

# Cat Watch

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

◎ THIS JUST IN

## Genetic Clue for Variable Response to Clopidogrel

*Mutations may affect drug's ability to prevent clots*

**H**ypertrophic cardiomyopathy (HCM) is a common disease in cats that can cause clots that may result in a potentially life-threatening blockage of blood supply to various parts of the body (most commonly the hind limbs). Clopidogrel (Plavix) is an antithrombotic drug that is commonly prescribed for HCM to decrease the likelihood of clot formation, and the effectiveness of this drug can vary among cats.

A study of 49 cats with HCM showed a varied response to clopidogrel may be the due to a mutation in an enzyme called P2RY1 (an A236G mutation).

After 10 to 14 days of clopidogrel, the researchers found that the blood of cats with this mutation was more likely to clot than that of cats with the unmutated form of P2RY1. Cats with this genetic variant may benefit from additional or different thrombolytic medications. More research needs to be done, but genetic testing of cats being considered for clopidogrel therapy may help predict their response. ■

*Ueda, Y., et al. A genetic polymorphism in P2RY1 impacts response to clopidogrel in cats with hypertrophic cardiomyopathy. Sci Rep 11, 12522.*



Illustration: Bobbi photo

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## Ingrown Claws—Ouch!

*Untrimmed nails can puncture your cat's own paw pad*

**M**ost active cats keep their nails worn down by walking and sharpening them on scratching posts (and possibly—but hopefully not—your furniture). Typical kittens and adult cats only need an occasional nail trim to tame extra-long claws, particularly the ones on dewclaws and extra toes that may not make contact with the ground or surfaces being scratched.

Trouble arises when a cat isn't wearing her nails down naturally. Senior cats are at higher risk for developing ingrown claws, but any cat that is not getting much exercise could develop this issue.

### Signs of Pain

Signs that your cat might have an ingrown claw include:

- ▶ Limping
- ▶ Licking a paw a lot
- ▶ Nail visibly grown around and embedded in the pad
- ▶ Bleeding or oozing from the paw

When the nail first contacts the paw, the pad tissue will start beefing up the top layer with extra keratin for protection from the chronic pressure and irritation. This will look like a little callus, usually whitish in color. It will usually feel harder than the normal pads and may be flaky.

As the nail continues to grow, it will puncture the pad. At this point there may be some bleeding, along with swelling and discomfort. Ingrown claws get infected easily due to their close contact with the ground. An infected ingrown nail will usually be painful, swollen, and will likely ooze pus.

Senior cats sometimes have thick, brittle nails. Whereas normal cat nails taper to a sharp point, these nails stay thick from base to point and often shatter when they are trimmed. This is because the outer layers are not being shed normally and just keep building up. The result is a thick nail that looks more like it belongs on a dog's paw than a cat's. Cats with diabetes, hyperthyroidism, and arthritis (common in geriatric cats) are all more likely to develop these thick,



*This nail is too long and is beginning to curve inward toward the pad.*

overgrown nails. And if the cat isn't active enough to wear off the old layers of nail, the nails will likely grow longer than they should, eventually growing into the pad.

If you notice that your cat's nails are growing long enough to start curving toward the pad, make nail trims part of her routine care. Trimming every other week or so is usually sufficient to keep rogue nails trimmed back and your kitty's pads safe.

### When to Call the Veterinarian

If the ingrown claw has just started to contact with the paw, you can usually resolve the issue at home by trimming the nail. There will be a small callus around the contact point and perhaps a divot in the center. Gently wipe the area with a clean cloth.

Seek a veterinary exam if:

- ▶ The ingrown nail is bleeding
- ▶ The paw shows signs of infection, such as oozing, swelling, or feeling warm to the touch
- ▶ You are unable to trim her nails
- ▶ She is showing other signs of illness in addition to her nail woes

Once you know that your kitty has a tendency to let her nails overgrow, this is an easy problem to prevent. Simply trim her nails, especially the extra toes on polydactyl cats, on a regular basis to keep them short. ■



## Cornell Feline Mammary Cancer Research

*Study by Cornell grad student may help people, too*

**A**rianna Bartlett, a PhD candidate at the Baker Institute at Cornell University, is studying feline mammary cancer. Mammary cancer is the third most common feline cancer, after lymphoma and skin cancer. It occurs most frequently in cats over 10 years old. Intact female cats not only have a high rate of breast cancer, but 85% of the time, the cancers are malignant (spaying lowers the risk of mammary cancer).



