THE FELINE HEALTH CENTER • CORNELL COLLEGE OF VETERINARY MEDICINE

CatWatch

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

THIS JUST IN

Study on FCGS

Disease may be contagious

A recent study led by Santiago Peralta, Cornell University School of Veterinary Medicine Assistant Professor, Section of Dentistry and Oral Surgery, found that feline chronic gingivostomatitis (FCGS)is more prevalent in shared households and its risk correlates with the number of cohabiting cats. Gingivostomatitis is marked by severe, chronic inflammation of a cat's gums and oral mucosa. It's most common in cats with certain viral diseases, like feline immunodeficiency virus (FIV).

The researchers studied cats diagnosed with FCGS by looking at medical records and phone interviews with the owners. They then compared the data to cats diagnosed with periodontal disease but not FCGS. Of the 76 cats in the study, 36 (47 percent) had FCGS and 40 (53 percent) were controls.

The study concluded that cats with FCGS were more likely to live in shared households and the risk of FCGS correlates with the number of cohabiting cats, supporting the belief that FCGS may be infectious.



YuliaKvgust | Depositphotos

Learn more about FCGS at https://tinyurl.com/FCGS-Cornell ■

INSIDE THIS ISSUE

Mirtazapine for Liver Disease.....2
Acrylic Skull Piece Saves Tabby.....2
Research Finds Two New Feline Viruses.....2
Dangerous Urethral Ruptures.....3
Feline Physical Rehabilitation.....4
What Emergency Clinics See Most.....6
Handling Trichobezoars 7
FIV-Positive Cat Battling Pain 8
Happening Now 8

Cats Prefer to Work for Their Food

We may have made their lives a little too easy

In January, we wrote about the recent American Veterinary Medical Association (AVMA) updated guidelines on feeding cats to make feeding programs more natural, emphasizing a cat's natural desire to hunt. Hunting keeps the cat active, which burns calories and promotes a healthy body weight and lean muscle mass. These five things will help you make feeding time more like a hunt.

1. **Downsize.** Rather than feeding your cat's entire daily ration in one or two feedings, split it into five or six.

2. **Space out meals.** If you can, dole out your cat's mini-meals throughout the day and into the evening. If work keeps you away, try automated feeders or stash servings throughout the house. Use caution with moist food in automated feeders, as it can dry out.

3. **Make your cat hunt.** Hide her mini-meals throughout the house so that she must search for them. Encourage her to be active by putting some on elevated surfaces and multiple floors of the house. If your cat has mobility problems due to age, weight, or illness, take care choosing hiding spots.

4. **Use food puzzle toys.** There are endless options for food puzzles! Just something as simple as putting your cat's food in an egg carton requires her to think about how to access the different kibbles. Treat balls encourage play and exercise. Start with something easy and work up to challenging puzzles. Teaching your cat to use some of the puzzles can be a great bonding activity.

5. **Provide private feeding spaces.** Feed each cat in a separate area, ideally out of sight of other pets. Also keep food and water bowls separate from litterboxes for sanitation purposes.

Trying some of these methods for feeding your cat can help to keep her more active and entertained while you are away during the day. An added bonus is that it puts the responsibility of mealtime on your cat rather than you; instead of meowing for a can of food, your cat will search for a fresh stash. ■



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The hunt provides more benefit than just food.

What You Should Know

Cats like to eat alone. Outdoor cats hunt alone, eating their prey in a safe place. Even indoor cats prefer a safe area to eat, such as in a quiet bedroom, rather than next to a door.

Most of us with multiple cats feed all in a single location. Unless all your cats truly like each other, this is stressful and can cause behavior problems. Your cats all in the same room at dinnertime only means they know the rules required to eat.

To tell if your cats like or are comfortable around each other, watch to see which cat hangs out where most of the time and how their different routines overlap (or don't). You may find that your peaceful, conflict-free household of cats is kept that way because each cat has her own space and avoids the other cats.

Mirtazapine for Liver Disease

Colorado State study shows promising results

Mirtazapine, a tricyclic depressant for humans, has been shown to have appetite stimulant benefits for cats. Since cats who have a decreased appetite can develop life-threatening conditions such as hepatic lipidosis, this medication can have important uses in cats.

