



# Cat Watch

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



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What are his risks after possible exposure to the parasite *Toxoplasma*?

## IN THE NEWS ...

### 'Any Pet Increases Social Skills of Autistic Children'

Reports of dogs' improving the social skills of children with autism have been widespread. A University of Missouri researcher, however, has found that any pet in the home can increase the children's assertiveness, such as introducing themselves and asking for information.

Gretchen Carlisle, a research fellow at the Research Center for Human-Animal Interaction at the College of Veterinary Medicine, studied 70 families with autistic children ages 8 to 18. About half of them had cats.

Her findings: Younger children bonded more strongly to smaller dogs than large ones, but parents reported strong attachments between their children and other pets, such as cats, fish or rabbits. "It serves as evidence that other types of pets could benefit children with autism," Carlisle says.

One caution from behaviorist Katherine Houpt, VMD, Ph.D., at Cornell: "Children may have difficulty distinguishing real from stuffed animals, especially small animals like cats. Be sure that the autistic child is gentle with the cat." ♦

## Content, Agitated, Fearful, Aggressive?

*Emotion is evident in their body language from nose to tail if we learn to read and interpret the subtleties*

Scientists estimate that cats have lived with us for at least 9,000 years, and surveys show that many of the 45 million households in the U.S. today consider their 96 million cats bona fide members of the family. Yet after all these years, how well do we really understand cats?

It turns out not that well, says Katherine Houpt, VMD, Ph.D., animal behaviorist and professor emeritus at Cornell University College of Veterinary



**Dilated pupils:** a sign of fear and potential aggression.

Medicine. Cats' body language is daunting for many of us to interpret, particularly because of their anatomy.

### Facial Changes.

"One reason may be that cats have more flattened faces, so it is difficult to see how their face changes," Dr. Houpt says. "Also, although both cats and

dogs have furry faces, somehow the cat seems to hide more change in muscle tone. Cats have longer and fluffier fur, and so if

*(continued on page 6)*

## Learn the Truth about Supplements

*Some may be helpful, but their safety isn't regulated, and few large studies of effectiveness have been done*

Manufacturers in the \$1-billion pet supplement market would like cat owners to believe that an array of their products, ranging from glucosamine to fish oil to vitamin pills, will help our cats live longer, healthier lives. Whether those supplements are actually effective is not known. Few large-scale studies have been done, and governmental oversight and regulations do not exist.

Nutritionist Joseph Wakshlag, DVM, Ph.D., ACVN, ACVSMR, at Cornell University College of Veterinary Medicine believes there is little proof that many of the promotional claims about supplements are accurate; however,

one study on deep-sea fish oil has shown it can be beneficial. Dr. Wakshlag, president-elect of the American College of Veterinary Nutrition, explains more about the fish oil study in the sidebar on Page 5 and on supplements in general in the following Q & A.

**Q** To help clear up any confusion, would you please provide a definition for a nutritional or food supplement?

**A** It's usually something being used to either mitigate or prevent a disease process and enhance the overall well-being of an animal.

*(continued on page 4)*

# CatWatch

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## SHORT TAKES



**More than half** of cat owners also have dogs.

## Do You Fit the Profile of a Typical Cat Owner?

Pronouncements about "cat people" always attract a big audience whether online, in print or other media. Facts about cat ownership are harder to come by and far more fascinating. Case in point: the National Pet Owners Survey 2013-14 from the American Pet Products Association.

Its 558 pages are available to non-members for \$3,200, perhaps for those with an eye toward entering the recession-proof pet market with their million-dollar invention. More than 3,000 new products debuted at the association's trade show last year.

