



THIS JUST IN

Kitten Kindergarten

Program designed to educate cat owners

It makes us purr when we hear of an effort to help cats remain in their homes. A veterinarian in Australia is using education to help prevent relinquishment of cats by educating new owners about cat behavior.



Photo: iStockphoto

Dr. Kersti Seksel, a behaviorist from the Sydney Animal Behaviour Service, explained the program at the American Association of Feline Practitioners' 2017 conference, as reported the *Journal of American Veterinary Medicine Association*. The program helps owners understand feline development, problem intervention, and socialization. It explains how to reward desired behaviors and how behavior is determined by genetics, learning, and environment.

The domestic cat is a solitary ambush hunter who is active at dawn and dusk. Cat societies are insular, with strangers not readily accepted, Dr. Seksel tells participants in the class.

Cats need access to resources and will override their emotions to get access to important resources. Cats do not wait, says Dr. Seksel. "Cats look at things as 'mine, mine, mine' and 'now, now, now,'" says Dr. Seksel. ■

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Is Your Cat Hurting?

Learn the subtle signs that your cat is in pain

Cats are stoic creatures, and they try not to let on when they are in pain. While crying out is an obvious sign of pain, it's important to know the quieter symptoms that your cat may not be feeling well.

Hiding. This is a common sign of pain in cats. If your cat is usually friendly and interactive, a sudden shift to hiding and avoiding contact with you or other pets in the household may be a result of stress or pain (or both!). Even if your cat is normally shy, take note if he starts hiding more. Depending on the underlying injury or condition, normal interactive activities, such as playing or snuggling, may hurt so the cat hides to avoid potential discomfort. The cat may also just want to be alone because he is uncomfortable.

Tight posture. Cats are expert loungers—when happy and comfortable, your cat's body should look loose and relaxed. A painful cat may hunch up his body or look very still. This tense



Photo: iStockphoto

A typical sign your cat is in pain is unusual hiding.

posture is normal for a cat who is stalking something, but it is abnormal if it persists when the cat is just resting. Note your cat's normal resting positions and be mindful of postural changes.

Short temper. No one likes to be bothered when they're hurt. If your cat becomes less tolerant of day-to-day interactions with you or other people and animals in your household, there could be something going on. Chronically cranky cats should also have a physical exam with a veterinarian—feline personalities vary as much as human ones,

continues on page 2

DID YOU KNOW?

Causes of Urinary Incontinence

True incontinence is a urinary leak without intention

A truly incontinent cat isn't able to control when and where he leaks, says Leni K. Kaplan, DVM, MS, a lecturer in the Community Practice Service at Cornell University College of Veterinary Medicine. "The best way to tell is to observe your cat. If he is posturing to urinate intentionally, then he is not incontinent."

An older cat might be battling a sphincter malfunction or be ill. Common causes of urinary incontinence include: bacterial bladder infections, cystitis, FLUT (feline lower urinary tract disease; see our September 2017 issue), diabetes, feline leukemia, spinal cord and peripheral nerve problems, arthritis, or even a brain tumor. While geriatric cats over the age of 10 years can sometimes sleep so deeply they aren't awakened by the urge to urinate, even then there may be a reason. A common cause is a younger cat who is bullying the older cat away from the litter box, causing the older cat to try to hold it till a later time. ■

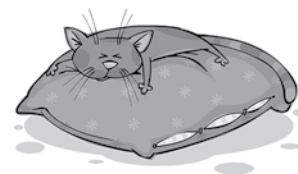


Photo: iStockphoto

Hope for FIP

Antiviral drugs may provide remission

Two antiviral drugs have led to remission in cats with feline infectious peritonitis (FIP), says Dr. Niels C. Pedersen, professor emeritus at the University of California-Davis School of Veterinary Medicine and long-time FIP researcher, speaking at the 2017 American Association of Feline Practitioners convention.

“Antiviral drugs are the answer,” he said, in an American Veterinary Medical Association report. “We’ve opened the door and shown that we can successfully cure a large percentage of these cats.”