A recent study at Colorado State University looked at the use of mirtazapine in cats with liver disease. It has already been established that cats with kidney disease are slower to clear this drug from their systems, but it was not known if this would be true for cats with liver disease as well. Eleven cats with liver disease and 11 control cats were in the study. In addition, liver cells from seven cats who had to be euthanized but were not in the study (three with liver disease and four with other illnesses) were studied to investigate drug metabolism in an *in vitro* (laboratory) situation.

The primary concern was to determine if current dosing protocols were appropriate for cats with liver disease, as such cats comprise a large segment of the cats who might be prescribed this drug. The dosing schedule for cats with kidney failure has been suggested as once every two days instead of once daily. The study suggests a similar change in dosing would be better in cats with liver disease.



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This was a limited study in that the numbers of cats involved are not great and there may be differences in drug metabolism depending on the exact type of liver disease a cat was suffering from. Still, it is a step in the right direction and suggests changes in dosing protocols would be ideal for cats with liver disease. ■

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6272035/

Acrylic Skull Piece Saves Tabby

The prognosis for three brain tumors was grave



BiemanJDD | Deposit Photos

Veterinarians at Washington State University used a 3D printer to manufacturer an acrylic skull for a cat needing surgery to address brain tumors, according to a report in the *Moscow-Pullman Daily News*. The cat, a tabby named Linus, had three tumors removed from the lining of his brain. After the removal of the first two tumors, Linus experienced brain swelling and bleeding, with his brain bulging out of the hole in his skull.

His prognosis was poor at that point, but he recovered extremely well and the decision was made to remove the third tumor. The trick was to find a way to replace the piece of skull that was removed during the first surgery.

"Working from CT scans, Dr. Tom Wilkinson, a professor of radiology at the veterinary hospital, created a 3D replica of Linus's skull and swollen brain and used it as a template to form a new skull out of a surgical acrylic called polymethyl methacrylate," says the report.

Linus is recovering well, but will have to undergo radiation therapy to help prevent the tumors from returning. ■

Research Finds Two New Feline Viruses

Little is known about the transmission or illnesses

An article in *American Veterinarian* says that researchers recently identified two novel viruses in the domestic cat: gammaherpesviruses and feline morbilliviruses. The *Felis catus* gammaherpesvirus 1 (FcaGHV1) was discovered in 2014, and feline morbillivirus was originally found in 2012. It's believed both these newly found strains may be seen in domestic cats worldwide, but little is known about how or if these viruses cause illness. Both viruses are considered subclinical at this time, meaning any disease they may cause does not show severe or visible symptoms. More research is needed, although they aren't believed to be zoonotic (transmissable to people). ■



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Dangerous Urethral Ruptures

With a urethral rupture, the toxic effects of the urine leaking through tissues cause a health crisis

In one large study, slightly over half of the cats that suffered from a urethral rupture had been subjected to direct and intense trauma, primarily by being hit by car and suffering from pelvic injuries. Just under half had experienced a partial rupture while being catheterized for a urinary blockage. Male cats are more commonly afflicted because they are more susceptible to urinary blockages, which may require catheterization, and are more likely to be outside, which increases risk of trauma.

"To definitively diagnosis a urethral rupture, your veterinarian may need to do a specialized x-ray study called retrograde urethography. A radio-opaque dye is injected into the urethra through a catheter while a radiograph is taken. Normally, the dye should pass through the urethra into the urinary bladder. However, if there is a tear in the urethra the dye will be seen leaking into the pelvic canal or the abdomen (see images). If your cat has abdominal trauma and requires surgery, a rupture may be noted during the surgery," says James Flanders DVM DACVS, Associate Professor of Small Animal Surgery at the Cornell University School of Veterinary Medicine.

Symptoms of a Urethral Rupture

- Lethargy and weakness
- Possible collapse
- Straining to urinate but passing little or no urine

Treatment

Luckily, urethral tissues tend to heal rapidly—possibly as fast as five days. If urine can be diverted, so it is not in the healing area and urethral mucosal tissues are mostly intact, then even deep tears can heal in two to three weeks. If the urethra is torn in half, there is a greater risk of strictures developing while healing. This is related to the presence of suture material and scarring as the incision heals.