According to breastcancer.org, women have about a 13% chance of developing invasive breast cancer. The National Centers of Biotechnical Information states that about 60% to 80% of breast tumors are benign. Unlike cats, humans usually have regular screenings, so a tumor may be detected earlier than in cats.

With funding partially provided by the Cornell Feline Health Center, Bartlett is taking a comparative look at human breast cancer and factors that influence its development (both carcinogens and genetics), and analyzing the differences between feline cells and those of other animals that do not live inside with people. Horses, for example, have a low rate of mammary cancer for reasons that are as yet unclear.

Bartlett is working mostly with cell cultures. When mammary cells from both horses and cats are exposed to dimethylbenz(a)anthracene (DMBA), a carcinogen known to cause mammary cancer, their responses are different. The equine cells tend to simply die off, which means they aren't mutating into cancer cells. In contrast, the feline cells repair the damage from the carcinogen but leave themselves open to future mutations that might lead to cancer.

With her emphasis on the genetics of microRNAs, Bartlett hopes to find treatments that might help both cats and people in the future. ■

## Some Cats Prefer Not to Work for Dinner

*But you may want to ask them to do it anyway*

**A** recent study from the University of California at Davis published in *Animal Cognition* demonstrated what most cat lovers intuitively know: Cats prefer to have dinner served and not to have to work for it.

Many animal species seem to enjoy putting some effort into their meals. Food puzzles, enrichment things like snuffle mats, or hiding food add some spice to many animals' lives. Not so for domestic cats, according to this study. When animals are willing or even prefer to do some work to earn their food (even if equivalent food is readily available), it is called *contrafreeloading*. It appears that cats are freeloaders.

Cats in a laboratory setting showed a resistance to work for their food, so researchers wanted to see if pet cats would look at things differently. A group of 17 house cats had the choice of food on a tray or in a food puzzle game. Eight cats made no effort to put any work into getting their meals. The cats who ate the most from the food puzzles ate the most overall, which tends to make one think they were hungrier. There was no difference in sex or activity level between the groups that chose to work for their food and those that did not.

The practice of employing *contrafreeloading* techniques is used extensively as part of enrichment programs for many animals in zoos, including big cats. Here the cats always had the option of the "easy" food or the "more effort" food. The same food was used for both options to avoid cats simply going for their preferred choice. One theory was that cats were conserving their energy, something cats are well known for.

Does this study mean you should give away your food puzzles? Not at all. Food puzzles and games are still considered good activities for your indoor cat. Simply provide your cat with the food puzzle first or alone for a mealtime. With no other option, your cat should be willing to work for his food. ■

*Delgado, M.M., et al. Domestic cats (Felis catus) prefer freely available food over food that requires effort. Anim Cogn (2021). <https://doi.org/10.1007/s10071-021-01530-3>*



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# Dentals: Anesthesia Required

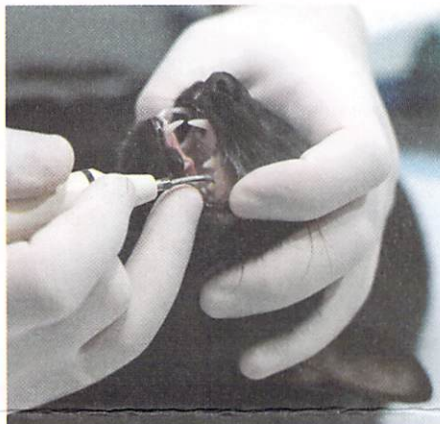
*Without it, diagnosis and treatment may be less than ideal*

**M**ost cat owners get sticker shock when quoted an estimate for a dental cleaning for their cat. Depending on how much your cat needs done and what tools your veterinary team will be using (such as dental x-rays), the price can range from a couple hundred dollars to over \$2,000. There are two primary reasons for the high cost: 1) the average cat does not receive routine dental care like many humans do, meaning most cleanings are far from quick and easy, and 2) cats must be under general anesthesia to do a dental cleaning or perform a dental procedure.

“The x-rays we take and the dental probing we perform are almost exactly the same as the ones done by the dentist for humans. What cat would allow that while it is awake?” says Nadine Fiani, BVSc, DAVDC, section chief of dentistry and oral surgery at the Cornell University College of Veterinary Medicine.

## Treatment Protocol

“There are numerous diseases that affect cats’ teeth,” says Dr. Fiani, ranging from periodontal disease and gingivitis to more severe conditions such as stomatitis or resorptive lesions. “Most of them occur below the gumline and are not visible without x-rays and a very detailed oral examination,” says Dr. Fiani. “In order to identify the correct



*The anesthesia requirement is understandable. Some owners can't even trim their cat's nails.*

disease process and its extent, a general anesthetic is needed.”