The incidence of FIP in a cat population can be as high as 10 percent or as low as zero—and can fluctuate. At high risk is any dense cat population with kittens as part of the equation. High-risk populations include cats at foster and

rescue organizations and dense populations of free-roaming cats.

Dr. Pedersen said veterinarians must learn from research on human RNA viruses, such as HIV, hepatitis C virus, influenza virus, and Ebola virus. It is possible to make drugs that interfere with specific replication processes of viruses.

“The results of our preliminary field studies with two drugs, a protease inhibitor and a nucleoside inhibitor, are showing great promise in curing certain forms of FIP,” Dr. Pedersen summarized after the AAEP conference. (See our August 2016 issue for more on FIP.) ■



Pain from page 1

but there may be a reason for that bad attitude.

Eating less. Decreased appetite can be due to a problem in the mouth or elsewhere in the body. Oral conditions make eating painful, but pain originating elsewhere in the body can also cause your cat to lose his appetite.

Avoiding favorite perches. Most cats enjoy high places where they can survey their domain. If your cat stops hanging out on his favorite windowsill, it may be that it hurts him to jump that high. Cats do get arthritis, and it often goes undiagnosed because of cats’ reputation for being somewhat fickle about their preferences. Your cat may have legitimately decided that he prefers the couch over the windowsill, but avoidance of jumping is worthy of a veterinary exam.

Purring. Have you seen someone laugh when they are really stressed out? Cats can purr for the same reason. Purring is usually an activity for good times when the cat is happy and content, but a stressed or injured cat may purr to comfort himself. Before declaring that your cat is happy because he is purring, evaluate the rest of his body language—is he loose and relaxed, or is he tense and wide-eyed? If the latter, he is probably purring as a coping mechanism.

Squinting. Squinting can indicate a

problem with your cat’s eyes, such as foreign debris or an injury, or it can be a sign of overall discomfort. Squinting will often be paired with a hunched posture and/or hiding behavior.

Rapid shallow breaths. High respiratory rate (fast breathing) is a sign of pain. Don’t worry about your cat breathing hard if he has been running and playing hard, but be concerned if his breaths are fast and shallow while he is hanging out.

Poor grooming habits. Happy, healthy cats keep themselves well-groomed, with smooth, shiny coats. If your cat stops grooming himself, it could be due to an inability to reach certain areas (a common problem for obese cats), because it hurts to do so (arthritis or an injury), or because something else is going on and he doesn’t feel well.

Inappropriate urination and defecation. “Accidents” outside the litter box can be due to behavioral problems (including stress) or health problems. Sick or injured cats may find it painful to climb into a high litter box or be unwilling to move much to get to one.

If your cat is showing any signs of pain or discomfort, schedule an appointment with your veterinarian. You know your cat best, so it is up to you to notice when he doesn’t seem quite right and might need help. Explain what you’re seeing to your veterinarian. ■



CatWatch

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For information on your cat’s health, visit the Cornell University College of Veterinary Medicine, Cornell Feline Health Center website at www.vet.cornell.edu/fhc/.

Send Ask Elizabeth questions and letters to the editor:

CatWatch*

535 Connecticut Ave.

Norwalk, CT 06854-1713

catwatcheditor@cornell.edu

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Does Your Cat Have Parasites?

Parasitism in cats is higher than you might think

Parasites are never fun, and certainly less so when they affect your own cat or kitten. Parasites can rob your cat of good health, making her more susceptible to infections and diseases. In addition, many parasites are zoonotic, meaning they can cause problems in people as well. A diagnosis and recommendations for treatment from your veterinarian are the best way to manage parasites once they have taken hold, but it can also be wise to treat your cat with prophylactic medications to prevent parasitic infections.

This article focuses on the most common feline parasites. See the chart below for other possible parasitic infections in cats.

Common Roundworms

Toxocara cati is the most common feline roundworm, or ascarid, found in cats, affecting more than 25 percent of all cats. Kittens can become infected by nursing from queens that are infected. More commonly, cats and kittens become infected by ingesting infective eggs from a contaminated environment or eating other vertebrate hosts that have larvae in their tissues.

This means that a cat who walks through an infected area and then licks her feet or a cat who catches and eats a mouse or bird could be infected with ascarids. For this reason, cats who go outdoors have a higher risk of infection and reinfection than indoor-only cats.