Cats with partial tears may be treated with just an indwelling urinary catheter, which keeps the urethra from scarring down and allows urine to flow freely out of the body. In many cases, a catheter can be placed from outside to inside via the penis or vulva.

With a full rupture, however, a catheter may need to be placed from inside to outside via the bladder. An indwelling catheter needs to remain in place until the tissues have healed, usually from five to 14 days. The catheter allows urine to flow freely while protecting the tissues and preventing urine from leaking into other tissues around the rupture.

Meanwhile, the ruptured and damaged tissues have a template to heal around, thus reducing the risk of stricture. Your cat will need to wear an Elizabethan collar (a cone-shaped collar that stops the cat from reaching around himself) to prevent him from removing the catheter prematurely.

Depending on where the rupture occurred, a perineal urethrostomy, with removal of the distal urethra and the penis, may be required. These cases often are associated with urinary blockage, and the surgery may be recommended even without a urethral rupture to prevent recurrence of the blockage.

A tube cystostomy may be done as a temporary measure. "In this surgery, your veterinarian inserts a urinary catheter through the abdominal wall and into the urinary bladder to divert urine safely out of your cat's body while the urethral rupture heals," says Dr. Flanders.

This is more likely to be required with a full rupture and a surgical repair. In cats with extensive pelvic trauma, a cystostomy tube may allow for urine passage while more pressing injuries are treated.

Prognosis

The prognosis for cats recovering from urethral rupture is often affected more by the additional injuries, such as pelvic fractures, than the urethral rupture itself. Urine leakage into tissues can cause cellulitis that requires treatment as well. Iatrogenic injuries (caused by catheterization procedures for urinary blockage) tend to be partial ruptures and generally have a better prognosis than traumatic ruptures. ■

What You Can Do

Prevention of urethral obstructions/ruptures

- Keep your cat indoors
- Encourage drinking
- Feed at least some canned food
- Consider adding water to dry kibble
- Check the litterbox daily
- Report any decrease in urine to your veterinarian



The star marks the bladder. The long arrows indicate the course of the urethra.



In this x-ray, the long arrows indicate urethral tears.

Photos courtesy of James Flanders, DVM, Cornell School of Veterinary Medicine

Feline Physical Rehabilitation

No, we're not joking—cats benefit as much as dogs

The days of hearing, "It's just a cat," are thankfully fading fast. Owners are increasingly more attuned to behavioral and physical changes in their cats that indicate injury or illness, and more enthusiastic about pursuing diagnostics and treatments to achieve the best possible outcome.

Physical rehabilitation can restore your cat to pain-free mobility. The outcome for each cat depends on the severity of the condition or injury, the treatments provided, and the compliance of both the patient and owner. Several modalities and exercises can be done in-hospital by members of the veterinary team, but most rehab programs include exercises and lifestyle changes for you to do at home to help your cat progress.

If your cat is in rehab for weight issues, think of it as a kitty gym membership. You will be given exercises and activities to do at home with your cat, plus dietary guidelines to promote safe, controlled weight loss.

When Rehab Is Needed

Rehabilitation is becoming a mainstay in the treatment of orthopedic injuries and conditions in dogs, and the same principles apply to cats. A few conditions and injuries that benefit from a rehab program include:

- Fractures
- Patella luxation
- Corrective surgery for hip dysplasia or trauma
- Intervertebral disc disease
- Cruciate ligament tears
- Arthritis
- Obesity

"A very common finding is pain in the lower back. Many older cats do not like to be touched here," says Christopher W. Frye, DVM, ACVSMR, CVA, Assistant Clinical Professor of Sports Medicine and Rehabilitation at the Cornell University School of Veterinary Medicine. "Cats in general with arthritis often do not jump as well as they used to and become less active. Cats also can get luxating (displaced) knee caps, cruciate ligament disease in their knee (similar to people), hip dysplasia, slipped discs, and more. Many of these issues lead to osteoarthritis," he explains.