For the sole pleasure of comparison to other owners, however, here's telling demographic information from the survey. More than a third — 37 percent — of U.S. households have cats for a total of 96 million cats. (Dog ownership is at 83 million.) Overall, pet owners tend to be better educated, living in family households, with high home ownership. Specifics from the survey about cat owners, given mostly in averages:

- ◆ Amount spent on their cats in the past 12 months: \$461
- ◆ Amount spent on food: \$203
- ◆ Fees for veterinary care: \$193 for a routine visit, \$382 for surgery
- ◆ Those obtaining their cats from a friend or relative: 32 percent, or from a shelter or humane society, 26 percent
- ◆ Cost of obtaining a cat: \$43
- ◆ Years as a cat owner: 18.7
- ◆ Cats in the home: 2.11
- ◆ Those also owning dogs: 53 percent, which skews the stereotype of ardent cat-only owners.

Other surprises were that more than 90 percent of the cats are spayed or neutered, and 64 percent are indoors during the day, 76 percent at night. Responding to the question of where their cats sleep at night, whether under the bed, on a rug, a window sill or other location, 59 percent of owners reported that their cats sleeps with an adult in bed. No surprise at all.

## Stores Ban Chinese Treats

The FDA continues to investigate a possible connection between illnesses in cats and dogs after eating chicken, duck or sweet potato jerky treats from China. In the latest update, the FDA says the reports involve more than 5,600 dogs, including 1,000 canine deaths, 24 cats and three people. "There does not appear to be a geographic pattern," the agency says, nor has it established the cause.

Meanwhile, two major retailers no longer carry the treats. Petco removed all remaining Chinese-made dog and cat treats from its website and 1,300 stores because of health concerns. Its treats are now made in the U.S. or other countries, including the Netherlands, New Zealand, Australia and South America, says Petco Vice President John Sturm.

PetSmart Inc., which also has 1,300 stores, planned to have all the treats off its shelves by March. Both companies had been moving toward the change since last year.

The FDA's Center for Veterinary Medicine has conducted more than 1,200 tests, visited jerky pet treat manufacturers in China and collaborated with academia, industry, state labs and foreign governments, and has found no cause for what it calls the mysterious and elusive outbreak of the illnesses.

Signs include decreased appetite and activity, vomiting, diarrhea (sometimes with blood or mucus), increased water consumption and/or increased urination. Severe cases have developed pancreatitis, gastrointestinal bleeding and kidney failure, the FDA says. ◆

# When Seniors Lose Bladder Control

*Causes of age-related urinary incontinence range from blockages and disease to the environment*

If your cat is more than 10 years of age, and you see him arising from a nap in a puddle of urine or with a moist rear, he could have age-related urinary incontinence. The problem, frequently occurring in senior and geriatric cats, has several causes.

"It often results from urinary bladder or sphincter problems," says Leni K. Kaplan, DVM, MS, a lecturer in the Community Practice Service at Cornell University College of Veterinary Medicine. "However, incontinence can also be related to anything obstructing urine outflow, such as a tumor or stone. The bladder may then over-distend, and the cat may 'leak' if he remains in one place for a while."

Bacterial bladder infections, or cystitis, can cause an urgent need to urinate. Cats will strain but produce only small amounts of urine, often colored with blood. They can also stop eating and hide because of the pain.

Among other causes of urinary incontinence:

- ◆ Feline Lower Urinary Tract Disease, which often has no discernable cause although stress has been cited, as has eating dry food that reduces urine production.
- ◆ Other diseases including diabetes, feline leukemia and brain tumors.
- ◆ Spinal cord and peripheral nerve problems.
- ◆ Arthritis of the back hips or legs, which makes it painful to climb into the litter box and maintain the posture needed to eliminate, thus preventing the bladder from fully emptying.
- ◆ Manx, the breed born without tails, can suffer incontinence because of a hereditary spinal malformation.

Sometimes the cause is simpler. "Geriatric cats sometimes sleep so deeply that they are not awakened by the urge to urinate," Dr. Kaplan says.

Environment can also play a role. "If aggression from other pets is deterring a cat from using the litter box, where he feels comfortable and not threatened, he may 'hold it in,' causing the bladder to overflow when sleeping," Dr. Kaplan says.

