



# CatWatch

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



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## IN THE NEWS ...

### Do beta blockers improve the lives of heart patients?

Beta blockers have proven effective in treating some people with hypertrophic cardiomyopathy, but their effectiveness in cats with asymptomatic HCM has not been established. However, researchers at North Carolina State University are now studying cats being treated with the beta-blocker atenolol to better determine if early medical therapy improves their quality of life.

HCM, the most common feline heart disease, causes thickening of the heart muscle, reducing blood flow and, in more advanced cases, oxygen levels throughout the body. The disease most commonly occurs in middle age, with males, Maine Coons and American Shorthairs especially predisposed. The cause is not known.

Beta blockers slow the heart rate, allowing more time for blood flow to the heart muscle, and reduce the amount of oxygen the heart uses. In some cases, the incidence of arrhythmias, or irregular heartbeats, is also lessened. ♦

## Kittens and the Aging Are Vulnerable

*Finding a simple blood test for feline infectious peritonitis could improve its diagnosis and prevent shelter outbreaks*

When a kitten or elderly cat shows little interest in food, loses weight, develops a persistent fever and succumbs to an untimely death, too many heart-broken owners are left to wonder: What was the cause of death?

One possible culprit is feline infectious peritonitis (FIP). The often-fatal disease usually goes undiagnosed, says Cornell University virologist Gary Whittaker, Ph.D. "The idea that FIP is a rare disease is not true. It can actually be quite common, and it's currently the leading infectious cause of death in cats under 2 years of age." What's more, there is no simple test for it. The only available vaccine



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is not generally recommended by the American Association of Feline Practitioners. And there is no known cure or effective treatment.

### Promising Research.

If Dr. Whittaker and his team researching FIP are successful, however, their promising work could lead to discoveries to make a simple, reliable diagnostic

blood test for FIP a reality — perhaps in as soon as five years, with government approval to follow. Ideally, the test will identify a mutation that sets the deadly FIP infection into action.

If that happens, it would bring the possibility of intervention or at least a drug for

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## They Jump, Paw, Cry, Stare and Meow

*The goals of their extensive repertoire of begging behavior: food or your attention — you're the mother cat*

Considering that kittens vocalize to their mothers for everything they want, it's not unusual for cats to meow or beg for food and attention from their owners. In cat-owning households, humans are the mother cats.

"There may be an underlying genetic component because the kitten who demands things survives," says Katherine A. Houpt, VMD, Ph.D., former president of the American College of Veterinary Behaviorists and emeritus James Law Professor of Animal Behavior at the Cornell University College of Veterinary Medicine.

Another predisposing factor in begging: Cats have been bred to remain dependent and kitten-like. "If owners reward vocalizing, their cats learn this works," Dr. Houpt

says. "Adult cats almost never meow at one another."

**They Train Us.** Cats use a range of vocalizations and behaviors to get what they want from people. They quickly learn that we reward meowing, crying, staring, jumping up or pawing. Although this training is often unintentional, cats beg because their owners have responded by feeding them or talking back when they meowed.

"The cat probably became trained to beg because every time he meowed, you gave him a treat because it was cute," Dr. Houpt says. "Later you decided it was not so cute and, in fact, was a nuisance, so you rewarded

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# CatWatch

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## SHORT TAKES

### A therapy cat on wheels

A Husky found the kitten lying in the street and gently carried him in his mouth home to his owner. Scooter had a broken spine and his back legs were paralyzed. Euthanasia would have been the likely fate for a kitten in similar shape. But Betsy Kennon, VMD, at Harts Run Veterinary Hospital in Fox Chapel, Pa., was determined to save his life — and she did. Hospital clients chipped in to buy Scooter a custom-made wheeled cart to get around.

Today, he regularly visits a nursing home and a rehabilitation hospital as a therapy cat. He serves as an “inspiration to the elderly and to patients who lack mobility due to injuries and strokes,” says the ASPCA. During one of Scooter’s first hospital visits, a stroke victim who doctors said would never open her eyes or speak suddenly did open her eyes and began chatting away like they were old friends. Her first word: kitty. The staff was in tears.

