



THIS JUST IN

Million Cat Challenge

Maddie's Fund gives over \$2.5 million to save cats in shelters

Maddie's Fund is granting \$2,580,741 to support the Million Cat Challenge as it expands its lifesaving work in shelters across North America. The Million Cat Challenge is a campaign to save the lives of one million shelter cats and it met its goal one year early. They are now focusing on communities where cats are still at risk to make lifesaving the norm across shelters.



graphica/DepositPhotos

"One of the great benefits of The Million Cat Challenge was that it taught us how much progress was truly possible. That inspires us to aim even higher, not just for cats but for all animals in shelters," said Challenge co-founder Dr. Kate Hurley of the UC Davis Koret Shelter Medicine Program. "Thanks to Maddie, we look forward to saving even more lives during the next phase."

Maddie's Fund is a family foundation created in 1994 by Workday co-founder Dave Duffield and his wife, Cheryl, who have endowed the Foundation with more than \$300 million. Maddie's Fund was created to fulfill a promise to an inspirational dog and invests its resources to create a no-kill nation where every dog and cat is guaranteed a healthy home or habitat. ■

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Feral Cats Rest Most of the Day

Domestic cats may actually be more active, shows a recent study

If you've used a webcam to keep an eye on your cat while you were at work, chances are most of the footage shows your cat snoozes away in various locations. If you felt bad about her "boring" life, think again.



kontantin/DepositPhotos

A video-camera behavioral study watched 26 feral cats who had gone through a TNR (Trap/Neuter/Release) program and were returned to their home on an island off the coast of the southeastern United States. Almost 90 percent of the time,

the cats were resting or asleep. Nine percent of the time was spent roaming around. The remaining 1 percent was split between eating and drinking at the feeding stations or hunting. Encounters with wildlife also included

some interactions with non-prey species such as raccoons, deer, vultures, and opossums. Over 645 hours of video were evaluated. ■

<https://www.sciencedirect.com/science/article/pii/S0168159118300340>

5 THINGS

Five Tips for Travel with Your Cat

For cats who must travel with you, consider these safety thoughts

- 1 Restraint and identification.** There are many safe crates that will both confine and help protect your cat in case of a crash. Even if your cat doesn't wear one at home, consider adding a collar with your name and phone number embedded or tags to identify your cat. Microchipping is even better.
- 2 Consider sedation or other means of calming if your cat is not a happy traveler.** This may mean a prescription medication from your veterinarian, or simply using a pet pheromone or aromatherapy preparation designed for cats. Always discuss options with your veterinarian before trying.
- 3 Plan on packing food and water for your cat.** Cats do best with their usual routine and normal diet. Add in an extra day or two of food, in case of delays.
- 4 Routine is important.** Try to keep your cat's normal schedule as much as possible. That means mealtimes at the usual time, with plenty of time to use the litter box. Remember that your cat isn't going to understand any time-zone changes, so you may need to adjust for that.
- 5 Be realistic.** Most cats prefer to stay at home with a pet sitter instead of gallivanting cross country. That said, there are adventure cats, and if that's yours, be prepared to ensure your cat's safety. ■



Amosel/DepositPhotos

Cats Do Not Always Land on Their Feet

Even if they do, the chance of an injury is high

Cats do an amazing job landing on their feet, but only when they have time to re-orient themselves. Cats in free fall immediately go about righting themselves in a race against the clock. In other words, if the fall is high enough, they may have time to get upright. Cats right themselves from front to back, righting the head and front feet then the back feet.

Cats are able to rotate their supple spines more than many other animals and can twist their bodies to a much greater extent. Cats' vertebrae are flexibly connected and have especially elastic cushioning disks between them. This spine allows cats to perform their elegant and graceful acrobatic feats.

However, they do get injured and, of course, the higher the drop, the higher the chance of them getting hurt. One study that analyzed data from incidents of cats falling found 90 percent of cats studied suffered chest trauma, including dangerous bruises on their lungs or a collapsed lung. Some cats suffered facial trauma (57 percent), broken limbs (39 percent), and dental fractures (17 percent), among other injuries. Nearly four in 10 needed emergency life-sustaining treatment. Any cat who has sustained a fall from a high perch should be examined by a veterinarian. ■



BelvoirMedia/Deposit Photos

CatWatch Earns 2017 Writing Awards

The Cat Writers' Association Awards have us purring

The Cat Writers' Association's mission is to promote professionalism among people who write about and photograph cats and improve the quality of cat information.