"A cat who is truly incontinent isn't able to control when and where he leaks. By contrast, inappropriate urination is not typically done where the cat sleeps. The best way to tell is to observe your cat. If he is posturing to urinate intentionally, then he is not incontinent."

**Thorough Testing.** A diagnosis of incontinence begins with a history and complete physical exam, including palpation of the urinary bladder. Tests include a urinalysis to detect a bladder infection; a complete blood count to check for systemic infection; a chemistry panel to determine if the kidneys and other organs are functioning normally; and an abdominal X-ray or ultrasound to check for stones or other diseases. If the cat shows neurologic impairment, such as difficulty walking or defecating, other diagnostics may be warranted.

Cats who are incontinent due to poor sphincter control are more prone to urinary tract infections because bacteria can easily ascend into the urinary tract, Dr. Kaplan says. "Twice-yearly urinalysis can ensure that any brewing medical problems are caught early on." Oral medications can help with sphincter control (phenylpropranolamine or prazosin) and urinary bladder muscle control (bethanechol).

If arthritis pain is a factor, medications can help with that, too. Veterinarians may also offer medications for underlying conditions such as pregabalin for neurologic conditions and opioids such as buprenorphine. And they may administer Adequan (chondroprotectant) injections for joint health. "Acupuncture can be a good treatment modality for incontinence caused



Geriatric cats can sometimes sleep so deeply that they are not awakened by the urge to urinate.

by spinal cord or lumbosacral disease," Dr. Kaplan adds. The efficacy of the latter two treatment options are, at this time, the subject of debate.

If medications aren't effective or until they take effect, owners can learn how to massage and gently empty the urinary bladder on a schedule, rather than having the distended bladder leak urine, Dr. Kaplan says. "Though this option can help control the leakage, it will not control the underlying cause of incontinence."

Owners can help their cats by making sure they have easily accessible litter boxes, Dr. Kaplan says. "Keep litter boxes available in different rooms and on different floors of the house. Especially for senior cats, try to help them avoid stairs."

**Skin Issues.** Irritated skin is also an issue. "Urine scald can develop as the cat's skin becomes tender and painful," Dr. Kaplan says. Application of a diaper rash ointment or petroleum jelly to the area can act as a barrier. Avoid topicals containing zinc, which are toxic to pets. Kitty "diapers" can protect cats from licking topical barriers and also help manage leakage.

Prognosis depends upon the cause of the incontinence and the individual cat's response to treatment. "I have one feline patient with incontinence following a traumatic event as a youngster," Dr. Kaplan says. "His owner has learned to express his bladder. The cat has several pairs of 'piddle pants' and is on oral medication as well. I'm happy to report that he's doing great!" ♦

**SUPPLEMENTS** ... (continued from cover)

**Q** Does the government regulate them in any way for safety?

**A** No, they are not regulated by either the FDA or feed control regulations, and for the manufacturer that's the beauty of a supplement. You can put anything you want on the market, and you don't have to do any efficacy testing. Industry-supported regulatory bodies are now out there to help ensure you are getting what the bottle says, but manufacturers often don't put in as much of the ingredient as they probably should to have any true effects at preventing or treating a problem, just like human supplements. Concentrations are usually extremely low, so it's hard to get appropriate pharmacological concentrations in the typical over-the-counter supplement.

Let's say a tablet in a bottle of lycopenes (an antioxidant that gives tomatoes



Common supplements for cats include those for support of the liver, kidney and joints.

their color] is 10 milligrams, depending on the manufacturer. A pharmacologic dose for a cat might be 30 milligrams per kilogram [2.2 pounds] to get high-serum concentrations that might be effective. So a 4-kilogram [8.8-pound] cat would need 120 milligrams or 12 tablets a day!

The manufacturer Nutramax does a lot of testing for safety, and that's why their products are trusted by most veterinarians. They have taken a lot of toxicologic and pharmacologic steps and have shown that they deliver the proper dose and in some cases have beneficial effects.