The ASPCA honored Scooter as the Cat of the Year at its annual Humane Awards Luncheon in New York City, along with other special animals and individuals who have made a significant impact on the lives of animals.

Dr. Kennon, who is now with the VCA Northview Animal Hospital in Pittsburgh, Pa., went on to adopt Scooter, who joined her four dogs, three cats, a lovebird and a tank of fish. She’s had to discourage him from getting at the fish but has noted that, unlike her other cats, he’s caught five mice.

### The top 10 breeds

The website Vetstreet examined purebred cats’ birth records in 2011 and came up with its top 10 list of the most popular cat breeds in the U.S.



**Scooter provides cheer and inspiration** to nursing home and rehabilitation patients.

Heading the list: the chatty, curious **Siamese**. The other breeds in order:

- |                      |                              |
|----------------------|------------------------------|
| <b>2.</b> Persian    | <b>7.</b> American Shorthair |
| <b>3.</b> Maine Coon | <b>8.</b> Manx               |
| <b>4.</b> Ragdoll    | <b>9.</b> Russian Blue       |
| <b>5.</b> Bengal     | <b>10.</b> Sphynx            |
| <b>6.</b> Himalayan  |                              |

### Gauging arthritis pain

Researchers at the University of Montreal are developing scales for identifying and quantifying pain caused by osteoarthritis. Drs. Mary Klinck and Eric Troncy are working on two scales: one designed for use by owners and another by veterinarians. So far, their work shows promise, and next steps include laboratory trials to increase the tests’ sensitivity and improve their ability to detect pain, says the Morris Animal Foundation Fellowship, one of the sponsors of the study.

Osteoarthritis is common in older cats who suffer the same painful joint degeneration that humans do. However, cats excel at masking pain, making the disease difficult to diagnose if observable signs such as lameness aren’t present.

Chronic pain limits function and may also contribute to behavior problems that can damage the human-animal bond, resulting, experts say, in euthanasia or the surrender of the pet to an animal shelter. Veterinary medicine has scales to measure sudden or surgical pain in cats, but those conditions differ from chronic pain. ♦

**The Siamese is the most popular cat** in the U.S., according to a survey.



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# The Great Debate: Canned vs. Dry

*They're fairly equal in dietary soundness and go through similar manufacturing, but canned has the edge for cats*

**W**ith all the marketing claims about the virtues of canned and dry food, it can be daunting to choose between them. Which is better tasting and which is the better value? The answers just might surprise you. Nutritionist Joseph Wakshlag, DVM, Ph.D, Associate Professor at the Cornell University College of Veterinary Medicine, provides clarity in this Q. and A. to help you move past hype to good health for your cat.

**Q.** Which is more nutritionally sound — canned or dry food — and why?

**A.** I would say they are pretty equal in terms of nutritional soundness, and there are many brands and styles. They go through similar manufacturing processes, although kibble gets extruded (a shaping and drying process) and canned gets retorted (heated at high temperature in a retort sterilizer), so it has to go through a heating process. For cats, canned is slightly better. Cats don't like new things, so give kittens both kibble and canned so they know both. If they end up with issues where one or the other is preferred due to a medical condition, you can choose the appropriate form.

**Q.** Which has the most calories?

**A.** Volume to volume, dry is more calorically dense and canned is typically higher in fat. If I took water out of the canned food and pulverized it into powder, measured a gram of each for caloric density, canned would be more calorically dense because it's higher in fat. But canned is 75 percent water, so on a volume basis it's actually fewer calories.

**Q.** Does dry food have excessive carbohydrates for cats?

**A.** There is no evidence that the carbohydrate in dry or even canned food is detrimental. Cats cannot handle certain carbohydrates well, such as fructose.

They can handle glucose well, but they absorb carbohydrates slower than dogs in general, yet they are assimilated into the body fine.