And if your cat won't sit still for someone to get a good look at her teeth from all angles, just imagine how she would react once the veterinarian starts trying to treat dental problems.

“Not only do we need appropriate diagnostics, but treatment is not just limited to scaling the crowns of the teeth. Cleaning below the gumline is essential. Frequently we identify disease that requires more advanced procedures. None of these can be performed with the patient conscious,” says Dr. Fiani. “In short, anesthesia-free dentistry is stressful for the animal, does not allow for proper diagnostics, nor does it treat the most common diseases we encounter in our feline friends.”

## Custom Anesthesia Protocols

Anesthesia comes with a degree of risk, but your veterinarian will make your cat's dental procedure as safe as possible. “Anesthesia is not a one-size fits all process,” says Dr. Fiani. “Each animal is assessed individually, and their medical history is taken into account when formulating a specially tailored plan. At Cornell, we are fortunate enough to have a specialist anesthesia service.”

At the time of admission, your veterinarian will likely recommend pre-anesthetic bloodwork. Say yes. This bloodwork allows your veterinarian to see how your cat's liver, kidneys, and other organs are functioning that day to make sure they are healthy enough

to process the anesthetic drugs and remove them from her body once the procedure is done. Most facilities accept bloodwork done within 30 days before the procedure. If anything is amiss, your veterinarian can adjust to make recovery easier on your cat, start intravenous fluids prior to the procedure to boost hydration, or postpone the procedure until your cat is healthier.

Most practitioners have a go-to drug protocol that they use as a basis for their patients going under anesthesia, but these protocols can be adjusted to fit the patient's needs. In most cases, your cat will receive a “pre-medication” cocktail to provide sedation and keep her calm soon after her physical exam that morning, followed by injectable anesthetic drugs to induce complete anesthesia and gas anesthesia to maintain that state.

This method of using multiple drugs is called “balanced anesthesia” and allows your veterinarian to use smaller amounts of each drug. This reduces the risk of side effects while still giving your cat the benefit that each one brings. If your cat has a preexisting health issue, such as a heart condition, your veterinarian will likely remove any medications that are contraindicated for her case.

Your cat will likely be kept on intravenous fluids during her procedure, and sometimes before and after as well. This helps to support her kidneys as they process the anesthesia and will keep her hydrated. Other medications can be infused as well to help with specialized issues, such as pain control.

## Dental Schedules

The gold standard for dental health care in pets is daily tooth brushing and an annual dental cleaning under anesthesia. Your veterinary team will be able to catch problems in the mouth sooner if they can do a thorough oral exam under anesthesia. Senior cats (ages 10 and over) should absolutely get a dental cleaning to ensure that their teeth are clean and mouth in good working order as they head into their senior years when anesthetic procedures become more risky.

“Cats are excellent at hiding their oral pain (or any other pain for that matter),” says Dr. Fiani. “There are a number of very common dental diseases that can easily be addressed with proper diagnostics and treatment. Regular examination under general anesthesia allows us to ensure that our pets are comfortable and healthy.” ■

## What You Can Do

- ▶ Teach your cat to let you brush her teeth, keeping plaque at bay.
- ▶ Say yes to preanesthetic bloodwork to make sure your cat is healthy enough for anesthesia.
- ▶ Agree to dental radiographs so the veterinarian can assess the roots of your cat's teeth and catch developing issues early.
- ▶ Plan to do several preventive dental cleanings over the course of your cat's life.
- ▶ Schedule the first dental cleaning for cats at 10 to 12 years of age even if the teeth “look fine.”



# SCC: Early Diagnosis Is Critical

*With squamous cell carcinoma, time is of the essence*

**S**quamous cell carcinoma (SCC) is one of the most common cancers seen in cats. You may be familiar with the classic form of this disease, which is a skin cancer that affects white cats on their ears and faces. We will discuss the skin cancer first, but you should know that there is a deadlier type that is much more difficult for owners to notice and much harder to treat: oral SCC.

## Epithelial Cells

Lets start with skin cancer. The skin is made up of layers of epithelial cells. Epithelial cells cover other surfaces in the body, including the oral cavity. SCC is a cancer of epithelial cells.

In cats and humans, ultraviolet light exposure from the sun has been proven to contribute to the development of cutaneous SCC. This is likely why white cats with lightly pigmented skin, like fair-skinned people, are more prone to cutaneous SCC. It typically strikes the ears, particularly the outer edges, but can occur on the eyelids and nose.