But be cautious about using supplements. Just because your neighbor said it's a good supplement, ask your cat's vet first before you give it to your pet. Cats are special in veterinary medicine due to their carnivore metabolism.

**Q** Why don't manufacturers test supplements?

**A** Before the Dietary Supplement Health and Education Act (DSHEA) was passed in 1984, dietary supplements — veterinary or human — were subject to the same regulatory requirements as other foods. The new law, DSHEA of 1994, says the supplement manufacturer is responsible for determining if a supplement is safe and that any claims about them are backed up by enough evidence to show the claims aren't false or misleading. Under this law, supple-



**Don't trust word-of-mouth testimonials** about supplements. A veterinary consultation is a must because of cats' carnivore metabolism.

ments do not need to be approved by the FDA before they go on the market, nor do they have to give evidence of safety or effectiveness to the FDA unless it has a new ingredient, in which case safety data is required on the new ingredient but not anything on its effectiveness.

A lot of money is required to show beneficial effect — the amount is mind numbing — and it's not a lucrative enough industry to do longevity studies. If you look at some of meta-analyses of glucosamine chondroitin, it appears some studies say it helps maintain cartilage. The Catch-22 in veterinary medicine is that you won't see longevity studies. I've talked to some companies a bit about doing safety and longevity studies to no avail. A really good study with enough patients is going to cost a minimum of \$100,000. Most companies look at the return on that, and they also wonder what happens if the study proves their product to be useless or harmful.

**Q** The goal of the National Animal Supplement Council is to police the industry because there are no regulations. Do you think it's effective?

**A** It's a good step in the right direction to get some incentive on supplements and mildly police the situation. Their members are supplement manufacturers. Strict guidelines for labeling and marketing of dietary supplements

## A NUTRITIONIST'S TOP RECOMMENDATIONS

Generally speaking, which supplements are beneficial for cats? Which are essential for their health, especially as they age and need to maintain mobility and cognitive ability?

Coming from his perspective as a nutritionist and director of the Sports Medicine and Rehabilitation Service at Cornell, Joseph Wakshlag, DVM, Ph.D., recommends disease-modifying agents such as:

- ◆ Glucosamine and chondroitin to help maintain joint cartilage.
- ◆ Fish oil as a natural anti-inflammatory.
- ◆ S-Adenosylmethionine during liver compromise. Some of the Nutramax products are highly recommended, such as Denamarin (S-Adenosylmethionine, or SAME, for liver support, as approved by your cat's veterinarian.

for people were created with DSHEA. This law watches the claims made by supplement manufacturers and doesn't allow them to make claims that sound like their supplement is a drug that can cure or prevent a disease. DSHEA does not cover animal supplements, however, which is why some manufacturers grouped together to form NASC.

**Q** What supplements are most commonly given to cats?

**A** It depends on the disease, but the top five are liver support, kidney support, joint support and then potentially antioxidants and anti-cancer. Those are the ones that get the most play.

**Q** Can we presume that anything that works for people works for our cats?

**A** Probably not. Part of it is that if we look at simple things like antibiotic

dosing, dogs and cats usually require higher doses compared to people because their metabolism and elimination rates are often higher. Animals usually metabolize medication more quickly. The same can be said for antihistamines, and in most cases steroid doses are higher in cats. The question becomes: Will supplements need to be given in higher doses, too?

**Q** Do we need to talk to the vet before giving supplements to our cats?

**A** Yes. I think it's pretty important because there are certain things that can be harmful. Years ago lipoic acid was a popular antioxidant. People were giving it to their cats and some died.

**Q** Is the glucosamine for people the same glucosamine for pets? If it is, can you give cats the human supplements?

**A** There is not a lot of data to suggest that it's any different, so often when I have cost-conscious clients, I will send them to the human pharmacy. For an average large dog, doses are similar as for people. You have to split pills for a cat and in many cases the dose is too small to use a human supplement.