Once eaten, larvae migrate through the tissues of a cat's body, especially the liver and lungs. They develop to adulthood in the small intestines of an infected cat. While in the small intestines, the adults produce large numbers of eggs, which are passed with the feces and contaminate the areas they end up in—from litter boxes to your yard. Ascarid eggs are quite hardy and can survive in the environment for years.

Kittens with an ascarid infection often appear "potbellied," in spite of the fact that they can lose lean muscle mass. The parasites drain nutrients that the kittens need to grow and develop normally,



Nursing kittens can be infected through the mother cat.

so affected kittens may fail to thrive and grow normally. Some cats will show respiratory signs, such as coughing, if large numbers of larvae migrate through the lungs, while others may experience vomiting and diarrhea when the worms reach the stomach and intestines.

Diagnosing an ascarid infection usually requires finding parasite eggs in the feces of an infected cat. Occasionally, a cat with a heavy infection will vomit up an adult worm, in which case it should be

saved in a sealable plastic bag and taken to your veterinarian for identification. Parasite eggs in the stool can't be seen with the naked eye, so microscopic evaluation of the feces is required.

Typical drugs used to treat roundworm infections in cats include both topical and oral preparations. Your veterinarian may choose pyrantel pamoate for kittens, as it's a tasty liquid and very safe. (See drugs chart on page 4.)

Many veterinarians recommend that cattery owners, rescue groups, and shelters start by deworming kittens every two weeks from two weeks of age on up until eight weeks of age. After that, kittens can go on monthly treatments.

Adult cats should be treated as needed, based on fecal evaluations. A single dose of deworming medication is usually not adequate

to eliminate roundworms because most dewormers act on the adult worms in the intestines and do not catch the migrating larvae. This is why multiple doses over time are required to eliminate these larvae as they reach the stomach and intestines.

A concern with any infection—bacterial or parasitic—is the development of resistance by the infectious agent to the drugs used to treat the problem. Fortunately, drug resistance is not a major concern for cats with roundworms at this time.

"There are currently no consistent reports of treatment failures for common roundworms in cats and dogs that cannot be accounted for by the biology of the worms or by re-infection. Therefore, if resistant isolates exist—and there is literature to support that this can happen—they are not widespread. Any cat shedding roundworm eggs in their feces should be dewormed and broad-spectrum parasite control should be instituted," explains Dr. Araceli Lucio-Forster, from the department of Microbiology and Immunology at the Cornell University School of Veterinary Medicine.

A big concern with ascarid infections in pet cats is that people are also susceptible to these parasites. Infective eggs are commonly found during screenings of outdoor areas, including playgrounds and public parks. Ascarid eggs can survive for years in the environment and serve to infect both animals and people. Children

continues on page 4

What You Can Do

- Be aware of the symptoms of a possible parasite infection:

Bloody feces
Coughing
Dehydration
Diarrhea
Dull haircoat
Loss of appetite
Pale mucous membranes
Pot-bellied appearance
Vomiting
Weight loss

- Bring new kittens in as soon as possible for a fecal analysis for parasites.
- Discuss a year-round broad-spectrum deworming protocol with your veterinarian, including for indoor cats.

Parasites from page 3

are especially susceptible, as they are often play on the ground or dig in sand pits. Accidental ingestion of dirt contaminated with larvated *Toxocara* eggs can lead to human infection. Feral cats and wildlife are generally considered to be the source, but pet dogs and cats can contribute, too.

Syndromes in people infected by *Toxocara* include visceral larva migrans (caused by larvae migrating through the abdomen and possibly causing signs of liver disease), neural larva migrans

(caused by larval migration through the nervous system), and ocular larva migrans caused by larvae migrating through the eye and possibly resulting in loss of vision).

Dr. Lucio-Forster stresses that parasite control is important both for your cat and your family. “At Cornell, we recommended that all animals be on year-round broad-spectrum parasite control, such as monthly heartworm disease preventives with label coverage of roundworms. Any animal shedding roundworm eggs in their feces should be

dewormed, and broad-spectrum parasite control should be instituted.”