“People are advised to minimize their exposure to direct sunlight during peak daytime hours in order to decrease skin cancer risk. This is important for cats as well,” says Kelly R. Hume, DVM, DACVIM, associate professor



*Sunlight, even through a window, can be a problem for some cats, especially white cats.*

of oncology at the Cornell University College of Veterinary Medicine.

As with any cancer, prevention and early detection are key. To help prevent the cutaneous form of SCC, keep your light skinned, white cat indoors. If she goes out, apply sunscreen to her ears and any sparsely haired areas. Make sure the sunscreen you choose does not contain zinc, as this can be toxic to cats if ingested while grooming, and always check with your veterinarian before applying any sunscreen products to your cat.

Other potential causes of SCC include infection with papilloma virus

(papilloma virus DNA has been identified in feline cutaneous SCC tissue), genetic predisposition, and/or gene mutations.

## Crusty Lesion

Cutaneous SCC typically looks like a crusty spot that doesn't go away. It usually doesn't seem itchy and usually doesn't appear to be painful. The lesion may get bigger with time, become plaque-like, redder, and the surface could ulcerate. If secondary bacterial infection sets in, then it may become itchy and/or painful.

If you see something like this on your white-faced cat, go to your veterinarian as soon as possible. Your veterinarian may do some preliminary testing to rule out other potential causes of the skin lesion (e.g., mange, ringworm). If these tests are negative, a biopsy is usually recommended. If the lesion is in an area that is amenable to removing it in its entirety, with wide margins, this should be done, and the tissue should be submitted for biopsy.

If you are lucky, the biopsy will come back pre-cancerous, and your quick action will have paid off big time, essentially preventing cancer.

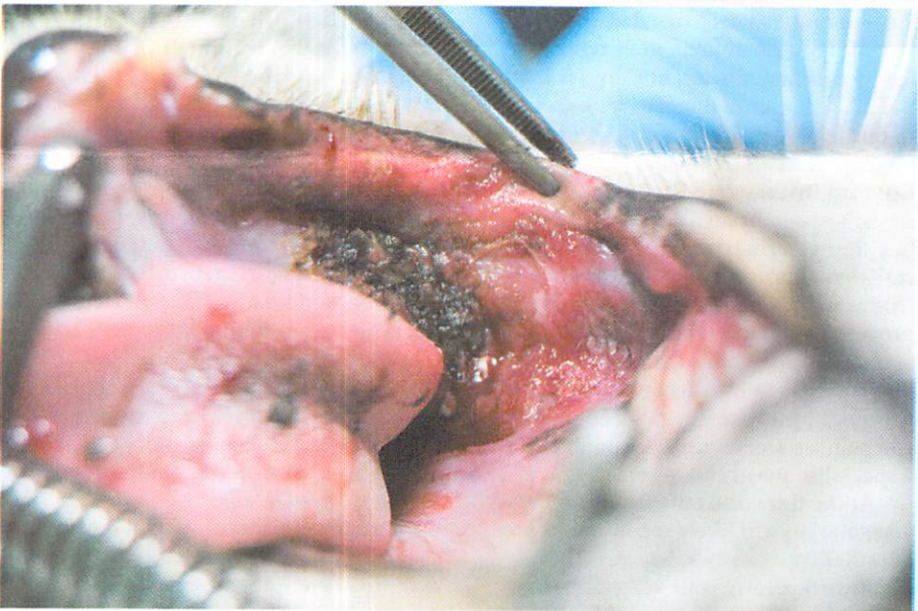
If the biopsy comes back SCC, and the surgical margins are clean (clear of cancer cells), this will often result in good long-term control, as cutaneous SCC is slow to metastasize (spread to other organs in the body).

If the margins are dirty (i.e. they contain cancerous cells), or if the lesion was in a place where complete resection with wide margins was not possible (e.g., eyelids), the prognosis is usually less favorable. Extensive and/or invasive lesions are difficult to treat, thus the poorer prognosis. Complete surgical removal will always be the best chance for cure.

Conventional chemotherapy usually doesn't work. Electrochemotherapy (electric fields applied to cancer cells to make them more susceptible to chemo drugs) is showing promise. Radiation therapy, which requires multiple treatments under general anesthesia, works for some lesions.

Options for small, superficial lesions include cryotherapy (freezing the tissue to destroy it), topical treatment with an immune modulating cream (Imiquimod 5%), and plesiotherapy.