**Q** What is your take-away message for owners about giving supplements to their cat?

**A** There are supplements like fish oil and glucosamine and chondroitin that likely have some modest effects that can help cats as they age so they should be considered. As we learn more about supplements and toxicities in cats, there will be more and more safe, and hopefully effective, supplements that we will be able to use for a number of maladies, keeping our feline friends happy and healthy longer into their twilight years. ♦

## A PROMISING STUDY OF FISH OIL FAILS TO TEST CATS BECAUSE OF THEIR SIZE

A promising study about supplementing with deep-sea fish oil illustrates one of the challenges in conducting research on cats and why more research is done on dogs than cats.

A study of 77 dogs with osteoarthritis found that, when compared to a placebo, "The fish-oil treated patients improved significantly in many of the variables ... indicating a true but small relief in symptoms." Those dogs had improved in quality of life in locomotion and everyday situations, according to the report published in *BMC Veterinary Research* in 2012. Supplementation could be considered part of a total pain-relieving approach, especially for dogs who do not tolerate anti-inflammatory drugs, the researchers said.



**Fish oil likely has some modest effects** that can help cats as they age.

The results are significant because they prove a supplement's effectiveness using quantitative evaluation methods, says Joseph Wakshlag, DVM, at Cornell. Researchers used a force plate to measure the force dogs exerted to walk on it. They did a second study on cats, but cats didn't weigh enough for a force-plate test and results were inconclusive. Researchers did find that taking fish oil did not harm cats — safety data that most products don't provide.

### IN OTHER TESTS:

**From Glasgow, Scotland:** A comparison of meloxicam and glucosamine chondroitin as pain control in arthritic cats over the age of 8 found that, later after a month on a placebo, the cats on glucosamine chondroitin fared better.

**From the Netherlands:** A small study of cats with osteoarthritis whose diets were supplemented with omega-3 fatty acids had fewer symptoms. One group of cats was given fish oil with eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), both long-chain omega-3 fatty acids. The other group received a corn oil supplement without EPA or DHA. Owners said the cats taking fish oil with EPA and DHA were more active, climbing stairs and jumping, than those taking corn oil.

**From Nestle Purina:** Research found that a blend containing fish oil, B vitamins, antioxidants and the amino acid arginine helped improve cognitive dysfunction of middle-aged and senior cats. Whether the supplements given individually will provide the same improvement is unknown.

**From Washington State University:** A study found that fish oil and flaxseed oil can reduce skin inflammatory responses in cats, noting that flaxseed oil appears less immunosuppressive than fish oil.

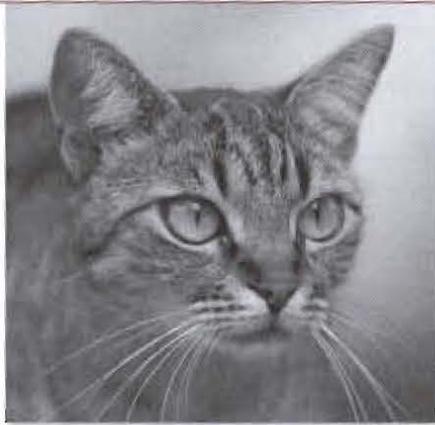
**LANGUAGE...** (continued from cover)

you are looking at a shorthaired dog, for example, he may frown and you can see that. But you can't see it on your cat."

A primary reason that humans and cats haven't evolved to a point of mutual understanding: Cats don't perceive humans as different from themselves, according to author John Bradshaw, Ph.D., a scholar of animal-human interaction. He says his research shows that the behavior cats exhibit toward us is the same they show to other cats. "Putting their tails up in the air, rubbing around our legs and sitting beside us and grooming us are exactly what cats do to each other," Dr. Bradshaw says.

Cats use several methods of communicating with us, including sounds, such as purring. Scent is important, too, Dr. Houpt says. Olfactory communication might include urine marking or rubbing scent glands on various objects and people, although cats who like to rub against their owners aren't necessarily showing signs of affection. They're marking their territory.