**Q.** Is it true that plant protein is used more frequently in dry food than canned? Can cats be healthy on plant protein without any meat-based protein?

**A.** Plant protein is found in both canned and dry foods. Canned or chunk style uses wheat-based protein. Dry more often uses corn-gluten protein, and both use soy-based proteins at times. Cats can use plant-based protein but need more of it than they would need of an animal-based protein. This is because the amino acid balance in plant-based proteins is not as good. But the right mix of plant-based proteins can be used to make a diet complete. Egg, dairy and meat are best for cat amino acid balance. Soy is the best plant-based protein source.

**Q.** Do we know if dry or canned food is the better tasting and why?

**A.** It's personal preference. Foods higher in protein and fat are more palatable, so canned tends to be more palatable.

**Q.** Is the moisture in canned food an advantage or disadvantage?

**A.** For cats who tend to have a predisposition to urinary tract problems, it may be an advantage.

**Q.** Is it important to choose food only from companies that do feeding trials endorsed by the American Association of Feed Control Officials?

**A.** Very few companies do those, and most small niche brands don't. It's just one more layer of guarantee.

**Q.** Does the lack of preservatives make canned better than dry? A few years ago consumers were up in arms about the ethoxyquin in kibble.



**Canned food** tends to be more palatable because it's higher in protein and fat.

**A.** Some canned foods still have preservatives, but they don't get oxidized as quickly as dry. You can find canned or kibble with natural preservatives that tend to be benign. Ethoxyquin is not bad in the quantities used, because we know after tons of toxicity trials that it takes a lot of it to create kidney or liver damage. It's not used much anymore, and if it is, you'll never know because it doesn't have to be labeled if it's already mixed into an ingredient being used like animal fat or fish meal, for example, and not directly added by the pet food manufacturer.

**Q.** Does kibble have any advantage because it can help prevent dental tartar buildup, or is that a myth?

**A.** Most kibble doesn't have any evidence that it helps tartar. The tooth hits it and it shatters. It doesn't grind it up. Some kibble is designed to have a fiber matrix that actually allows the tooth to sink into kibble, and those are good for tartar, but there aren't many of those on the market. You should look for a therapeutic brand, the kind only veterinarians can sell, and look for the Veterinary Oral Health Council seal.

**Q.** Does canned or dry make worse-smelling feces than the other?

**A.** In general, canned is usually higher in protein, so canned will likely have a stronger odor. But a high-protein kibble will do the same.

**Q.** Which is the best financial value?

**A.** Between two similar brands of foods from the same manufacturer, dry usually wins the price war. ♦



# There Are No Worms in Ringworm

*The fungus is spread through contaminated soil and easily transmitted to other animals — and you*



Cornell

Fungal spores invisible to the naked eye cause ringworm. If a cat digs into contaminated soil or tangles with a ringworm-infected feline and develops this common skin infection, he can transmit it to other cats, dogs and even humans. The malady can affect the skin, hair and claws and take up to a year to resolve. And despite its name, it has nothing to do with worms.

"Ringworm is a very old term and was coined when people thought the lesion was caused by a worm — a larva to be more precise — in the skin," says dermatologist William H. Miller, Jr. VMD, Medical Director of the Companion Animal Hospital at the Cornell University College of Veterinary Medicine.

**No Early Signs.** Initially, cats don't necessarily show signs of the disease, though they will be contagious. As it progresses, owners may see a rash, circular bald spots, scaly or crusty skin, stubby hair, altered hair color, dandruff and excessive grooming. The infection can also develop in hidden areas between the claws.

Hair from the infected cat will fall off his body, spreading fungal spores on surfaces and objects that can infect others for long periods of time. New animals — and people — can become infected when the hairs come into contact with the skin. Animals and people with immune deficiencies or pre-existing skin diseases are much more susceptible because their skin is already damaged.

On the bright side: "Normal skin is hard to infect," Dr. Miller says. "So if you take a fungal organism and sprinkle it on perfectly normal skin, the chances are really good that will just fall off and not cause any infection. It may, but in many cases it doesn't."