To that end, they host an annual awards contest to honor outstanding writers. We are delighted to have earned two special awards, three Muse Medallion awards, and four certificates of excellence for our work in 2017.

Deb M. Eldredge, DVM, our technical editor, earned the **Hartz Every Day Chewable Vitamin Award** for her article, "Senior Cats Need Your Attention." The judge commented, "I found the article to be very informative and it is so important to help our felines live longer. Felines can live to be a ripe old age if we are aware of what we can do to help them get there. In fact, I'd like to send this article to our feline adopters on their pet's ninth or tenth birthday."

Dr. Eldredge also captured the **Hartz Glamour-Puss Award** for "Take Charge of Your Cat's Dental Health." The judge stated, "This article was extremely well written and informational and reaches a high standard of excellence. The writer provided practical steps for pet owners on what they can do."

In the **Awards of Excellence** category, "each entry was independently judged by three professional CWA members. Winning a Certificate of Excellence means that the average of those three judges' scores for the entry is 90 or above." We are honored to have earned four awards:

In **Newsletter Article Health & General Care**, Dr. Eldredge earned an Award of Excellence for each of these three *CatWatch* articles: "Take Charge of your Cat's Dental Health," "Senior Cats Need Your Attention," and "Halitosis in Cats."

Veterinary technician and writer Kate Eldredge earned an **Award of Excellence** for "Traveling with Your Cat."

All contestants who earned an Award of Excellence move to the **Muse Medallion** category, where we earned three awards:

Newsletter National Circulation: *CatWatch*

Newsletter Article: Health & General Care: Deb M. Eldredge, DVM, "Take Charge of Your Cat's Dental" Health

Newsletter Article: Behavior & Training: Kate Eldredge, "Teach Your Cat to Like her Carrier."

Each of these articles is available at catwatchnewsletter.com, and access to the articles is free with your paid subscription. ■



CatWatch

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Tilting Heads and Drunken Walks

Signs of vestibular syndrome can be unsettling

Normally your cat is an amazing athlete. She can do flips and land right side up, even after a tumble from a tree or window, and can leap from floor to countertop in just one bound. But when vestibular problems strike, that same cat walks like the proverbial drunken sailor.

Her head may be tilted to one side. She may move in circles, even getting stuck in corners. A close look might reveal her eyes showing nystagmus, which is a rapid side-to-side movement. For the first 24 to 48 hours, your cat may roll or even appear unable to move at all. Generally, the rolling is under control quickly, though other signs take longer to resolve.

Think how you feel when you are dizzy. The world seems to be tilting, you feel a bit nauseous, and you may be afraid to even try to move. That is how your cat likely feels when she has vestibular syndrome.

Cause Unknown

Vestibular signs can be related to problems in one of two different areas. One is the inner ear where fluid levels in the cochlea signal where your cat's body should be in relation to the ground. The other area is the medulla, which is a part of the brain. The two systems work together to help your cat orient properly.

Marnie FitzMaurice, VMD, PhD, Lecturer and Director of Veterinary Curriculum at Cornell University's College of Veterinary Medicine and a former consultant at the Cornell Feline Health Center, says, "The vestibular apparatus tells your cat whether her head is motionless or moving and, if the head is moving, which way it is moving. A cat's sense of balance is normally maintained because the system also compensates for changes in position. If your cat turns one way or another, a signal is automatically sent to the muscles on one side of her body to adjust for the change in position, thus preventing her from tipping over."

Vestibular problems can show up in cats of any age and both males and females can be affected. Siamese, Tonkinese, Burmese, and Persian kittens may be born with a vestibular condition



Vestibular problems can occur in any age cat, including kittens, like this healthy pair.

and owners may notice a lot of rolling and poor movement in affected kittens. This problem usually will not improve. Although it is not believed to be painful, it may result in a poor quality of life for the cat.

