance, reduces anxiety levels in some cats and may reduce aggression.

Increase your cat's environmental enrichment. A busy, mentally stimulated cat has less time to participate in compulsive behaviors. An outdoor catio (see January 2020 “The Ins and Outs of Catio,” available at [catwatchnewsletter.com](http://catwatchnewsletter.com)), a cat tree or “kitty condo” that she can crawl up or hide in, and, especially, extra play time with you can help. Spend time with her, tossing walnuts or ping-pong balls for her to chase.

Use bad-tasting, commercially available pet repellents on fabrics to deter chewing. Do not just spray one thing, although her favorite sucking spot is certainly the place to start. Rotate the items sprayed so your cat learns that all fabric tastes bad.

If all else fails, consider working with a veterinary behaviorist. Fluoxetine (Prozac) is a selective serotonin reuptake inhibitor (SSRI) antidepressant that can help with OCD, but it should be used in combination with behavior-modification management techniques. ■

## Triggers: What Research Shows

A genetic predisposition to wool-sucking and -chewing behaviors has been suggested in the Siamese and other Oriental breeds. An August 2015 study of 204 Siamese and Birman cats was conducted through Tufts University Cummings School of Veterinary Medicine. Researchers looked for physical characteristics or environmental triggers that could cause pica (abnormal chewing or sucking on fabric, plastic, metal, or paper). Cats who showed other compulsive behaviors, such as psychogenic licking, were not included. Half of the cats were known to wool-suck, and the other half were not.

All of the affected cats had an intense appetite. Early weaning and a small litter size were correlated with wool sucking in the Birman cats. In Siamese cats, a correlation with health problems was noted.

A September 2017 study from the University of Helsinki looked at over 5,000 cats to see if early weaning (removed from queen before 12 weeks of age) might influence aggressive behaviors and stereotypic /compulsive behaviors. Both aggressive and compulsive behaviors were lower in kittens weaned after 12 weeks of age, with fewer if they were weaned after 14 weeks. Over 40 breeds of cats were included, and breed was not determined to be a factor. The researchers felt that early weaning caused neurobiological changes in brain function, possibly disruptions in cortical basal ganglia circuits and interference with normal dopamine response.



# Trichobezoar Means “Hairball”

*When to be concerned about this common problem*

**H**airballs are, unfortunately, a normal part of being a cat. As your cat grooms herself, the rough barbs on her tongue catch the hair and pull out loose, dead strands. Some of these hairs are then swallowed.

Unfortunately for your cat, the primary structure of hair is the protein keratin, which cannot be digested. Hair that moves through the digestive tract will remain intact and hopefully eventually exit in the stool. Some hair, though, can remain in the stomach and gradually clump together with other hairs. This damp clump of swallowed hair is what we refer to as a hairball.

Hairballs are usually vomited up without incident. According to the Cornell Feline Health Center, “Regurgitated hairballs are variable in size; though usually about an inch long, they can be as long as five inches and an inch thick. The color is mainly that of the cat’s coat, darkened by the color of the animal’s food and various gastric secretions, such as green bile. The ejected matter will typically have an unpleasant odor.”

Hairballs are often mistaken for feces at first glance because they become squished and elongated as they pass through the cat’s esophagus, plus they smell a bit gross. Cats will often make a terrible hacking/gurgling noise that quickly subsides once the stowaway hairs have been expelled. This can happen every week or two and is nothing to be concerned about if your cat is otherwise happy and healthy.

## When to Be Concerned

You should seek veterinary attention if your cat exhibits:

- ▶ Lethargy
- ▶ Inappetence
- ▶ Repeated hacking, coughing, or gagging
- ▶ Unproductive retching or vomiting (repeatedly trying to vomit but nothing comes up)
- ▶ Constipation
- ▶ Diarrhea
- ▶ Distended abdomen
- ▶ Excessive grooming (can indicate stress or skin issues)

While somewhat nonspecific, these signs can indicate potential concerns that



*Your biggest worry is when she can't cough anything up!*

may or may not be related to a hairball. Because of this, your veterinarian will need to narrow down the cause. He or she will start with a physical exam and likely do bloodwork to make sure there is no systemic disease process involved. Radiographs may be done to check for a gastrointestinal obstruction or for asthma, the later especially if the cat is coughing/gagging.

## Obstruction

If a hairball gets too big, it can cause problems for your cat. Hairballs that are too large to exit the stomach through

either the esophagus or intestines are trapped and continue to grow larger until they either start impacting the cat’s ability to eat or cause a blockage. Hairballs can also get stuck in the intestines. Thankfully, these obstructions are rare, but they are serious when they occur and require prompt treatment.

Treatment of obstructions will depend on the location and size of the blockage. For smaller obstructions, especially if the cat is otherwise in reasonably good health, the veterinarian will likely give laxatives to encourage the hairball to pass naturally. Your cat may also be given fluids to improve hydration. For more severe obstructions, surgery may be needed. ■

## Hairball Products

A variety of commercial products claim to prevent hairballs. Many of these are petroleum-based laxatives that grease up your cat’s digestive tract to keep everything moving smoothly. We strongly recommend consulting your veterinarian before starting one of these products to ensure that the product is safe and effective and that you are giving your cat the correct dosage. Some cats may only need a laxative once in a while, while others with chronic hairball or constipation issues may be kept on them long term.

## What You Can Do

**Identify risk factors.** Older cats and longhaired cats are most prone to hairballs; however, for cats of all ages and hair types, shedding season increases the likelihood of hairballs.