**Ringworm can affect the skin, hair and claws, and take up to a year to resolve.**

**A Persistent Presence.** It's a myth that you can easily rid your house of ringworm once you have it. In a worst-case scenario, some catteries have been forced to euthanize all their animals because ringworm persisted as long as any animals were present, Dr. Miller says.

Ringworm spores can float in air currents and drop into deep-pile carpets. "How good is your vacuum?" Dr. Miller asks. In front of a sofa, it's likely that vacuuming is done well. "But unless you move the sofa," he says, "you and I will probably miss those hairs in back."

If you have pristine ceramic tile floors, disinfect surfaces and dispose of items that can't be disinfected — such as the cat tree — then perhaps your house will become spore-free.

If left untreated, a cat's case of ringworm probably will eventually go away, but "it may take nine months to a year," says Dr. Miller. Diagnosis can be done in various ways, such as taking a culture or a skin biopsy. "You can't just look at an animal and say: It has ringworm."

All but one kind of ringworm is virtually 100 percent curable. Veterinarians typically treat cats with both an inexpensive oral medication and a topical cream or ointment for visible scabby areas. The shortest course of treatment takes 45 days, but many cases take considerably longer. By contrast, an extraordinarily rare ringworm that affects animals with immune deficiency can develop under the skin and be fatal.

**The bottom line:** Whenever a cat has a dramatic change in his haircoat — or the hair is falling out — it's always best to consult his veterinarian. ♦

## LONG-HAIRED CATS MAY BE MORE AT RISK

Ringworm — feline dermatophytosis — is more common in warm, humid regions of the country. It varies in frequency depending on the climate and the management of the cat, says dermatologist William H. Miller, Jr., VMD, at Cornell.

Cats living together closely make the disease easier to transmit, with animals in shelters or kennels particularly at risk. Still, any cat of any breed can contract it, with kittens, cats with compromised immune systems and long-haired cats more inclined to contract it.

**Example:** You took your perfectly healthy cat to a reliable grooming parlor. But the groomer became busy and the previous dog or cat had an early case of ringworm that wasn't yet noticeable. Because the groomer didn't have time to clean the cage as well as it should have been, the next pet could contract ringworm.

"It's a disease of contagion. With direct observation of your pet, it's not really easy to get it," Dr. Miller says. "But in the real world where things can happen — nobody pays attention to it, where nobody is watching the animal — you can pick it up with some ease."



**BEHAVIOR ... (continued from cover)**

him intermittently only when you couldn't stand it any more. You have now trained him to meow many, many times for the intermittent reward."

In her book "Domestic Animal Behavior" published by Wiley Blackwell, Dr. Houpt writes that cats respond to various types of reinforcement schedules. In laboratory studies, cats have been conditioned to meow 15 times for each small food reward. "The relevance is that if you give in to the cat after he has vocalized five times, he may meow 10 times for the next meal before he gives up," she says.

**Table Jumpers.** Meowing is a common feline begging behavior, but Dr. Houpt says other food-seeking behaviors include pacing, following or rubbing against the owner, jumping onto tables and knocking objects off counters. "Although these behaviors can be annoying, most people don't mind if their cat meows or rubs on them because it is a form of communication between human and cat."

Cats are smart and creative, she says. "They will jump up to get your attention. I know cats who sit on dining room chairs or actually sit up and beg like a dog. But most people complain about their cats waking them and begging for food at 5 a.m."

To stop cats from begging, ignore them. "Start ignoring the meows from the moment they're kittens," Dr. Houpt advises, because "the younger

the animal, the quicker they learn. But not many people have the heart or patience" to ignore pets, and once they learn a behavior is rewarded, cats can be difficult to retrain. "You could try not giving food for meowing — waiting until the cat is quiet — but it's very hard both for the owner to do and for the cat to understand that he's rewarded for silence."