For healthy young adult cats, many veterinarians report an increase in vestibular problems in July and August, which suggests an environmental influence. So far, no cause has been identified, though insect activity at the time and blooming plants have all been considered. The migration of *Cuterebra* larvae has been considered a possible cause (see sidebar).

Cats of any age may develop an inner or middle ear infection. Bacteria, yeast, or ear mites can all cause an ear infection, with resulting inflammation that can upset the delicate vestibular apparatus. Nasopharyngeal polyps (see February 2018 issue, available at catwatchnewsletter.com) can also put pressure on nerves in the area and cause some vestibular signs.

Head trauma, such as may occur when a cat is hit by a car, can damage sensitive tissues. This may lead to some permanent damage, such as a residual head tilt. Luckily, most cats adjust to such a defect. Some medications, such as the aminoglycoside class of antibiotics, can also cause vestibular signs in cats.

In older cats, cancer must be considered. If the vestibular signs are

due to a growth, they won't resolve with just symptomatic care. The cancer will commonly continue to push on the brain centers for balance or on the inner ear.

Diagnosis and Treatment

Diagnosing a vestibular problem is often a case of "rule outs." A careful history is taken. Your veterinarian will do a thorough physical examination, looking for any sign of ear infection. He or she will check for the presence of a nasopharyngeal polyp (this procedure may require sedation). Your cat will receive a neurologic exam that looks for other deficits that might narrow down the cause of the balance problem. An MRI or CT scan may be recommended to look for any brain malignancy. Most cases end up being classified as "idiopathic," which means of unknown cause.

Treatment for a cat with idiopathic vestibular signs is mostly supportive care. An obvious cause such as an ear infection should be treated as needed, of course. Your cat may need some anti-nausea medications so she can eat and to limit vomiting. She may require subcutaneous or intravenous fluids to maintain hydration. You'll need to set up an area to confine her so she doesn't get hurt when she moves around.

Luckily, most vestibular problems are temporary. While it may take two weeks or more, most cats fully recover from their illness. A few may be left with a residual head tilt. Most cats adapt well and generally go back to full activity, even if they are looking at the world a bit differently. ■

What Are Cuterebra?

Hunting cats can run into them

Cuterebra—sometimes called rodent bots—are a fly species whose eggs normally attach to rodents or rabbits. When a hunting cat encounters them, the fly larvae may penetrate the skin and migrate through the cat's tissues, resulting in open sores around a cat's neck and face region,

with visible "breathing pores" that the larvae use to survive. Rarely, the larvae may migrate into the brain and cause vestibular signs.



When Cats Get a Little Crazy

Compulsive behaviors require strategies for control

All cats have their habits and routines, along with favorite activities. But sometimes behaviors get over the top and cross the line into compulsions. Compulsive behaviors can indicate an underlying problem in your cat and can potentially cause other problems.

What and Why

A compulsive behavior is something that a cat does that either isn't appropriate for the situation or is excessive, such as excessive grooming, self-mutilation, pica (eating non-food items such as paper, rocks, or hair), and sucking on fabric.

Veterinary behavior consultant Pamela J. Perry, DVM, PhD, says, "In general, compulsive disorders typically arise in situations of repeated conflict or frustration during which the animal lacks control. Conflict occurs when the cat is motivated to perform two opposing behaviors (e.g., approach-withdrawal). Frustration occurs when the cat is motivated to perform a behavior but is prevented from doing so (e.g., when a cat wants to oust an outside cat from his territory but is unable to get the intruder through the window)." Not sure what to do to resolve the situation, the cat channels his energy into another, often familiar activity, such as grooming.

If the scenario replays enough times, the behavior can become the cat's go-to response to that stressor and may then be generalized to others.

Risk Factors

There is probably a genetic aspect to the development of compulsive disorders. If you got your cat from a source where you know his parents, ask about compulsive behaviors in close relatives or observe

for them yourself. "There is a genetic predisposition for the compulsive behavior, pica, in Burmese and Siamese cats," says Dr. Perry.