**Telling Signs.** By far, however, the most telling method of communication is body language, says Germain Rivard, DVM, IP SAV, Ph.D., a former veterinary behavior resident at Cornell University



**Ears perked and forward:** an alert, contented cat. Flattened ears are a sign of fear. The more afraid a cat, the flatter the ears.

College of Veterinary Medicine.

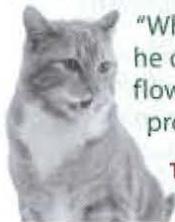
"Animals communicate among themselves using chemical signals, but body language is the most important way of communicating during social interactions, whether between themselves or with humans," Dr. Rivard says.

Most of us can easily identify the body language of a potentially defensively aggressive cat — think the arched back of the classic Halloween black cat, Dr. Houpt says. However, interpreting the signs of a stressed or scared kitty can be trickier. Vocal cues can reveal some emotions, but movement is more significant, especially in conveying subtle moods such as annoyance or more serious ones such as being frightened, stressed or in pain.

## NEITHER A SMILE, NOR A GRIMACE

If your cat curls his top lip and inhales, he may look as if he's smiling or even grimacing, but he's actually sniffing out odors. The behavior, called the flehmen response, is particular to mammals, such as members of the cat family, horses, cattle and pigs.

Its basis, according to the Humane Society of U.S.: "Your cat's sense of smell is so essential to him that he actually has an extra olfactory organ that very few other creatures have: the Jacobson's organ [also known as the vomeronasal organ]. It's located on the roof of his mouth behind his front teeth and is connected to the nasal cavity.



"When your cat gets a whiff of something really fascinating, he opens his mouth and inhales so that the scent molecules flow over the Jacobson's organ. This intensifies the odor and provides more information about the object he's sniffing.

**The flehmen response.**

What he does with that information, well, we'll never know."

"Because cats in pain usually hide, you won't see body postures that might indicate discomfort. A cat in pain will lie on his chest with his tail curled around him," Dr. Houpt says.

The most commonly misunderstood signs: tail wagging and an exposed belly. Here are keys to interpreting feline body language:

### The Eyes

**Calm eyes with small pupils:** a relaxed, happy cat.

**Dilated pupils looking almost all black:** fearful and potentially aggressive. Pupil size is revealing because cats have pupils that can change sizes dramatically, Dr. Houpt says.

**A direct stare:** a threat to other cats not unlike staring by humans.

### The Ears

**Perked and forward:** an alert and content cat.

**Flattened:** a definite sign of fear. "The more afraid a cat is, the flatter his ears will become until it looks as if you put a saucer on top of his head because the ears are squished down so far," Dr. Houpt says.

**Perked and swiveling:** Ears on the move indicate that a cat is attentive and taking in the sounds around him.

### The Voice

**Growling, hissing or spitting:** Best avoid this cat.

**Meows:** a sense of urgency for food or attention.

**Purring:** a sign of contentment in a normal situation. However, Dr. Houpt says, "It can mean other things, as well, such as anxiety."

### Body Posture

**Lying on the side:** A relaxed cat lounges on his side with his legs outstretched.

**Lying on the back:** This cat is comfortable in his surroundings.

**An exposed belly:** no petting, please. "In some cases, it is a sign of submission to other cats, but it doesn't mean he wants to be petted," Dr. Houpt says. "Some