Plesiotherapy is high-dose radiation using a Strontium-90 probe, and a single treatment can be curative. Unfortunately, this treatment requires special equipment



*An oral tumor is usually deep in the mouth at the base of the tongue and can be very difficult for the owner to note until the cat begins showing symptoms.*



*"It is very hard to successfully treat oral squamous cell carcinoma if there isn't a surgical option," says Dr. Hume, "So, finding these tumors when they are small is really important."*

and is not available at all oncology centers. According to Dr. Hume, plesiotherapy for cutaneous SCC is offered at the Cornell University Hospital for Animals, but it only works for small, superficial lesions.

### Deadly Oral SCC

In the mouth, SCC tends to be much more aggressive and invasive than on the skin. Making matters worse, it's harder to catch early, as most owners are unaware of the lesion until it starts causing obvious problems like drooling, bad breath, decreased appetite, reluctance to eat, oral pain, and/or weight loss. Its location usually makes surgical removal difficult, and radiation therapy is fraught with complications due to potentially debilitating side effects.

The most common location of oral SCC is under the tongue, right at its base. It also occurs on the gums along the upper and lower jaw and can occur in the tonsillar area as well.

While surgery is still the treatment of choice, it is difficult to completely remove a cancer, with wide margins, in the mouth. This usually entails aggressive, disfiguring surgery, after which many cats have a difficult time functioning. Some will require hand feeding for life, or even surgical placement of a stomach feeding tube.

If an oral mass has been identified in your cat, work with a veterinary oncologist. This specialist will discuss all available options for your cat's individual situation, the pros and cons of each, potential complications, and expected outcome.

"It is very hard to successfully treat oral squamous cell carcinoma if there isn't a surgical option," says Dr. Hume, "So, finding these tumors when they are small is really important. Routine dental

exams with your veterinarian and regular oral care and evaluation at home can help with early detection."

### When Hope Dwindles

When there is little hope for cure, or if the potential complications and side effects of treatment are too daunting, palliative care is commonly pursued. This is geared toward improving and maintaining comfort and quality of life for as long as possible. It is frequently elected for chronic diseases for which cure is unlikely, such as oral SCC in cats.

The mainstay of palliative care is pain management. Buprenorphine is an effective opioid pain reliever in cats and is easy for owners to administer by mouth at home. As such, it is frequently the first medication prescribed. Tramadol is another opioid that is effective for pain in cats. Gabapentin is a neuropathic pain reliever that can help with oral pain, especially when added to an opioid regime.

Non-steroidal anti-inflammatory drugs (NSAIDs) are good for relieving pain and reducing inflammation. They must be used cautiously in cats, and with veterinary supervision, as they can be harmful to the kidneys. Some NSAIDs are toxic to cats. Meloxicam (Metacam) and robenacoxib (Onsior) are NSAIDs approved for use in cats.

A potential secondary benefit to NSAIDs is that some SCC cases have an overabundance of the receptors (COX 1 and COX 2) that NSAIDs bind to in cells. This means that it is possible NSAIDs may slow the progression of SCC. As such, your veterinarian may prescribe meloxicam or robenacoxib for your cat. Piroxicam is a powerful NSAID that has been shown to slow the growth of other cancers. Because of its potential to cause harm in cats, however, its use should be limited to the discretion of a veterinary oncologist.

Bisphosphonates (drugs that slow bone loss, such as are used for human osteoporosis) have been used as part of palliative care for cats with SCC. These drugs may help keep cats with underlying bone involvement feel better longer, as they slow bone loss associated with cancerous infiltration of bone.

### What You Can Do

- ▶ Keep light-skinned cats out of sunlight as much as possible.
- ▶ Consider a cat-safe sunscreen if the cat is an indoor-outdoor cat.
- ▶ Have crusty lesions that don't show improvement within a week examined by a veterinarian.
- ▶ Watch for early signs of oral SCC, such as drooling or bad breath.
- ▶ Keep up twice-a-year wellness exams for cats 7 years old and older.

On the home-management front, soft or canned food will be easier for a cat to pick up, chew, and swallow than dry food. Appetite stimulants like mirtazapine are often necessary and helpful.

Treating any secondary bacterial infections in the mouth is important for your cat's comfort as well. Increasingly bad odor from the mouth and purulent-looking drool are common indicators of infection.

For oral SCC, while there's not much you can do to prevent it, having any cat over 7 years of age examined by a veterinarian twice a year may help catch it early. Thorough oral examination, including looking underneath the tongue, can be challenging. If your veterinarian has a high index of suspicion based on preliminary oral examination, sedation or general anesthesia may be recommended so that a full evaluation can be performed. ■



*The concerns about skin cancer shouldn't stop you from getting a white cat. They should simply make you more vigilant about checking her.*



# Handling Medications

*Errors can make cats sick or be fatal*

It's a rare household that doesn't have medicines on hand for different family members and that can result in inadvertent mistakes. For this reason, we share five tips to help keep everyone safe and medications at their peak effectiveness.