Veterinary Attention

"If a cat starts to display behaviors that are excessive, unusual, or out of context, the owner should seek help from a veterinarian," says Dr. Perry. An example of an out-of-context behavior would be swatting at a fly when there isn't a fly present. "Likewise, if the cat performs behaviors that may be self-injurious (eating plastic, self-trauma from licking or biting), then a visit to the veterinarian is warranted."

Before a cat is diagnosed with a compulsive disorder, medical problems should be ruled out. Many things can cause the brain to malfunction: toxicity, trauma, malnutrition, cancer, hormone imbalances. Your veterinarian will likely run a chemistry panel and complete blood count (CBC) and may do x-rays. Magnetic resonance imaging (MRI) or computed tomography (CT) scan may be done to check for a tumor or other defect in your cat's central nervous system.

Treatment and Management

If medical causes have been ruled out, it's time to make some lifestyle changes to help your cat. Your goal is to prevent

your cat from performing the compulsive behavior (especially if it is harmful), distract him if he starts, and engage him in positive alternative activities.

Prevention:

Prevent compulsive behaviors by figuring out which situations trigger the behavior and avoiding them. Keeping a journal of when the cat demonstrates the compulsive behavior can help. Is there a neighbor cat who comes too close to the house? Does another cat prevent him from getting to the water bowl?

Once you have identified one or more stressors, try to

alleviate them. Discourage the neighbor cat from coming near your house, or block your cat's access to the window where he can see the other cat and move his perch to a different spot. If possible, create a routine for your cat. Stick to regular feeding schedules, and develop a routine for when you need to leave for work, which may include providing a special treat or toy when you leave.

Distraction: "Punishment should be avoided to avoid causing or exacerbating fear or conflict," says Dr. Perry. If your cat starts to display a compulsive behavior, interrupt him by giving a command that he knows or making a loud noise (avoid something that will scare him and cause additional stress). Once the behavior has been disrupted, give him something better to do, such as playing with him or giving him treats.

Engagement: Enrichment activities will help to keep your cat's mind stimulated. Keep old favorite toys around, but periodically add in new ones. Give him boxes and paper bags to play with and see if he enjoys watching videos made for cats. As cats are predators, toys that play on his hunting instinct are a great option. These can be toys that move or ones stuffed with treats or catnip. Puzzle toys that he has to manipulate to get the treat out are another fun option.

Depending on the severity of the disorder, success of environmental management, and risk of the cat injuring himself, behavioral medications may be prescribed by the cat's veterinarian. ■



Sure he's cute, but if he climbs into that basket every day and claws at the air, he may have a compulsive behavior that needs your attention.

iStockphoto/DepositoryPhotos

Dr. Perry's Tips for Success

Provide a predictable, consistent environment and routine

- ▶ Use enrichment that gives the cat opportunities to engage in desirable behaviors (climbing, scratching, etc.)
- ▶ Use positive, consistent interactions
- ▶ Identify and remove or minimize stressors that may lead to conflict
- ▶ Engage the cat in any activity that is incompatible with the compulsive behavior (interactive toys, bird videos, etc.)



gettyimages/DepositoryPhotos

That Cat on a Hot Tin Roof . . .

. . . *might have heat stroke*

September's sun can be deceiving. Although many of us consider September to be fall, it is still, for the most part, summer, and the sun is usually still strong and can cause temperatures to rise unexpectedly.

Cats who are overweight or have short, flat faces (such as Persians) are at a higher risk of developing heat stroke. Senior cats and those with heart or respiratory problems will also have more trouble tolerating high temperatures. But any cat can become overheated, needing help to stay comfortable and healthy in high temperatures.



If your cat appears to seek out a cool place, he may be indicating he's too warm.

Cats do sweat, but only from their paw pads. Cats keep cool primarily by lounging in shady or cool spots, drinking water, and grooming. Grooming helps

to cool their bodies in the same way that sweating helps us. As the cat licks her skin and fur, the moisture evaporates and provides cooling.

To help your cat stay cool in hot temperatures, make sure that she has plenty of fresh water available. If she isn't big on drinking out of a standard bowl, try a kitty fountain or leaving a faucet dripping to entice her, if possible. Adding some canned food to her kibble will also provide additional moisture to keep her hydrated.