Physical rehabilitation can be helpful after surgery for a broken leg.

pyotr021 | Depositphotos

"Cats are unique in their ability to conceal disease; I am sure part of their super power in that regard is to avoid sending signals to potential predators that they are injured or sick," says Dr. Frye. Traumatic injuries are the easiest for owners and veterinarians to see and diagnose, as the cat goes from being happy and active to acutely injured. A cat who has been hit by car or fallen from a window and hurt himself is likely to be brought to the veterinary clinic quickly. At that point, a diagnosis can be made, and any necessary surgeries performed.

Chronic joint and mobility problems are difficult to detect because our feline friends prefer to hide signs of discomfort. While some cats with arthritis or other joint problems may develop a limp, more often owners notice that their cats are hiding more or have stopped jumping up to favorite perches like a windowsill. Some cats may have trouble getting in and out of tall litterboxes and start having accidents on the floor, and others may avoid going up or down stairs. A painful cat may become cranky with humans and other pets in the household that he previously got along with.

Modalities

Therapeutic modalities limit the inflammatory process and promote healing and pain relief. Those commonly used in animal physical rehabilitation include:

Heat. Applying heat decreases pain and muscle spasms. Heat increases circulation (to reduce edema and promote healing by increasing the supply of oxygen and nutrients to the injured tissues) and tissue extensibility to make stretching and other exercise easier and more comfortable. Heat should not be used for acute injuries because it can make the existing inflammation worse, but it works well for chronic injuries and for warming up a joint before exercise.

Cryotherapy. Applying a cold pack to an injured area relieves pain and reduces inflammation. Icing is often used after exercises to prevent inflammation and the resulting discomfort.

Therapeutic laser. Laser light stimulates natural healing in the injured cells, and is believed to decrease inflammation, increase circulation, and promote pain relief and accelerated healing. Laser can be used immediately after surgery and throughout the healing process, and some owners and practitioners have had success using laser to provide pain relief for chronic injuries.

Therapeutic ultrasound. Sound waves pass through the injured tissues, warming them up and promoting circulation, tissue extensibility, and pain relief. Ultrasound also alters the permeability of cell membranes, which can promote wound healing. These treatments are done in the veterinary hospital.

Electrical stimulation (E-stim). Gel pads are placed on the cat's skin to allow an electrical current to pass through. Depending on the settings

Therapy Rules and Restrictions

While healing from an orthopedic injury or surgery, your cat will probably have exercise restrictions such as no running, jumping, or rough play. To enforce these rules, you must confine your cat in some way, either limiting him to a small room that doesn't have furniture he can jump on or by keeping him in a large dog crate. These restrictions can be frustrating for both cat and owner, but they are important to prevent him from doing too much too soon. For example, jumping right after a broken leg has been repaired could damage any healing that has occurred or even compromise the repair. Orthopedic surgeries are expensive and traumatic enough as it is—no one wants to have to do a second one to re-do the first. One of the upsides to keeping your cat confined is that he will appreciate therapy sessions even more, as they give him a chance to interact with you and do something fun!

used, e-stim can be used to provide pain relief or to cause muscles to contract to prevent atrophy. It also increases circulation and decreases muscle spasms. E-stim is usually done in the veterinary hospital, but for extremely painful cats, the veterinarian may send home a TENS (transcutaneous electrical nerve stimulation) unit to use at home for pain relief.

Targeted Pulsed Electro-Magnetic Field (tPEMF). These devices use magnetic fields to induce an electrical current in the tissues, which leads to a cascade of chemical processes that produces nitric oxide, an anti-inflammatory molecule. One of the benefits of tPEMF devices is that they work through bandages and can be easily used at home.

Cats usually tolerate therapeutic modalities well, especially since most of the therapies feel warm or do not induce any sensation at all. Cryotherapy may take some creativity and patience on your part, however. Forcing a cat to sit still for a treatment is counterproductive and will cause him to be more resistant the next time around, so it may be necessary to take breaks and work up to full treatment times. If your cat is intolerant of a particular modality, your rehab team should focus on therapies he accepts.