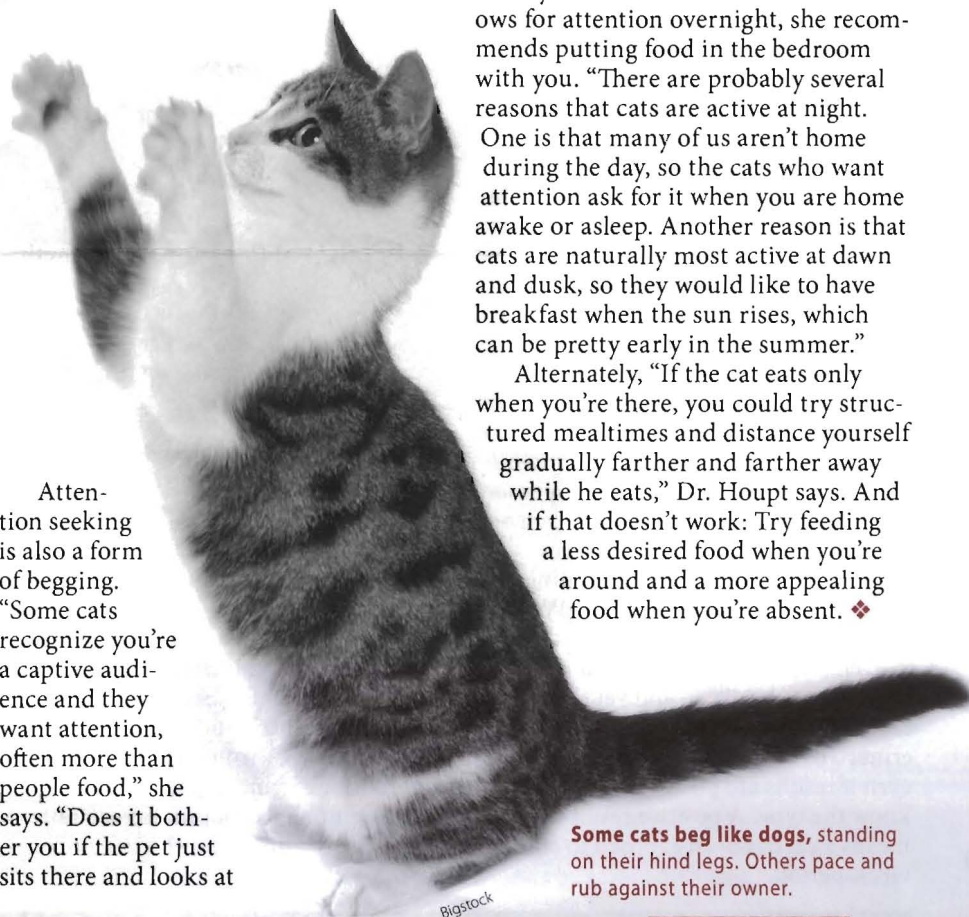
Attention seeking is also a form of begging. "Some cats recognize you're a captive audience and they want attention, often more than people food," she says. "Does it bother you if the pet just sits there and looks at

you? For most people, it's the crying or vocalizing that irritates."

**Mealtime Company.** Many cats may insist you watch them while they eat. "They prefer to eat when owners are there, maybe to protect them as prey animals," says Dr. Houpt. "It's safer to eat when the mother cat is there."

If your cat won't eat alone but meows for attention overnight, she recommends putting food in the bedroom with you. "There are probably several reasons that cats are active at night. One is that many of us aren't home during the day, so the cats who want attention ask for it when you are home awake or asleep. Another reason is that cats are naturally most active at dawn and dusk, so they would like to have breakfast when the sun rises, which can be pretty early in the summer."

Alternately, "If the cat eats only when you're there, you could try structured mealtimes and distance yourself gradually farther and farther away while he eats," Dr. Houpt says. And if that doesn't work: Try feeding a less desired food when you're around and a more appealing food when you're absent. ♦



Some cats beg like dogs, standing on their hind legs. Others pace and rub against their owner.