Ventilation is extremely important. Houses are generally cooler than the outdoors in the summer, but this is not always the case. You may have noticed that some rooms in your house can get very hot, such as an attic or a bathroom with poor ventilation. Avoid shutting your cat in these areas. Either check that she is elsewhere in the house before closing the door or keep it open so that she can leave that room to get water or seek a more comfortable spot.

When outside, provide your cat with shady spots. If your cat is lucky enough to have a catio (safe, screened outside enclosure), ensure that she is either able to go in and out of the house freely or set up some shaded areas for her to rest in comfortably.

Signs of Being Too Hot

If your cat is too hot, she may:

- ▶ Hide in cool places, like the basement
- ▶ Pant
- ▶ Resist playing
- ▶ Seem lethargic or weak
- ▶ Sweat from her paw pads

Heat Stroke

Heat stroke is what happens when your cat gets way too overheated. This can be due to being in an overly hot environment, exercising too much, or being very stressed out. If not addressed, high body temperature can lead to organ failure and death.

Signs of heat stroke include:

- ▶ Diarrhea
- ▶ Drooling
- ▶ Excessive panting
- ▶ Muscle tremors
- ▶ Rapid pulse and respiratory rates
- ▶ Vomiting
- ▶ Weakness

Hot Weather and Cars

A little attention to detail can make a world of difference

When traveling with your cat, have a plan in place for keeping her comfortable and safe during stops. If the stop is quick, perhaps you can leave your car locked and running with the air conditioner on and running. However, we stress that this should only be done for very short periods of time, as air conditioners can fail, as can cars. You can also open all of the windows and provide additional air flow by using a battery-operated portable fan, but again, only for very short periods of time (less than five minutes). In either case, the car should be parked in a shaded area. We must stress, though, that it is best not to leave cats unattended in vehicles. When in the car, your cat should be in a carrier for safety, so she won't be able to slip out.

If you notice a cat in a car on a hot day, evaluate the situation calmly from as far away as possible (many cats don't like strangers, so leaning up against a window will cause stress). Is the cat lounging comfortably, or peering out the window with curiosity? This is a happy cat who is not in immediate danger, especially if it is an overcast day or the car is parked in shade. If you choose to do so, wait around for five minutes to make sure the owner returns, but don't berate the owner. That's for the authorities to take care of. If the owner doesn't return, and you're concerned, most states allow you to call 911.

Panting or other signs of distress are cause for concern (panting is not considered normal in cats). Wait up to five minutes for the owner and/or go into the store and politely ask for an announcement to be made calling for the owner. If necessary, you can call the local police or animal control. In some states, it is legal for good samaritans to break into vehicles to rescue a pet if there is sufficient concern for heat-related injury to the pet. In other states, this can only be done by law-enforcement officials, and in others, there are restrictions concerning which animals (i.e. dogs versus cats) may be rescued in this manner. Please check with your local law enforcement officials for specifics regarding these laws in your municipality.



Veterinary Attention

If you suspect that your cat has heat stroke, she will require veterinary attention as soon as possible. In the meantime, get her to a cooler spot (such as out of the sun or to a cooler room) and try to lower her temperature with cool, damp towels. Avoid overly cold towels, as being too cold has its own risks, and a rapid temperature drop could be dangerous for your cat.

Once at the veterinarian's office, the cat will most likely be given fluids to combat dehydration and help regulate her temperature, along with other supportive care measures. Bloodwork may be run to monitor organ function. Depending on the severity of the heat stroke, the cat may need to stay at the hospital under supervision.

Signs of organ damage may take a few days to appear, so monitor your cat for several days after a heat stroke scare and return to the veterinarian if you notice any abnormalities. ■

⊙KNOW-HOW

Checking Your Cat's Temperature

It's valuable information to give your veterinarian

Your cat's body temperature is normally between 99° and 102° F. A temperature of 103° or higher is considered a fever worthy of attention, and a temperature of 105° is considered life-threatening.

To take your cat's temperature, you will need a rectal thermometer (digital thermometers give a fast reading). Place a little sterile lubricant on the end, then gently lift your cat's tail and insert the thermometer. For digital thermometers, turn it on and hold in place until you hear it beep.