**Groom regularly.** Brushing removes a lot of loose, dead hair. Even just a few minutes every day can help, with more thorough groomings during spring shedding season. If your cat hates to be brushed or her coat is too difficult to maintain, a shave-down by a groomer or your veterinarian a couple times a year can help.

**Promote hydration.** Staying hydrated will help keep your cat’s digestive tract running efficiently, including getting any ingested hair out of the body. Pet water fountains can help to encourage cats to drink more, and canned diets contain more moisture.

**Provide plenty of fiber.** Fiber bulks up stool, making it easier to pass and helping keep the colon healthy. A commercial or nutritionist-formulated balanced diet should provide enough fiber for your cat’s needs, but some cats benefit from additional fiber. Cat grass can be a fun source of fiber for your cat (see “Catnip Crazy,” July 2019, at [catwatchnewsletter.com](http://catwatchnewsletter.com)) or you can add a little plain canned pumpkin or psyllium fiber to her food. Hairball formula cat foods have high fiber levels. Consult with your veterinarian before supplementing fiber or switching to a hairball formula to make sure that the changes are appropriate for your cat.

# Vaping and Cat Health

## Concerns about loss of appetite and weight

**Q** My housemate has been smoking the vaping devices the Centers for Disease Control and Prevention (CDC) has recently raised concerns about. Recently, my 8-year-old domestic shorthair cat has lost his appetite and is losing weight. Is there any scientific evidence of any potential negative effects of vaping and cats?

**A** Thanks for getting in touch, and I am very sorry to hear of your cat's problems. It is, of course, not possible for us to diagnose your baby from afar, so we think it's important that you work with your veterinarian to formulate the best diagnostic and treatment plan to address the loss of appetite and body weight you are observing. There are many reasons that a cat may lose his appetite, ranging from dental disease to pancreatitis to cancer, and starting off with a physical examination followed by appropriate screening tests and diagnostic imaging as needed is likely a good place to start in this regard.

With respect to whether the vaping you are referring to may be contributing to your cat's problems, it is difficult to say. To our knowledge, there have not



*We don't know for sure about the effects of vaping and cats, but studies have associated feline lymphoma with smoking.*

been any published control studies of the effects of e-cigarettes on feline health. There has, in fact, even been some controversy regarding the effects of second-hand smoke exposure from regular cigarettes on feline health. A few studies that looked at the association between feline lymphoma and the smoking habits of owners suggested that second hand exposure to cigarette smoke may play a role in the development of lymphoma in cats, but these conclusions have been called into question.

One potential risk that e-cigarettes do pose to cats is nicotine toxicity (chewing tobacco and nicotine-containing gum also carry this risk). The concentration of nicotine in the cartridges commonly used in e-cigarettes can get quite high,

and if a cat were to puncture a cartridge and ingest the vaping liquid, they may very well experience nicotine toxicity. It is unclear whether cats can develop nicotine toxicity by inhaling vaped nicotine, but this is certainly possible if the exposure is significant enough. The signs of nicotine toxicity in cats include hyperactivity followed by lethargy, tremors, incoordination, vomiting, drooling, and seizures. The severity of these signs is usually correlated to the amount of nicotine ingested and symptoms are usually observed within one hour of the ingestion of nicotine.

The prognosis for nicotine intoxication in cats depends upon the dose, with low dose exposure carrying a generally good prognosis and higher dose exposures being associated with a less favorable prognoses.

It is crucial that owners contact a veterinarian immediately if they observe their cat ingest nicotine-containing products so that

stabilizing and supportive care can be provided as quickly as possible. There is no antidote currently available for nicotine intoxication in cats.

While I wish that I has more specific information about the potential effects of vaped nicotine products on cats, I think it's very important that you continue to work closely with your veterinarian to rule out and address other potential causes of the signs you are witnessing in your cat.

In the interim, minimizing his exposure to the vaped products by isolating him from where they are being used and perhaps using an air purifier would be a good idea.

Thanks, best of luck, and please send us an update when you can. ■



*Elizabeth's popular column will be continued by Bruce Kornreich, DVM, PhD, DACVIM, Director of the Cornell Feline Health Center and Editor-in-Chief of*

*CatWatch. You can write to Dr. Kornreich at [catwatcheditor@cornell.edu](mailto:catwatcheditor@cornell.edu) or CatWatch, 535 Connecticut Ave., Norwalk, CT 06854. We welcome digital photos of your cat to consider for use with your question.*

### © HAPPENING NOW...

**Second Chance:** According to [wwlp.com](http://wwlp.com), 23-pound Buddy the cat was unable to defecate. All options had been tried, and euthanasia was being considered to end his suffering. But Dr. Kristen Cormier from Second Chance Animal Services in North Brookfield, Mass., was willing to help. Dr. Cormier performed a subtotal colectomy on the cat, successfully removing 90% of his colon. The procedure is not usually performed in private practice, says the report, but Buddy is doing well.

**No Sale:** The Nassau (Fla.) County Board of Commissioners is considering an ordinance that would ban the commercial sale of dogs, cats, and rabbits, with exceptions for animal shelters, animal welfare organizations, and local breeders with certification, says [news4jax.com](http://news4jax.com). The ordinance is aimed at preventing puppy mills, kitten factories, and rabbit mills in Nassau County. Under the ordinance, the sale of the domestic pets on the side of the road and at flea markets would be prohibited. ■

### Coming Up ...

- ▶ *What Is that Sagging Primordial Pouch?*
- ▶ *Many Dangers of String and Yarn*
- ▶ *Choosing a Good Cat Harness*
- ▶ *Does Your Cat Love You? Let Us Count the Ways*