Remember that once your cat is parasite-free she can still be re-infected with roundworms if she goes outside, has access to infected dirt, such as in a “catio,” or catches any prey animals.

Tapeworms

Tapeworms are the second most common parasite in cats. There are two types of tapeworms routinely seen in cats, with the most common tapeworm being *Dipylidium caninum*, seen in both dogs and cats. This tapeworm is usually ingested when a cat is grooming and accidentally ingests an infected flea, as passage through a flea is part of its normal life cycle.

What you may see are tiny pieces of debris that look like grains of rice around your cat’s rectum and tail or white, wiggly sacs of eggs called proglottids on the feces or around the rectal area. The proglottids are sections of the adult tapeworm that drop off with the eggs inside.

While most cats do not show any clinical illness from this tapeworm infection, it is certainly distressing to the family. Humans are rarely infected by accidentally ingesting an infected flea.

Praziquantel and epsiprantel are two medications that are commonly used to treat this parasite. It’s critical to understand that if you do not get rid of fleas, the tapeworms will likely return, so you must deal with them as well (more on fleas in an upcoming issue).

A second type of tapeworm that can be found in cats is called *Taenia taeniiformis*. Cats acquire this tapeworm by catching and eating infected rodents. The same type of dried rice or wiggly white proglottid is seen on the rectal area or in the bedding of an infected cat.

Your veterinarian can examine the proglottid, or break it open to examine the eggs within to determine which type of tapeworm your cat has. The same drugs used for *Dipylidium* infections are effective for *Taenia* species infections. It helps to know which species of tapeworm an infected cat has, as this will inform other management practices, such as the institution of a flea-control program or restriction of outside access to prevent mouse hunting.

For more information visit www.vet.cornell.edu/fhc/Health_Information/brochure_parasite.cfm and www.petsand-parasites.org/about-capc/, which includes prevalence maps for many parasites. ■

Feline Parasites Common to the United States

| Parasite | Infection Route | Zoonotic |
|----------------------------|--|---------------|
| Roundworms | Ingesting eggs or eating rodents with larvae; kittens from mother’s milk | Yes, but rare |
| Hookworms | Larvae penetrate cat’s skin or are ingested | Yes |
| Tapeworms | Ingesting fleas, rodents | Yes, but rare |
| <i>Isospora (coccidia)</i> | Ingesting infected flies or cockroaches | No |
| <i>Giardia</i> | Ingesting cysts in feces of another infected animal | Yes |
| <i>Toxoplasma</i> | Ingesting cysts in infected prey, raw meat or contaminated water sources | Yes |

Common Feline Deworming Drugs

| Drug | Targets | Comments |
|------------------|---|--|
| Emodepside | Roundworms | Topical |
| Epsiprantel | Tapeworms | Tablets |
| Febantel | Tapeworms | Tablets |
| Ivermectin | Hookworms, heartworms | Oral |
| Milbemycin oxime | Heartworms, tapeworms, whipworms, mites | Oral |
| Moxidectin | Heartworms, roundworms, hookworms, ear mites | Oral, topical, injectable |
| Piperazine | Roundworms | Generally not as effective as some of the other medications |
| Praziquantel | Tapeworms | Tablet |
| Pyrantel pamoate | Roundworms, hookworms | Tasty liquid often used for treating kittens, as it is very safe |
| Selamectin | Roundworms, heartworms, fleas, flea eggs, ear mites | Topical |

Emergency Cat Restraint

Even the friendliest cat may scratch if hurt or scared

Safety is the first priority in an emergency situation—and that goes for both you and your cat. If your cat is sick or hurt, or if a natural disaster has occurred, you need to be able to move her without being bitten or scratched. These tips also work if you need to handle a cat that you don't know, although extreme care should be exercised when considering handling a cat with an unknown vaccine history.

Teeth and claws. Cat bites are notorious for getting infected, so the only good cat bite is one that doesn't happen. Always have control over your cat's head so that she can't twist around if she decides to try to bite. Holding onto an upset cat's head can be difficult, so the best strategy is to place a buffer to prevent the cat from bending her neck all the way or to block your body.