Therapeutic Exercise

Therapeutic exercise is the backbone of rehabilitation, done both in-hospital during appointments and by owners at home. Passive range of motion (PROM) is commonly used for a wide range of conditions and involves gently guiding your cat's joints through flexion and extension. PROM is especially important if the cat is not using a leg, as limbs that are not being used quickly lose muscle tone and can experience contracture. PROM keeps the joint moving, and allows both you and your cat's rehab team to evaluate any changes in range of motion.

Other exercises focus on active range of motion and/or strengthening. For example, stepping over cavaletti (row of small jumps) encourages joint flexion, and walking up ramps and stairs encourages hip and stifle extension. Standing on an unstable surface, such as a couch cushion or air mattress, engages your cat's core muscles and helps with muscle strengthening. The exact exercises prescribed will vary based on your cat's injury, and difficulty will be increased over time.

Getting your cat to do his exercises may take some creativity. Dr. Frye recommends, "Some cats are food motivated and we use treats to get them to perform certain tasks or activities that target range of motion, strength, spatial awareness, and more. Other cats will follow a laser light or even perform tasks out of play or love. Sometimes I think cats are a lot like people in that you have to convince them more strongly to perform their physical therapy."

PROM can usually be done easily while your cat is resting in your lap. If he gets up and leaves, you can resume after a break. For more active exercises, use treats and toys as motivators, or take advantage of behaviors your cat already does. For example, if he has a favorite napping spot, you can place objects between him and his bed so that he has to step over them to get there. Always try to quit while you are ahead and your cat is still actively participating or at least tolerating you. Breaking exercise sessions into small bits each day will keep your cat happier and make your job easier.



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If your cat no longer enjoys her favorite perch, physical therapy may restore her mobility.

And, yes, cats can exercise on an underwater treadmill! Despite the common belief that cats hate water, many tolerate it quite well and may even come to enjoy it. Introduce it gradually, with plenty of rewards and praise for your cat.

Worth the Effort

For arthritis and range-of-motion problems in your cat, learning to do physical therapy/rehabilitation can mean many more years of a happy, playful cat.

While it may take some extra time out of your already busy day, the rewards will far outweigh the effort. Discuss therapy options with your veterinarian. ■

Limb Contracture

While many cats do well with three functional legs, four is obviously ideal. When a cat injures a leg, he may not use it. This quickly leads to muscle atrophy (loss) and joint contracture. Contracture is when a leg or joint is held in a flexed position for long enough that it becomes unable to extend again. Both atrophy and contracture happen more quickly than they can be reversed, and the best-case scenario is to prevent them from happening altogether by using rehab exercises and controlled activity.



What Emergency Clinics See Most

Serious illnesses that require immediate veterinary care

Emergency clinics and urgent-care after hours at regular veterinary clinics are on the rise for good reason: They save lives. But they are more expensive, and they don't take appointments, which sometimes means a long wait. In March, we talked about common symptoms of serious illness in cats and when they warrant a veterinary emergency. In this issue, we discuss common metabolic and systemic diseases and when they constitute an emergency.



Byelikova | Depositphotos

The availability of area emergency clinics has dramatically improved feline veterinary care.

Respiratory Distress

Being able to see your cat breathe from across the room is often cause for concern. A normal respiratory rate for a cat is 12 to 36 breaths per minute. Anything faster or labored is a problem.

Asthma is frequently seen in young to middle-aged cats. Symptoms include a history of coughing and acute onset of difficulty breathing. The coughing may be misconstrued as hacking up a hairball, so the early clinical signs are often missed. An asthma attack, as in humans, can come on quickly. Your cat may exhibit open-mouthed breathing, heaving sides, and distress. This is an emergency.

If your veterinarian suspects an asthma attack, the first steps in treatment are usually sedation and oxygen therapy. Treatment approaches vary, but may include bronchodilators that are inhaled or injected, steroids to decrease inflammation, and hospitalization for monitoring and oxygen therapy.

Heart Failure

Heart failure symptoms usually include an elevated respiratory rate and effort, lethargy, decreased appetite, and exercise intolerance. Unlike in dogs, cats with heart disease very rarely cough. Heart failure can occur in any age cat. The most common heart disease in cats is hypertrophic cardiomyopathy, characterized by abnormal thickening of the heart muscle.