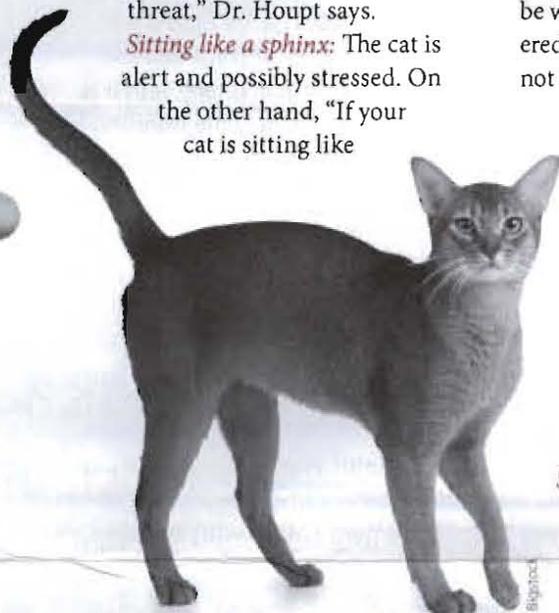


**An exposed belly:** It can be submissive to other cats but doesn't mean he wants to be petted. Some tolerate it. Others consider an invitation to attack you.

cats will tolerate it or might even like it, but a lot of cats feel like it's an invitation to fight if you put your hand on their belly. They will scratch or attack you with all four legs, and maybe even bite you if you try to do so."

**Arched back:** This can be accompanied by the hair standing on end. "The cat makes himself tall to make potential predators think he is more of a threat," Dr. Houpt says.

**Sitting like a sphinx:** The cat is alert and possibly stressed. On the other hand, "If your cat is sitting like



**The tail standing straight up:** a scaredy-cat. If he thrashes the tail back and forth, he's agitated. The faster the tail, the angrier the cat.

a meatloaf, with his paws tucked underneath his body, that is not a happy cat," Dr. Houpt says.

**Crouching:** Cats take this position before they spring on their prey.

### The Tail

**Relaxed with smooth hair:** a contented cat.

**Wagging:** Unlike dogs, cats who appear to be wagging their tail are more likely bothered than happy. "Tail movement in cats is not well understood by people," Dr. Houpt says. "If a cat lashes his tail, he's annoyed." And, the faster a cat's tail is wagging or thumping, the more irritated he is.

**Standing straight up:** You've got a scaredy-cat on your hands. "The fearfully aggressive cat has sort of a bottle-brush tail," Dr. Houpt says.

### The Paws

**Swatting:** offensive and defensive aggression.

**Kneading:** A relaxed cat will move his paws in a motion that resembles kneading bread dough. It's probably the motion kittens used to massage their mother's breast to stimulate milk.

**Lying on the side:** A relaxed cat lounges with his legs outstretched.



Failing to recognize feline body cues often leads to disastrous results for both humans and cats. A 2014 study by the American Society for Surgery of the Hand found that 30 percent of people bitten by cats required hospitalization to prevent severe bacterial infections from spreading.

Cat bites seem to be reported less frequently than dog bites, though it's not clear if they occur less often. "It's possible, although a lot of cat bites are predatory in occurrence," rather than the result of fear or aggression, Dr. Houpt says. "So you have a cat who is stuck in the house, which is good, because he will live longer, but he has evolved to catch 12 mice a day. Instead of jumping on mice, he jumps on your ankles."

She recommends providing cats with more predatory play time so they can fulfill their instincts. "Just buying the cat a catnip mouse is not going to do it," Dr. Houpt says. "There are a zillion toys available, but the best ones are the fishing pole ones that you can dangle and then the cat can leap after it." ♦

## TO BECOME A STUDENT OF BODY LANGUAGE

Owners who take extra steps to learn about feline behavior and body language will more easily begin to recognize and interpret their cat's needs, says behaviorist Katherine Houpt, VMD, Ph.D., at Cornell.

She recommends researcher John Brashaw's "Cat Sense," as well as books by Pam Johnson-Bennett, who writes extensively about cat behavior and stars in the television series "Psycho Kitty, airing on Animal Planet in the UK.

## FOR MORE ON VOCALIZATION

Please see "The Many Reasons for the Cat's Meow," *CatWatch*, December 2014. Among other reasons, it explains that excessive meowing, accompanied by weight loss and hyperactivity, can be a sign of hyperthyroidism.