Don't forget those four legs, loaded with sharp claws and connected by a very flexible and agile body. The best defense against claws is to wear a protective layer and keep the cat's legs close to her body.

Towels are your friend. Lightweight, versatile, and present in every home, towels are a staple of cat restraint. Even at the veterinary clinic with more specialized options available, towels are still the go-to tool for handling upset cats.

To make picking up a stressed cat easier, drape the towel over her, head included. A cat that can't see you approach can't plan to bite or scratch. Once covered, quickly scoop the cat up, wrapping the edges of the towel under her body. Get one hand on her scruff to have control over her head, and use the other hand and arm to hold her close to your body like you are cradling a baby or holding a football.

Once you have a hold on the cat, you can adjust the towel's position. The ideal setup is to have the center of the towel under the cat with the ends wrapped snugly around her body to keep her legs folded close. You can then hold the edges behind her head closed, which both



When a cat is scared, a thick terry towel can keep both of you safe.

prevents her from snaking a front leg out and gives you some control over your head. An internet search on “kitty burrito restraint” will show some good photos.

If your cat is calm as you start out, you can place her directly on a flat towel and wrap from there. Once wrapped, you can carry her wherever she needs to go.

Whether your cat is wrapped in a towel or in her carrier, covering her head loosely with a towel can decrease stress because she will feel like she is hidden.

Slip leads. A basic slip leash can be helpful for catching a cat, especially if she will let you close but doesn't want to be touched. Be sure you understand how a slip lead works before using it on a cat.

Make a large loop and carefully drape it over the cat's head. Then slowly pull on the end to make the loop smaller. Be ready with a towel or cat gloves though, because most cats aren't leash-trained, so she may panic when she feels pressure on her neck. The leash will limit how far she

can go if she bolts, but you want to get a hold of her and loosen the slip leash as quickly as possible to avoid choking her.

Extra tooth protection. Some other tools you can use to protect yourself from a cat's teeth include cat muzzles, Elizabethan collars, and thick leather gloves.

Cat muzzles are specially designed to fit on a cat's head, keeping the cat's eyes covered and mouth mostly closed. Make sure the muzzle fits so that your cat's nose is visible through the ventilation hole. A cat can potentially still bite with a muzzle on, so be mindful of where your hands are, but the muzzle limits them and covering the eyes can help calm the cat.

Elizabethan collars, affectionately known as the “cone of shame,” leave your cat's face totally exposed but limit her

range to bite. For best results, the E-collar should be longer than your cat's nose so that she can't reach around it. An E-collar paired with a towel wrap is an excellent way to carry a fractious cat.

Leather gloves. Thick leather gloves provide some protection while trying to catch an unhappy cat, but they don't make you invincible. A hard bite usually can still puncture through. They do protect against scratches.

Most vet clinics have elbow-length “cat gloves” to use when handling angry cats. The downside to these gloves is that they limit manual dexterity, which can make holding on to a wriggling cat difficult.

Don't forget the carrier! Having a cat carrier handy is always a plus in an emergency, especially if your cat has been taught to get in on her own. This allows your cat to be safely confined without unnecessary stress. (See our December 2017 issue.) ■

Human First-Aid for Cat Scratches

It's important not to underestimate the chance of infection if you're bitten or scratched

If you do happen to be bitten or scratched in spite of taking these precautions, it is important to quickly wash any injuries with copious amounts of soap and warm water, and to watch the injury for any signs of swelling, redness, and/or discharge. If any of these symptoms are observed, contact your health professional promptly to avoid secondary infection of the bite or scratch by a bacteria called *Bartonella* (called Cat Scratch Fever).



When a Nasopharyngeal Polyp Makes an Appearance

More common than you may guess, these abnormal growths can cause trouble swallowing and breathing

Your kitten is now a young cat of eight to 12 months of age and the days of fighting kitten upper-respiratory infections are over. No more sneezing, no more runny eyes, you think. You thought you were out of the woods, but then one morning you notice your young adult cat has some trouble swallowing, maybe gagging, and a slight voice change along with some labored breathing at moments.