## TACTICS TO STOP THE NIGHT FOOD STALKER

Unlike dogs who beg for food at the table, cats will beg for food at what seems like an odd hour to us. "The real complaints are of cats at night making noise, waking up owners because they want to be fed," says behaviorist Katherine A. Houpt, VMD, Ph.D. If a begging cat is annoying, she suggests that you:

- ◆ Feed your cat before your bedtime.
- ◆ Feed him before you eat if he's begging at meals.
- ◆ Leave food out overnight.
- ◆ Try a timed food dispenser or provide kibble-filled toys for distraction and exercise, especially for overweight cats. Dr. Houpt recommends a toy that dispenses little moving balls, each filled with a treat. "You could set it to go off on a timed basis, and the cat can chase the balls and have to work to find the kibble."
- ◆ Play with your cat before bedtime. Leave out favorite toys, such as puzzle toys, for overnight activity.
- ◆ Put the cat in another room when you're sleeping or eating.
- ◆ If your cat jumps onto the table or your lap when unwanted, gently lift him down. "And keep doing it," Dr. Houpt says.



## FIP ... (continued from cover)

treatment. "That's a little long range but definitely a practical application," says Dr. Whittaker, a professor in the College of Veterinary Medicine's Department of Microbiology and Immunology.

Diagnostic screening would also help prevent shelter outbreaks of FIP. "Today, it's almost the worst infectious disease for a veterinarian to try to diagnose," Dr. Whittaker says.

Andrea N. Johnston, DVM, DACVIM, a Clinical Instructor in Internal Medicine at Cornell, says it's a misconception that the complex disease can now be diagnosed with a blood test. "It is very challenging to diagnose. A reliable blood test for FIP would allow early detection of the disease, eliminate the need for costly and invasive diagnostics, and potentially improve our ability to treat cats with FIP."

**Uncovering mysteries.** As Dr. Whittaker and his team conduct their painstaking research to uncover the mysteries of FIP, it sounds like a whodunit.

Among a host of issues surrounding the disease, one problem is this: While it's known that feline coronavirus leads to FIP, there are two forms of it — one benign, one deadly — and yet they look exactly alike under a microscope. Veterinarians can test for coronavirus, but even if results are positive, they won't know the type. A positive result simply means a cat has been exposed to coronavirus, period.



**"The idea that FIP is a rare disease is not true,"** says Cornell virologist Gary Whittaker, Ph.D., whose team is researching the disease. "It's the leading infectious cause of death in cats under 2 years of age."

"We've had samples from breeders and shelters where 100 percent are positive for feline coronavirus," Dr. Whittaker says. Such findings turn out to be practically meaningless.

While a 2005 study published in the *Journal of Virological Methods* stated that coronaviruses "are ubiquitous among cat populations," only some cats go on to develop the deadly form of the disease.

By some estimates, five to 10 percent of infected cats eventually develop the deadly form because of a virus mutation or aberrant immune response. But FIP often can go undetected. To confirm a diagnosis, veterinarians usually use biopsies and reports from pathologists, who examine tissues under a microscope. That's after examining the cat for clinical symptoms, which can mimic other diseases.

## IS YOUR CAT AT RISK?

Cats with weak immune systems are likeliest to develop feline infectious peritonitis (FIP), a viral disease caused by certain strains of feline coronavirus. Other vulnerable groups include kittens, aging cats and those already infected with feline leukemia virus — although any cat carrying a coronavirus could develop it.

Animals in shelters, kennels and multi-cat households are also more at risk; cats live closer together, making the disease easier to transmit.

Most affected cats are under 2 years of age. Purebreds appear to have greater vulnerability, especially Asian breeds, such as the Birman and Himalayan.

As a general trend, "I see the disease is on the increase," says Cornell virologist Gary Whittaker, Ph.D. He surmises that's due in part to more high-density housing of cats within shelters and breeding catteries. That means more opportunity for the level of virus to build up in the environment. Additional viruses in the

environment result in their randomly firing mutations and more chances of a cat contracting a virus that causes a deadly form of FIP.