Firstly, it's important that you give the entire course of medications as directed by your veterinarian, even if your cat begins to improve before the course is finished, unless instructed to stop them once symptoms have subsided.

**1 Storage.** Never leave medicine out on the counter, a desk, or even on top of a chest of drawers. Store the medication inside the desk, a cabinet, or a dresser drawer. Medications commonly need to be stored in a secure, dry spot out of the sunlight and away from heat and humidity. The bathroom cabinet may be dark and secure, but it's in a humid location. The cabinet above the stove may not be the best spot either, as it can get warm, but another kitchen cabinet not directly over the stove may work. A top cabinet is preferable to a bottom cabinet, if possible.

**2 Safety for all.** Ask your veterinarian or veterinary pharmacist about any precautions that should be taken



*As a cat lover, you probably aren't surprised at how resourceful a determined feline can be.*

with the medicine, particularly in multiple-pet households. For example, some topical flea and tick medications—and even some shampoos—are toxic to cats..

**3 Childproof does not equal pet-proof.** These required child-proof containers may slow a determined pet down, but we all know that a determined cat is probably not going to be foiled. If you suspect your cat has been into its own medication, or yours, or the dog's or anyone else's, try to reach your veterinarian. If you cannot, immediately call a poison-control line, such as the pet poison hotline at 800-213-6680. They may charge for their services, but it is money well spent.

**4 Don't split it.** Buying a larger-dose drug and cutting it into cat-sized doses is rarely the best choice. Sometimes, there is no other choice. But if your cat is receiving a medication that needs to be split, at least ask if there's a smaller dose product available. Splitting the pills often means under-dosing or over-dosing your cat.

**5 Finicky cats and compounding.** Sometimes, especially for a long-term medication your cat is not too excited about it, a compounding pharmacy can add meat or fish flavoring to make the drug more palatable without harming its potency. Some medications that are usually given orally may be able to be made by a compounding pharmacist into a topical form that can be applied to the cat's ear. And, if using a liquid medication, ask your veterinarian or pharmacist about special syringe stoppers that fit on top of bottles of liquid medicine. These enable you to turn the bottle upside down and draw out the right dose into the syringe without spilling. ■

## You Should Know the Do's and Don'ts

Mistakes in handling medicines are all too common, and people, pets, and the environment can be harmed because of it:

- Don't flush drugs** down the toilet because they can impact the local water supply or leach out where they may be consumed by a wild animal.
- Don't save expired medication** for "the next time." If your cat is sick, you want something you know will work. While some drugs may be effective past the expiration date, you really don't know for sure or for how long. It's not worth the risk.
- Don't dump loose pills** in your garbage, your compost pile, your yard or anywhere else.
- Do crush unused pills**, mix them with kitty litter, and place the mixture in a sealed bag and into the trash.
- Do take advantage** of community and pharmacy take-back programs.
- Do follow local laws** on disposing of needles and syringes. Often, the recommendation is to place them in a sealed container, preferably using a sharps container (small ones are not expensive), and take them to a medical recycling center. The FDA suggests calling "Safe Needles Disposal" at 800-643-1643 or email [info@safeneedledisposal.org](mailto:info@safeneedledisposal.org) for information about laws specific to your area.

## Share Your Suggestions and Questions

If you have a question for Dr. Kornreich's Ask Dr. K column or a topic for an article, please let us know. You can email us at [catwatcheditor@cornell.edu](mailto:catwatcheditor@cornell.edu) We welcome digital photos to consider for use with your question. ■



# Help for Feline Dementia

*Supplements and management can ease the stress*

One study suggests that 80% of all cats from 16 to 20 years of age will show cognitive changes of some type. Feline cognitive dysfunction syndrome (fCDS) is being seen more often as our feline friends are living longer lives. Cats can suffer from sundowning, a period of confusion that begins in late afternoon and lasts into the night, just like humans and dogs.

In fCDS, older cats may show spatial disorientation, stop playing, and sleep more than the usual cat-napping routine. Often this means periods of wandering the house at night meowing loudly. Some cats will stare blankly at a wall. Others may seem to forget to eat or drink. Litterbox problems are common. Cats that go outdoors may wander off and get lost, unable to find their way back home.