Initial treatment involves the use of diuretics to encourage urination and decrease the fluid-overloaded heart, provision of an oxygen-enriched environment, and in some cases, the use of other drugs to dilate blood vessels and/or improve the contractility of the heart.

A cat in respiratory distress should be seen by the veterinarian immediately. Cats in respiratory distress can decompensate rapidly and must be handled gently and with minimal stress.

It can be difficult to distinguish heart failure from asthma on a physical exam. Your veterinarian will use clues like presence of a heart murmur, age, previous symptoms, and body temperature to determine the most likely cause and usually will start treatment before attempting to obtain x-rays and/or an echocardiogram. These diagnostic tests can be detrimental to a cat in respiratory distress, so they are not usually attempted until the cat is calm and stabilized.

Blood Clot

Feline aortic thromboembolism, aka "blood clots" that form in the heart, often develop in cats with underlying, often undetected, heart disease. When blood clots form in the heart, they will often dislodge and enter the bloodstream where they may cause a blockage of blood supply, resulting in clinical signs including hind limb or forelimb paralysis/limping, vocalization, and apparent discomfort.

Blood clots most commonly become lodged in one of two places—either where the aorta breaks into the iliac arteries that supply the hind limbs or the blood vessels supplying the right forelimb. Symptoms are most commonly sudden in onset. Emergency evaluation is needed to relieve your cat's pain and distress. Unfortunately, there are no effective "clot-busting" drugs for cats, so management is mostly aimed at preventing further clot formation, controlling symptoms associated with the blockage of blood supply and heart failure (if present), and managing pain.

Straining/Inability to Urinate

Feline urinary obstruction (FUO) of cats is a common, poorly understood occurrence. The clinical signs are unmistakable: straining to urinate, vocalizing, vomiting, lying in the litterbox, bloody urine, and lack of urine production. Many cats have crystals in their urine, and some form actual bladder stones. Stress, subclinical dehydration, and the composition of the diet are thought to predispose to this condition.

FUO is a life-threatening condition. Without the ability to urinate, the bladder can fill to capacity and ultimately rupture. This retention of urine can lead to back-pressure on the kidneys and kidney damage. Potassium, normally excreted by the kidney, can rise to dangerous levels in the blood, predisposing to heart arrhythmias and death.

Your veterinarian will usually administer pain medications, intravenous (IV) fluids, check blood values, place a urinary catheter, and empty your cat's bladder ASAP. Treatment often requires several days in the hospital for fluid therapy and close monitoring of the affected cat's ability to urinate on his own.

Fever of Unknown Origin

This is the "other" FUO of cats—a fever without a known cause. It may be difficult to tell if your cat has a fever, but hot ear tips and lethargy are symptoms. Fever is a non-specific sign, and high fevers can be associated with many feline illnesses, such as upper respiratory tract infections, feline infectious peritonitis (FIP), feline leukemia virus, and various infectious diseases. Cats with fevers should be evaluated by a veterinarian promptly.

Bottom Line

Emergency clinics are wonderful resources, but owners should understand that they are usually more expensive than their general practitioner and may be associated with long waits, just as with human emergency rooms. Owners' patience is often rewarded, though, as these unique facilities can mean the difference between life and death for a sick or injured cat.■

Handling Trichobezoars

Better known as hairballs, these nuisances can be a symptom of underlying issues

Many cat lovers know the awful feeling of waking up from a deep sleep to the sound of their cat gagging and retching to throw up a hairball or stepping on a fresh hairball on the carpet with bare feet. Not pleasant! While most hairballs are a nuisance, some can signal or cause serious health problems.

A hairball, also called a trichobezoar, is a clump of hair wadded up in a cat's gastrointestinal tract. They are usually tube-shaped (from traveling up the narrow esophagus) and an inch or two long. Dried out, they can look like feces.

Hair is mainly keratin, which cats cannot digest. Most hair simply passes through the digestive tract and into feces. Some larger amounts, however, can accumulate in the stomach, especially in a cat with gastric motility abnormalities.

Cats spend about 25 percent of their waking hours grooming, licking, and chewing at hair. More hair is consumed during shedding times and after a bath (if not dried and combed thoroughly). Longhair cats like Persians and Maine Coon Cats swallow even more hair.