Diligence in attempting to keeping the virus at bay — by cleaning litter boxes daily, for example, and thoroughly cleaning and disinfecting the boxes regularly — won't necessarily prevent FIP. "It's not anywhere near a certainty it will do any good, but it certainly won't do any harm," Dr. Whittaker says.



**It Started With SARS.** While Cornell has a long history of work on FIP, Dr. Whittaker's involvement began almost by happenstance. He had been researching the virus that causes the human respiratory disease SARS (severe acute respiratory syndrome) in the wake of the 2003 Hong Kong outbreak that appeared poised to become pandemic. The disease is caused by a coronavirus, specifically the SARS coronavirus. That prompted him to study coronaviruses in general, and he soon became fascinated by the feline coronavirus.

"I've been studying viruses for some time, and this is one of the most interesting," Dr. Whittaker says of feline coronavirus, a precursor to FIP. Actually, FIP isn't a single virus. "It's a crazy virus — a cloud of viruses," he says. And like a cloud in the sky changes, so does FIP in a single cat. No two FIP viruses are alike; there is always variability.

All the viruses appear to have a biological switch, kind of like a light switch that turns the virus on. But a mutation in the viral genome can change the switch and instead turn on FIP in a cat, Dr. Whittaker says. The thing is, though, that "It's never the same change. Almost every FIP cat has a different switch. It's a different change every time." Not only that, even within an individual cat different tissues will have different switches to turn on FIP. "Very intriguing and almost unique," Dr. Whittaker calls the process. "We're trying to figure out what's happening."

**Studying Blood Samples.** His team is gathering samples of blood or tissue — mainly from deceased cats — from around the country to examine. So far, they've found the switch in the virus in the feline gastrointestinal tract. In a healthy cat, six identical amino acids comprise the switch. If you look at the same six amino acids in a cat with FIP, Dr. Whittaker says, at least 95 percent of the time there is a change in one of those amino acids. His team believes this switch is largely driving the syndrome, though, as noted, not all cats have the same switch.

Team members are working closely with pet owners, breeders and veterinarians. Ideally, they want to follow healthy cats who may develop the full-blown syndrome. In late 2011, they found their first example of such a situation. A breeder who had been having problems with FIP allowed the team in 2008 and 2009 to collect



**Feline infectious peritonitis** is more easily transmitted in animal shelters and multi-cat households.

samples from all the young cats at her cattery, all of whom were healthy at the time. In November 2011, the team got a call from a veterinarian saying one of the cats had just been euthanized due to FIP.

The team jumped into action. They compared the virus in the deceased cat with a 2008 sample when the cat was healthy. A mutation had indeed occurred. To help ensure the finding wasn't a fluke, the team obtained a sample from a still-healthy cat from the breeder to compare that virus with the cat's 2008 sample. The healthy cat's sequence hadn't mutated.

Admittedly, the finding was based on only one cat, Dr. Whittaker says, "But it kind of strengthens the hypothesis. It ruled out the possibility of random gene variation."

One ongoing question is: Does a virus make just one mutation? Or does it progress, making a different mutation and still another? If FIP moves to different tissues, the virus may very well make different mutations in different tissues, Dr. Whittaker says.

For now, FIP occurs worldwide and remains an enigma. As Dr. Whittaker describes the disease, it's a big black box in veterinary medicine — meaning it exists without our knowledge of its internal workings. ♦

**FOR MORE INFORMATION ON FIP**  
Please visit the **Cornell Feline Health Center** website at [www.vet.cornell.edu/fhc/brochures/fip.html](http://www.vet.cornell.edu/fhc/brochures/fip.html).

## WHAT YOU SHOULD KNOW

Early signs of feline infectious peritonitis include:

- ◆ Mild upper respiratory infection with sneezing, watery eyes and nasal discharge.
- ◆ Gastrointestinal problems such as diarrhea.
- ◆ Loss of appetite and weight loss.
- ◆ Lethargy and depression.
- ◆ Rough hair coat.
- ◆ Fever.
- ◆ Eye inflammation.