Depending on your cat's personality and mood, you may need someone to restrain her while you take her temperature. If you are concerned about heat stroke or another illness and/or she is resistant, avoid stressing her and head straight to the veterinary clinic. They will be able to take her temperature while other care measures are being taken. ■



Cushing's Disease Can Strike Cats

An overproduction of cortisol may be the culprit

While Cushing's disease, which is technically called "hyperadrenocorticism," is more common in dogs than cats, feline members of your family can have this health problem.

The symptoms you see are the result of overproduction of cortisol from the adrenal glands and include:

- ▶ Frequent drinking
- ▶ Increased urination
- ▶ Diagnosis of diabetes
- ▶ Potbelly appearance
- ▶ Unthrifty coat
- ▶ Skin problems

What Are the Adrenal Glands?

Your cat has two adrenal glands, which are tiny glands located near the kidneys. The adrenal glands make cortisol and keep it in store for times of stress. You can think of cortisol as a "fight or flight" response hormone.

The pituitary gland (located near the brain) acts to stimulate production of cortisol by secreting adrenocorticotrophic hormone (ACTH). For a cat to have an overabundance of cortisol, either the pituitary is sending out too much ACTH or the adrenal glands themselves are overproducing cortisol.

The classic feline case of Cushing's syndrome involves an older female cat. In fact, 75 percent of cases are diagnosed in female cats.

Most feline cases—about 80 percent—result from a pituitary problem. The other 20 percent of cases usually have adrenal tumors, which run about 50/50 for benign versus malignant. The different etiologies mean that more diagnostics may be required to pinpoint the exact cause.

First Clues

What most of us will notice first in a cat with hyperadrenocorticism are skin problems. Cats with this problem often

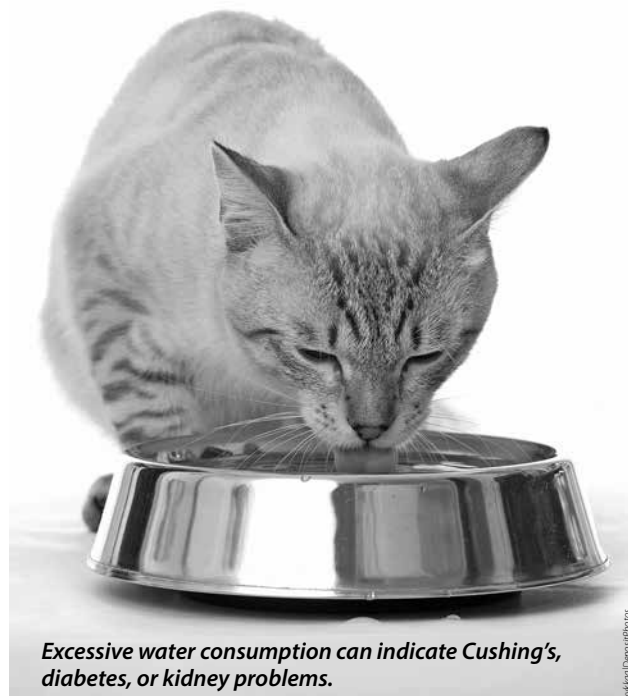
have thin skin with some hair loss. The skin can be truly fragile. If the skin/coat is roughly "scruffed" or grabbed, the cat's skin may split open. Many cats with Cushing's disease will develop a pot-bellied appearance and have muscle wasting, meaning a loss of muscle.

Another common presentation for Cushing's disease is a cat who has diabetes but is difficult to regulate and treat. Some of these cats will be insulin-resistant. The problem could be underlying Cushing's, since cortisol levels can interfere with insulin metabolism. With glucose spilling over into the urine, there is added potential for urinary-tract infections.

The clinical signs of increased drinking and urinating can confuse or delay the appropriate diagnosis, since these signs fit not only Cushing's, but also other diseases, including diabetes mellitus, hyperthyroidism, and kidney disease.

The Diagnosis

Diagnosing Cushing's can be challenging in cats. Because it is less common than in dogs, dosages for test diagnostics aren't as clear cut. In addition, the possibility of underlying diabetes can confuse some results of diagnostic testing.