You take your cat to your veterinarian and find out that he has a residual problem from those early infections—a nasopharyngeal polyp! Now your cat is facing surgery.



Nasopharyngeal polyps can usually be found with a visual exam.

What Are These Things?

Nasopharyngeal polyps are fleshy tissue growths that appear to be reactions to inflammation in this area. They may appear at the back of the throat, on the small tube that drains the middle ear into the throat, or in the middle ear.

Respiratory viruses are generally blamed as the culprits, but this is controversial. The growth itself is benign, but if

it grows large enough it can interfere with your cat's breathing. Your cat probably feels like he has something stuck in his respiratory tract or mouth. These growths may occur just on one side or both. If both sides are affected, your cat will have more severe clinical signs.

The polyps tend to be pinkish-white in color and look uniform, smooth, and thick. They have a slender stalk in most cases, but are otherwise unattached to your cat's tissues. The polyp usually grows downward, causing the respiratory signs seen by owners. Rarely one will grow upward in the other direction, causing signs such as head shaking, a head tilt, and possibly changes in the eyes due to pressure on nerves in this area.

Diagnosis

Nasopharyngeal polyps are usually diagnosed during examination after sedation

or anesthesia. Your cat needs to be still so your veterinarian can open his mouth wide, pull down on the soft palate (on the roof of your cat's mouth) and look for a growth in that area. Occasionally, polyps may be picked up on radiographs (x-rays) or via CT (computed tomography) scans, but visual exams are usually all that is needed.

Once a polyp has been found, treatment involves removal of the growth.

With your cat under anesthesia, your veterinarian will pull the soft palate down and grasp the stalk of the polyp. Steady traction will cause the stalk to stretch and break. This is generally the end of the problem.

In rare cases, the polyp may regrow or it may have been partly in the bulla of the ear. If this occurs, your cat will likely need a more extensive surgical procedure that involves going through the bony part of the middle ear—a bulla osteotomy. Your veterinarian may refer you to a specialist if your cat needs this surgery.

Recovery

Recovery from polyp removal is usually uncomplicated. If your veterinarian is concerned about infection, your cat may need to be on a course of antibiotics. If your cat is older, your veterinarian may recommend sending a tissue sample out for a pathology review to rule out any cancerous growths.

With the bulla osteotomy, there are some potential temporary complications. One is a balance problem, since the middle ear has been affected by both the polyp and its removal. Some cats will experience a condition called "Horner's Syndrome" due to mild trauma to the nerves that traverse this region on their way to the eyes from the brain.

In cats with Horner's Syndrome, the third eyelid comes up and covers the bottom part of the eye. You will see a white tissue over part of the cat's eye. In many cases, the pupils will also have different degrees of dilation. Luckily, these are not usually permanent effects, and most cats recover and appear normal relatively quickly.

While a nasopharyngeal polyp does cause discomfort and can interfere with your cat's breathing, it is a problem that can usually be resolved fairly quickly with appropriate care and follow up. ■

Bulla Osteotomy

An osteotomy means that an area of bone will be cut into and reshaped. This is obviously a more complicated surgery than simply pulling the polyp out. It will require suture removal later and possibly use of an Elizabethan collar to keep your cat from scratching at the incision until it is healed.

Anatomy of a Cat's Mouth

The back of a cat's mouth is actually a busy intersection of sorts. The middle ear opens here, and the nasal passages drain into this area. The pharynx, which is the doorway to the larynx and trachea, is also here, as is the opening to the esophagus, pathway from the mouth to the gastrointestinal tract. The nasopharynx refers to the junction of the nasal passages and the pharynx.