Elizabeth

Elizabeth is thankful for the assistance of **Bruce G. Kornreich, DVM, Ph.D., DACVIM**, Associate Director of the Cornell Feline Health Center, in providing the answer on this page.

**PLEASE  
SHARE YOUR  
QUESTIONS**

We welcome questions on health, medicine and behavior, but regret that we cannot comment on prior diagnoses and specific products. Please write CatWatch Editor, 800 Connecticut Ave., Norwalk, CT, 06854 or email [catwatcheditor@cornell.edu](mailto:catwatcheditor@cornell.edu).

**COMING UP ...**

- ❖
- DENTAL  
DISEASE**
- ❖
- ADOPTING  
A STRAY**
- ❖
- GIVING  
MEDICATION**
- ❖
- WEIGHT LOSS  
IN SENIORS**
- ❖

**Q** Our 6-year-old kitty, Elmo, has just been diagnosed with hypertrophic cardiomyopathy. This was a terrible shock to us, as he was not showing any signs of heart disease, and we want him to be around for a long time. We've been told that this is a common disease in cats, but we are terribly worried and want to know what we should be doing to keep him as healthy and happy as we can.

Sincerely,  
Broken Hearted

**A** I'm sorry to hear about Elmo's diagnosis and glad that he is not showing any signs of heart disease right now. Hypertrophic cardiomyopathy (HCM), a disease characterized by thickening of the heart muscle, is the most common heart disease in domestic cats, and many cats diagnosed with HCM do not show symptoms of disease when they are diagnosed.

"It is pretty common for cats with HCM to be referred to a veterinary cardiologist for evaluation after their primary veterinarian hears a murmur during routine physical examination," says Bruce Kornreich, DVM, Ph.D., DACVIM, the Associate Director of the Cornell Feline Health Center and a board-certified veterinary cardiologist.

HCM is diagnosed by echocardiography, and it is important to rule out high blood pressure and hyperthyroidism in cats with thickened heart muscle before arriving at a diagnosis of HCM, as these conditions can also cause thickening of the heart. Although HCM can be a very serious disease that can lead to congestive heart failure or the formation of potentially life-threatening blood clots, cats may live with HCM for prolonged periods of time (months to years) without overt signs of illness.

The cause of HCM remains to be determined, although mutations in a number of cardiac

proteins have been identified in affected cats. Maine Coon cats, American Shorthairs and Ragdolls are predisposed to the development of HCM, and this disease affects male cats more commonly than females.

Cats with HCM may develop congestive heart failure, which may cause them to breathe more rapidly (tachypnea) and with more effort than normal (dyspnea), and any cat who shows signs of tachypnea or dyspnea should be taken to a veterinarian immediately. Another potentially devastating consequence of HCM is the formation of blood clots in the heart, which may be ejected out to the body and block blood supply to affected regions. The site of blockage is most commonly at the origin of the femoral arteries, which supply blood supply to the hind limbs, so cats who experience clot formation may present with acute, or sudden, onset of hind limb paralysis. These cats are often quite uncomfortable, and cats with clot formation generally have a poorer prognosis.

Cats with HCM may benefit from treatment with diuretics, drugs called angiotensin converting enzyme inhibitors and/or beta blockers, and cats who may be at risk for the development of blood clots may be treated with aspirin or a drug called clopidogrel (Plavix). Asymptomatic cats with HCM, however, are often not treated early in their disease, and careful monitoring of respiratory rate (normal is between 20 and 30 per minute), activity level, and attitude, as well as regular follow up with their veterinarian, are recommended in these cases.

I hope this helps you in understanding Elmo's disease, and make sure to continue regular follow-up with his veterinarian. Please keep in touch and drop me a line to let me know how he is doing. ❖

Best regards,  
Elizabeth

**CORRESPONDENCE**

The Editor  
CatWatch  
800 Connecticut Ave.  
Norwalk, CT 06854  
[catwatcheditor@cornell.edu](mailto:catwatcheditor@cornell.edu)

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