Excessive water consumption can indicate Cushing's, diabetes, or kidney problems.

Usually, the veterinarian's first step in determining what is wrong with your cat is basic bloodwork and deciding if diabetes is involved. A urinalysis can provide important information about your cat's health as well.

If your cat tests positive for diabetes, it makes the most sense to treat that condition first. If your cat does not respond well to insulin treatment, then it is time to consider looking at possible Cushing's disease. A dexamethasone-suppression test is often the first step. This involves giving your cat a high dose of a steroid via injection and following

up with blood samples to look at cortisol levels. This test is usually done over the course of eight hours.

The ACTH stimulation test involves injection of artificial ACTH to see if your cat's body responds with an excess of cortisol production.

Abdominal ultrasonography has also been suggested by some experts as a diagnostic aid. Unfortunately, feline adrenal glands are small (and located by the kidneys, which may obscure them). Still, an ultrasound is usually worth doing. Computerized tomography (CT) scans may also help if available.



Confirming a diagnosis of Cushing's is not easy in cats.

The Glands Behind the Scenes

Tiny glands that can cause big trouble when things get out of whack

A cat that suffers from Cushing's disease has a problem with one of two endocrine glands, either the pituitary gland or the adrenal glands. Most commonly, the pituitary gland is the problem.

The pituitary gland is located under the hypothalamus, a part of the brain that regulates many bodily functions of which we (or our cats) are unaware. While it is close to pea-sized, it has two lobes and a big influence on your cat's health. The front lobe is the adenohypophysis, which produces several hormones after receiving stimulation from the hypothalamus. The rear lobe is the neurohypophysis, which has nerve fibers connecting to the hypothalamus.



ACTH (adrenocorticotrophic hormone) is the hormone that can overstimulate production of cortisol by the adrenal glands leading to Cushing's disease. This is generally associated with a tumor of the pituitary gland, usually a macroadenoma. Other hormones may be increased due to this tumor in addition to ACTH.

Diagnosis of pituitary cancers relies on the various blood tests discussed as well as an MRI to examine the brain and surrounding tissues. Surgery to remove these tumors is difficult, but radiation is showing some success in treating these tumors.

The adrenal glands are very small glands located at the tip of the kidneys. They can be difficult to visualize via ultrasound due to the usual fat pad they are settled into and the fact that normal adrenal glands are quite small.

The adrenal gland itself has two components, the outer area or cortex and the inner area called the medulla. The cortex itself has three layers, each of which produces a separate hormone. For cats with Cushing's disease, the middle layer, which produces cortisol, is the important layer.

Tumors that affect this layer of the adrenal gland are uncommon in cats compared with dogs, but they can lead to an abnormal amount of cortisol being produced. Diagnosis is generally via bloodwork "rule outs" and identifying an adrenal growth via ultrasound or CT scan. The ideal treatment is removal of the affected gland. Often just one gland is involved, and cats do quite nicely with just the remaining healthy adrenal gland.

What is ACTH?

ACTH (adrenocorticotrophic hormone) is a pituitary-produced hormone that stimulates the adrenal gland to produce cortisol, which is a natural steroid. Cosyntropin can be injected to stimulate release of ACTH. Blood samples are taken pre and post injection.

Treatment

For an adrenal tumor, surgery is the best choice. Radiation can be attempted for pituitary growths, though it is not commonly available. These options can be curative.

Trilostane is the drug most commonly used by veterinarians to help with Cushing's disease treatment in cats. There are other options, but they come with more serious side effects. Trilostane blocks the enzymes involved in the production of cortisol in the adrenal gland cortex, inhibiting the production of cortisol.

The effect is both temporary and reversible, requiring your cat to be on this medication for life. Remember, you are not "curing" the disease—you are controlling it. Trilostane also may help with the control of diabetes in cats that have been difficult to regulate due to the hyperadrenocorticism.

Luckily for most of our feline companions, Cushing's disease is an unusual diagnosis in cats. ■

© DID YOU KNOW?