One survey found that although slightly over 70 percent of all shorthair cats never threw up hairballs, 55 percent of longhair cats threw up hairballs more than twice a year. So, if your cat is throwing up a hairball more than a couple of times a year, you should discuss this with your veterinarian to be sure she's healthy.

Normal or Not?

Hairballs can cause obstructions, both at the pylorus (exit from the stomach) or in the small intestine. Less commonly, hairballs may cause obstructions in the esophagus when a cat unsuccessfully tries to vomit a large hairball. Occasionally, large hairballs may be palpated in the stomach. In one study, about 36 percent of the foreign bodies in the GI tracts of cats were found to be hairballs.

If a hairball is causing an obstruction, your cat may stop eating. Poor GI absorption of nutrients and possible dehydration can occur secondary to a hairball problem. Left in the stomach long enough to build up to a large size, hairballs can cause gastric retention syndrome—preventing food and water from passing into the intestines. If present long enough, damage may be done to the nerves that regulate gastric emptying.



Aksipol | Depositphotos

He may look more like a lion than a cat when you finish, but a matted cat may need clipping.

Diagnosis

Diagnosis depends heavily on the history you can provide. Bring a hairball sample to your veterinarian, if you can. Your veterinarian may suspect a hairball in the stomach by palpation, but further diagnostics—endoscopy, a radiograph (possibly with a dye study), or an ultrasound—will be needed. Firm masses may require surgery.

Prevention

Groom your cat weekly, or daily for long-haired cats. Most cats prefer brushes like slickers, which have metal teeth that slant backward, somewhat mimicking a cat's tongue. These brushes are excellent for shorthair cats. For a longhair cat, you may need to use a comb on the long feathers and back hair. Matted areas may require a mat splitter or even a shave with clippers, at least in those areas. Mats can be painful, as they can pull at the skin. Removing them requires patience and skill to avoid cutting or injuring your cat.

If you own a long hair cat who can't be convinced that grooming is in her best interest—despite your efforts to associate good things like treats with grooming—you may need to have your cat professionally groomed. Some cats will allow a groomer to shave them while others need sedation. Generally, twice a year will keep your cat comfortable if she needs to be clipped by a professional groomer.

Diet Choices

Special "hairball diets" incorporate extra fiber to move the hairball through the gastrointestinal tract. The goal is increased gastric emptying and motility. Your veterinarian may prescribe one of these diets if your cat has recurring hairball problems. Adding some plain (no spices!) canned pumpkin to wet food may help cats with only occasional hairball buildups. Start small, then work up to a half to a full teaspoon a day.

Hairball medications are lubricants designed to help any developing hairballs slide through. Because these have oils, we suggest you use veterinary formulated preparations that will replace any fat-soluble vitamins such as vitamin A that your cat may also lose from these treatments. Plain petroleum jelly may cause problems for your cat if frequently given orally, and oral mineral oil administration should be avoided due to the possibility of it being inhaled by the cat, which can result in lipoid pneumonia.

Your veterinarian may also suggest a prescription medication such as metoclopramide, or off label use of a drug called cisapride, to enhance gastric and intestinal motility. ■

What You Should Know

If your cat throws up an abnormal amount of hairballs, you should make a veterinary appointment. This may signal an illness, such as:

- Skin disease
- External parasites
- Stress
- Inflammatory bowel disease
- Intestinal motility problems
- Dietary intolerances
- Hyperesthesia syndrome
- Obstruction
- Gastric Retention Syndrome

FIV-Positive Cat Battling Pain

Manage this with proactive veterinary care

Q I recently took a three-year-old male domestic short-haired cat that has been living outside on my property to the veterinarian to get him fixed and whatever shots necessary. I was informed that he is feline leukemia negative, but he is infected with feline immunodeficiency virus (FIV). Is there anything I can do to make his life as good and long as possible? He seems fine most of the time, but he sometimes appears uncomfortable.



qMotan | Deposit Photos

FIV-positive cats can live with FIV-negative cats, as long as they get along well.