Elizabeth

Elizabeth is thankful for the assistance of **Bruce G. Kornreich, DVM, Ph.D., ACVIM**, 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, 535 Connecticut Ave., Norwalk, CT 06854-1713 or email [catwatcheditor@cornell.edu](mailto:catwatcheditor@cornell.edu).

### COMING UP ...

❖ HYPERTENSION

❖ LEPTOSPIROSIS

❖ ANEMIA

❖ MAMMARY GLAND TUMORS

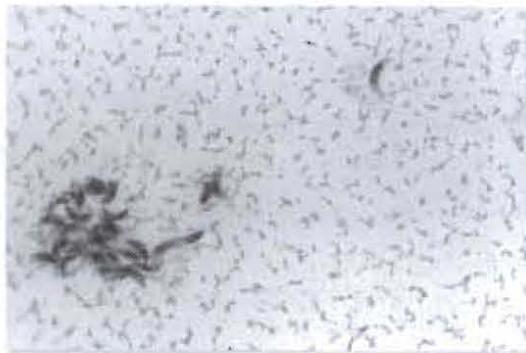
## What are His Risks of After Exposure to *Toxoplasma*?

**Q** I recently fostered a rescue dog I was told had eaten the feces of a feral cat while being housed in another foster home. This cat subsequently had his stool tested, and it came back positive for *Toxoplasma gondii*. The dog unfortunately defecated in my car while I was transporting him and I am concerned that I may have been exposed to *Toxoplasma* while cleaning up the mess in my car. Do I need to worry about this?

**A** First of all, thank you so much for all of your work on behalf of all animals. It is wonderful to hear about your kind work, and I think we need more folks like you in this world.

Perhaps a brief review of the life cycle of *Toxoplasma gondii* will be instructive. This protozoal parasite is capable of infesting most warm blooded animals, but its primary (definitive) host is the cat. This means that *T. gondii* can produce only infective oocysts (eggs) when it is ingested by a cat and multiplies in the cats' intestinal tract. These oocysts are then shed in the feces, where they become capable of infecting other animals between 24 to 48 hours after they are shed. These oocysts are very resistant to degradation and may survive in the environment for more than one year.

Animals are infected by either eating the meat of an infected animal, by ingesting water, soil or food products that have been contaminated with *T. gondii* eggs, or in rare cases by transmission from a pregnant mother to her baby across the placenta. When animals other than cats ingest infective *T. gondii* oocysts, the oocysts hatch in their GI tract and ultimately migrate to tissues in various parts of the body (usually muscles), where they form cysts that remain in the animal's body for the rest of its life. Non-feline species may ultimately develop signs of toxoplasmosis, including fever, lethargy, anorexia, and other symptoms that depend upon the organ system affected. Infected cats most commonly do not develop symptomatic toxoplasmosis.



*Toxoplasma gondii* shown in abnormal abdominal fluid in a mouse.

Center for Disease Control/Dr. L.L. Moore, Jr.

The important point here is that animals other than cats do not shed infective oocysts in their feces, so the likelihood of your being exposed to *T. gondii* oocysts in the feces of a dog (an intermediate host) are exceedingly low.

Toxoplasmosis (infection with *T. gondii*) is a significant zoonotic disease (i.e., a disease that people can catch from animals), and it is important that people, particularly immunosuppressed and pregnant people, take precautions to prevent exposure to infective oocysts of this common parasite.

These precautions include cleaning the litter box daily (more often than every 24 hours so that oocysts do not have a chance to become infective) or not at all (have someone else clean them), wearing gloves when working in soil that may be contaminated with cat feces, washing all food items carefully and cooking food well before consuming, covering sandboxes to avoid contamination with cat feces, and refraining from ingesting potentially contaminated water sources.

I hope that this is helpful, and I think the likelihood of your being contaminated is low. Of course, if you notice any signs of lethargy, fever, weakness or any other symptom, it would be prudent, as always, to seek consultation with a physician to be on the safe side.

Best regards, and keep up the great work ... even that work on behalf of dogs!

—Best regards, Elizabeth ❖

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