Metabolically, these signs of aging are related to changes in neurotransmitters such as serotonin, dopamine, and acetylcholine. When normal levels and metabolism of these compounds are compromised, a cat will show changes in movement, attitude, memory, and sleep patterns. Decreased blood flow to the brain and free radical oxidative injuries may contribute. She may forget to eat or where her normal sleeping spot is located.

It's important to realize that these signs could indicate other health issues as well, including serious problems like kidney disease or hyperthyroidism, making it important to involve your veterinarian if your cat seems to be acting odd. Get your cat a full workup, which will usually include a thorough physical examination, thyroid hormone levels, complete blood chemistry panel, and a urinalysis. Once any medical conditions are ruled out, you can consider treating for cognitive dysfunction.

## Treatments

No FDA-approved medications are available for fCDS. Selegiline is approved for dogs, and some veterinarians have used it off label in cats with good results. A small open trial using selegiline for cats with fCDS demonstrated some positive effects. The American Association of Feline Practitioners supports the use of this drug for geriatric cats.

Other options include:

- ▶ **Novifit-S (Virbac)**, which contains



*Changes in her behavior with you may be a symptoms of fCDS.*

S-adenosyl-L-methionine (SAM-e), may combat free radicals and improve overall cell membrane function. It has shown some beneficial effects for mild-to-moderate fCDS. It appears to work best if started early in the course of the disease.

- ▶ **Senilife (CEVA Animal Health)** is loaded with antioxidants such as phosphatidylserine, ginkgo biloba, vitamin E, and vitamin B6, which are believed by many to help slow the progression of fCDS.
- ▶ **Anxitane (Virbac)** contains L-theanine, a green-tea extract that increases serotonin and dopamine levels.
- ▶ **Semintra (Boehringer Ingelheim)** is the brand name for telmisartan, an FDA-approved drug to treat hypertension in cats. Trials are underway using this drug in cats with fCDS.
- ▶ **Pheromones**, such as Feliway, are believed by some cat owners to improve the quality of life for these senior cats.

Of course, getting medications into any cat is challenging, and providing daily treatments for an older, slightly curmudgeonly cat can double the work.

## Home Management

For cats in early stages of cognitive dysfunction, behaviorists recommend enrichment activities. Establish routine play times for your cat. Offer food puzzles. Do your best to keep your cat alert and active during daytime hours so she will sleep at night.

Limit her living space, if necessary. For example, if your cat seems

disoriented, can't find her litterbox, and finally just urinates on the floor, she may need a limited living space. For these cats a single room set up just for them may be the answer.

In the limited space, it is easier for her to find her food and water bowls as well as her litterbox. Extra beds, ramps to windows, and places to safely "hide" can make this a deluxe mini apartment for a senior cat. Baby gates at the door will allow her to still hear and interact with the household, but from a safer space.

Some music is believed to soothe cats, so playing some might help, especially at nighttime (search for "music that soothes cats"). Some cats will settle down at night in a body wrap. Remember that this is generally not the best time to add a new pet to your household.

Finally, try to maintain a set routine. Meals at the same time every day and standard play or grooming times. Set aside time to simply sit with your cat and pet her. A senior cat with cognitive dysfunction can be a challenge, but with some effort, you can make her golden years a positive time for both of you. ■

## What You Should Know

Recognizing feline dementia can be difficult, especially at first. Gary Landsberg, DVM, DACVB, DECAWB, a behaviorist who is a member of the Fear Free initiative executive committee, developed an acronym he shared on DVM 360 to help us recognize this problem. The acronym **DISHA** can help you remember the main changes noted in senior cats with cognitive difficulties:

**Disorientation:** Getting lost in well-known areas.

**Interaction:** Cat may become more affectionate or rather unfriendly.

**Sleep:** Mixing up days and nights, sleeping at odd times.

**House soiling:** No longer seeks out litterbox.

**Activity:** May increase or decrease, and obsessive compulsive tendencies may appear, like obsessively licking her paw.



# IBD Can Wax and Wane

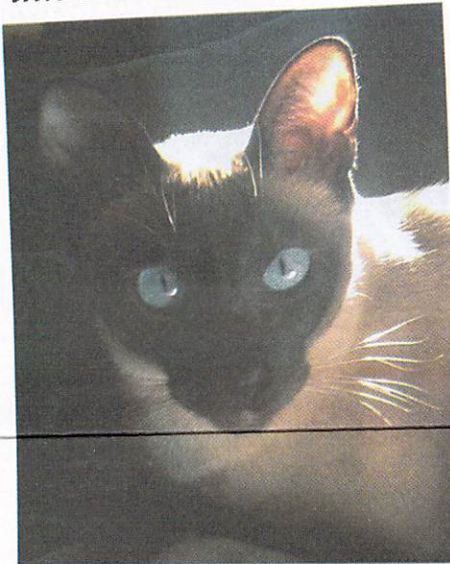
We have more to learn about this common disease

**Q** My son's 11-year-old Seal Point Siamese cat, Blue, was diagnosed with irritable bowel disease (IBD) in 2018. Her treatment with steroids and metronidazole went well for several years, but she has recently developed diarrhea again. Our veterinarian told us that she has probably gotten used to the dosage and we should see how it plays out. We are very concerned and wondering whether it is common for this type of relapse to occur in cats with IBD.