A Thanks for getting in touch and for your obvious good care of this boy. I completely understand your concern, but let's start with a brief review of FIV.

FIV is a retrovirus—meaning its genes are coded by ribonucleic acids (RNAs) rather than deoxyribonucleic acids (DNAs). It is endemic in domestic cat populations worldwide and transmitted primarily by bite wounds that may occur during conflicts between cats. This is why many outdoor cats, which are constantly vying for resources, resulting in aggressive interactions among them, become infected.

Once infected, a cat is infected for life and can serve as a source of infection for other susceptible cats. The virus does not remain infective for long outside of a cat's body and is susceptible to virtually all environmental disinfectants.

FIV shares many properties with human immunodeficiency virus (HIV), although it is not transmissible to people or to any animal species other than cats. As their names imply, both HIV and FIV can cause immunodeficiency in infected individuals, making them prone to a variety of infectious diseases caused by other viruses, bacteria, and fungi.

FIV can also cause gingivostomatitis (inflammation of the gums/oral cavity), neurological disorders, and certain types of cancer. It's important to note, though, that some FIV-infected cats will live as long as cats that are not infected and will never show signs of disease. For this and other reasons, cats should never be euthanized based solely upon a diagnosis of FIV infection.

FIV is diagnosed with a test called an enzyme-linked immunosorbent assay (ELISA), which looks for antibodies to the virus in the cat's blood. It is important to point out that ELISA tests that are commonly used to measure FIV antibodies cannot reliably distinguish between those that occur as a result of the FIV infection and those that are induced by vaccination against FIV (this vaccine is no longer available in the U.S.). For this reason, knowing whether a cat was previously vaccinated against FIV is vital in interpreting the tests that are most commonly used to screen for FIV. Cases in which FIV is suspected based upon ELISA tests can be confirmed by a Western blot test, which demonstrates specific viral proteins in the blood.

If a cat does show clinical signs of infection, they're most commonly from secondary infections and may include gingivostomatitis, chronic nasal discharge, lethargy, weight loss, and swelling of lymph nodes.

The management of cats infected with FIV involves proactive veterinary care, with regular checkups and aggressive therapy to address any health issues that arise. FIV-positive cats can be housed with FIV-negative cats as long as they are socially compatible. Aggressive interactions among FIV-positive cats and FIV-negative cats can result in the latter being infected with the virus, so any aggression should prompt separate housing for FIV-infected cats and those cats with which they do not get along.

There is no cure for FIV, but it's important to reiterate that cats can live with this infection for a very long time with appropriate management. It's also important to point out that FIV-positive cats that are allowed to roam outside freely serve as sources of infection for other cats, so cats that are diagnosed with this viral infection should not be allowed outdoors.

I hope this is helpful. You can find out more about FIV by visiting the Cornell Feline Health Center's website at: https://www.vet.cornell.edu/departments-centers-and-institutes/cornell-feline-health-center/health-information/feline-health-topics/feline-immunodeficiency-virus

Best of luck, and please keep in touch.

All my best,
Elizabeth



Elizabeth works with the Cornell Feline Health Center to provide answers on this page (vet.cornell.edu/fhc/). Write to her at catwatcheditor@cornell.edu.

Coming Up ...

- *Feline Urine Crystals*
- *Working with Your Cat's Whiskers*
- *Behavior: What's with the Wool Sucking*
- *Controlling Pain in Your Cat*

HAPPENING NOW...

Smuggling - A 45-year-old Singapore man was arrested for trying to smuggle four kittens past immigration, according to *Channel NewsAsia*. Security noticed the man's pants were "meowing." He faces a possible fine and one year in prison.

Better Cities for Pets - Mars Petcare developed a program to ensure we can always find pet friendly places to live. The program certifies cities that are deemed pet friendly, based on an assessment of shelters, homes, parks, and businesses. Cities already certified include Washington (DC), Fort Worth (TX), Richmond (VA), and St. Petersburg (FL). Learn more at bettercitiesforpets.com to see if your city would qualify.



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PACT Act - If passed, House bill HR1494, the Preventing Animal Cruelty and Torture (PACT) Act, will make any act of animal cruelty a felony, regardless of what state it occurs in.■