Iatrogenic Disease

Medical "friendly fire"

Iatrogenic disease is a health problem caused by the examination or treatment of a patient. In dogs, iatrogenic Cushing's can be caused by long-term use of steroids for other health conditions. Cats are much more resistant to steroid effects, so this is not considered to be a frequent cause of Cushing's in them. Long-term use of progesterone drugs can have similar effects. ■



New Cat: Safe, Civil Introductions

Adding a new cat to the family can be a simple, painless event, if you prepare properly

Q We have opened our home to an additional cat, and we would like to know how best to introduce the cat to our existing cat and dog. Can you give us some advice on how to make this transition safe and easy?

A You will need to use training and behavioral modification. You must also provide an adequate amount of resources—toys, beds, bowls—to make this transition easy on everyone. If possible, ask other family members to help, so all the pets get their fair share of attention.

Be sure each animal has plenty of space and resources to call his own. For example, one litter box per cat plus one more, multiple food and water dishes, multiples of favorite toys, and multiple beds. Use this step-by-step process to help ensure the least stressful transition:

To introduce a cat and dog:

1. Isolate a new cat for three days to a



With the right introduction, cats and dogs can become good friends.

week in a room with a litter box, soft bed, food, and water. That gives him time to become accustomed to the new home's smells and sounds before encountering other pets. Do this even if no other pets are in the home so the cat can develop a sense of place.

2. Let the cat explore the house while the dog is outdoors, confined to a crate or restrained by a leash.

3. When you bring the animals together, keep the dog on a leash so you can control playful or predatory lunges. Give them both treats as long as they react calmly. You want them to associate good things with each other.

To introduce a new cat:

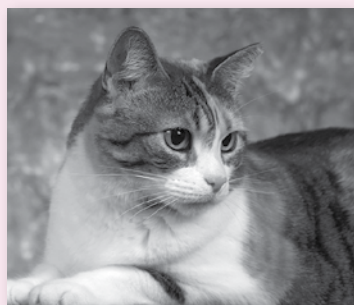
1. The same as the previous Step 1. Isolate for three days to a week in a room with a litter box, soft bed, food, water.

2. Exchange their odors. Rub each cat with a washcloth, especially on the cheeks and the top of the tail, which has scent glands that cats use for identification. After letting them sniff the washcloth, rub each cat with the other's washcloth so they can become accustomed to each other's smell. If a cat sniffs the washcloth and hisses or swats at it, expect to spend extra time getting them to accept one another.

3. After the first seven days of isolation, set up a situation in which the cats can see each other without physical contact. You can separate them with a glass or screen door or use two baby gates on top of each other. This separation period should last three to seven days. During this time, feed the cats within view of each other. You want them to associate good things with the presence of the other cat.

4. Finally, introduce them with both cats wearing harnesses and leashes so you can separate them if they fight. Give them treats if they react calmly. Go slowly and they will become friends.

All my best,
Elizabeth



Elizabeth works with the Cornell Feline Health Center in providing the answer on this page (vet.cornell.edu/fhc/).

Coming Up ...

- ▶ Head-Rubbing Behaviors
- ▶ Feline Lymphoma
- ▶ Anti-Anxiety Medications for Cats
- ▶ Wounds: Know What You Can Safely Use

© HAPPENING NOW...

Plague Found in Idaho: KTVB in Boise, Idaho, reported in June that a cat tested positive for the plague. This occurred a month after a child tested positive for the plague, also in Idaho. The health department believes the cat may have caught the disease from a ground squirrel, as plague has been in the area in previous years. It is commonly spread to rodents by infected fleas and is usually treatable with antibiotic therapy.

Cost of Pet Emergency: CNBC.com reports that nearly 70 percent of American households have a pet but most are unprepared financially for a veterinary emergency, which averages between \$800 and \$1,500, according to Petplan. Only 39 percent of Americans have enough in savings to cover a \$1,000 emergency.

South Australia's New Law: All cats and dogs born after July 1, 2018, are required to be neutered, or "desexed," before they turn six months of age or within 28 days of the new owner's possession, according to a South Australia government website. There are a few exceptions, such as for registered breeders and if a veterinarian says it would not be in the best interest of the animal (adversely effects growth or wellbeing of the animal). The goal is to reduce the number of animals who end up in shelters. ■