**A** Thanks for getting in touch, and I understand your concerns for Blue completely. IBD is a common disease of cats, and its management can be challenging in some cases. Perhaps a review of what we know about IBD with respect to mechanisms, diagnosis, and treatment is a helpful place to start.

IBD is a condition in which portions of a cat's gastrointestinal (GI) tract become chronically inflamed, resulting in a decreased ability to digest and absorb nutrients. The cause of this inflammation is the subject of ongoing research, but available evidence suggests that it is the result of a complex interplay between an affected cat's diet, immune system, GI bacterial populations, and perhaps environmental factors. While IBD can be diagnosed in cats of any age, it is most commonly diagnosed in middle-aged to older cats.

The definitive diagnosis of IBD



Blue's IBD-associated diarrhea returned, which can be a common relapse with this disease.

requires biopsies of the affected portions of the GI tract, obtained either via endoscopy (passage of a small flexible camera into the GI tract) or abdominal surgery. Both require general anesthesia, so in many cases, veterinarians will treat presumptively for IBD and monitor response before recommending biopsies to avoid the added (but usually manageable) risk of general anesthesia.

The primary disease that feline IBD must be distinguished from is small cell lymphoma (SCL), a type of cancer of the GI tract. Cats with IBD and SCL often have similar symptoms (diarrhea, vomiting, anorexia, lethargy, weight loss) and, while the treatment of these two diseases is often quite similar, cats with

SCL generally have shorter survival times than those diagnosed with IBD.

The treatment of IBD usually involves a combination of dietary modification such as a novel protein source or hydrolyzed diet (to remove protein components of the diet that may be stimulating the immune system of the GI tract to mount an allergic inflammatory response) combined with drugs that suppress the immune response, which include steroids, metronidazole, and, in severe cases, some chemotherapy drugs.

Supplementation with B vitamins, which may not be absorbed properly in cats with IBD, is often recommended. The effectiveness of probiotics and prebiotics in the treatment of IBD is controversial, although neither is likely harmful.

Cases of feline IBD that are non-responsive to more standard therapies may benefit from fecal transplantation (FT), a procedure in which feces from a healthy cat are transplanted in the GI tract of an affected cat in an effort to repopulate the GI tract with "beneficial" bacteria. FT requires either heavy sedation or general anesthesia.

It is not uncommon for cases of IBD to wax and wane over time, and therapies are adjusted on an individualized basis to minimize the use of steroids and other immunosuppressive drugs to the lowest dose that controls symptoms, given their potential side-effects.

I hope that this is useful, and please continue to work carefully with your veterinarian to ensure the best care for Blue. While I understand that managing feline IBD can be frustrating at times, cats with IBD can live high quality lives for long periods of time if managed appropriately.

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



This column is written 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 to consider for use with your question.

### Coming Up ...

- ▶ *Drawing Out the Nervous, Hiding Cat*
- ▶ *Your Guide to Urinary Tract Blockages*
- ▶ *Making Chemotherapy Easier on Your Cat*
- ▶ *Is That a Fracture? Now What?*

### © HAPPENING NOW...

**Beloved Professor Passes**—Alexander de Lahunta, DVM '58, Ph.D. '63, emeritus James Law professor of anatomy and de facto founder of veterinary neurology, died August 17 at the age of 88 at his home in New Hampshire. Regarded as a legend at the college and in the wider realm of veterinary sciences, de Lahunta was a world-renowned pioneer in veterinary anatomy, neurology, and education. Affectionately nicknamed "Dr. D.," de Lahunta was a beloved, influential teacher, and he enhanced the lives

and education of countless veterinary students at Cornell, including our own Dr. K.

**No U.K. Food Link**—PetFood Industry.com reports that the ongoing investigation by the United Kingdom Food Standards Agency did not find a causal link between certain cat foods and more than 130 cases of feline pancytopenia (see *CatWatch*, September 2021). The investigation did, however, identify high levels of mycotoxins. ■