Pet-Food Environmental Impact

Our cats and dogs eat as much food as all the people in France, claims UCLA professor

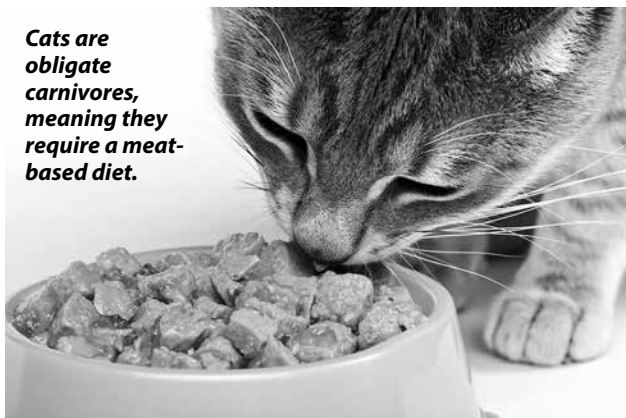
With the American trend to consume less meat—which helps reduce the environmental effect of meat production—UCLA professor Gregory Okin began to wonder what the impact of our pets was. It turns out that U.S. cats and dogs cause 25 to 30 percent of the environmental impact of meat consumption in the United States.

Okin was quick to caution no one should stop feeding meat to pets—and we agree strongly—but says changes can be made to reduce the environmental impact, which is comparable to a year's worth of driving from 13.6 million cars. His paper was published in the journal *PLOS One*. You should discuss the option with your veterinarian.

"I like dogs and cats, and I'm definitely not recommending that people get rid of their pets or put them on a vegetarian diet, which would be unhealthy," Okin said. "But I do think we should consider all the impacts that pets have so we can have an honest conversation about them. Pets have many benefits, but also a huge environmental impact."

Okin, a member of UCLA's Institute of the Environment and Sustainability, usually researches dust bowls, desert landscape dynamics, and wind erosion, and how these things can impact individual ecosystems and the global climate. Pinning down the environmental impact of canine companions and feline friends

Cats are obligate carnivores, meaning they require a meat-based diet.



was more of a "pet" project that occurred to him while he was thinking about the growing trend of raising backyard chickens.

"I was thinking about how cool it is that chickens are vegetarian and make protein for us to eat, whereas many other pets eat a lot of protein from meat," he said. "And that got me thinking—how much meat do our pets eat?"

As eating less meat expands from vegetarian to environmental circles as a way to reduce one's carbon footprint, considering what to feed pets is a natural next step, Okin said.

"I'm not a vegetarian, but eating meat does come at a cost," he says. "Those of us in favor of eating or serving meat need to be able to have an informed conversation about our choices, and that includes the choices we make for our pets."

There are vegetarian diets available for pets, but it's wise to discuss the option with your veterinarian before changing food. ■

Study to Develop Blood Biomarkers of Feline Cancer

Cornell Veterinary School researchers look for less invasive method of identifying cancer spread

Cancer is a leading cause of death in cats, with tumors in the mammary gland, mouth, and skin being the most common. Currently, we rely on surgical removal of the tumor or a biopsy for diagnosis, prognosis, and treatment options. Since this procedure often requires anesthesia, we would like to find a way to use a simple blood sample to provide these answers.

This technique is performed in humans because tumors release biomarkers in the blood called circulating tumor cells (CTCs). These cells enter the blood stream from the original tumor and begin to appear before the cancer spreads to other parts of the body. Higher CTC numbers are associated with cancer spread, faster disease progression, and a poorer prognosis. CTCs can also play a role in determining the type of cancer treatment for the patient. In human medicine, these tests are used to help predict survival in patients with metastatic breast, colorectal, or prostate cancer.

To date, there are no published studies on CTC detection in cats, so the goal of Cornell's study is to develop tools needed for use in future tests designed to detect CTCs in the blood of cats with cancer.

The researchers are looking for cats of any age who are having a biopsy or tumor removal for a suspected or confirmed carcinoma. A blood sample along with a sample of the tumor removed during surgery is all that is needed.

If your cat is having a biopsy and you're interested in helping, discuss the option with your own veterinarian, then email the clinical trials coordinator at vet-research@cornell.edu. ■

Mandated Vegan Diets?

Just as we go to press, an article on the *Daily Breeze* described a bill in Los Angeles that would mandate all shelter dogs must eat vegan diets. Los Angeles Board of Animal Services Commissioner Roger Wolfson made the proposal. "I did a little research. Dogs are omnivores," he said. The proposal has caused quite a debate, but our feline friends can rest easy. Cats will not be included in the mandate.



Help! My Cat Appears to Faint

A loss of consciousness is always an emergency

Q My one-year-old domestic shorthair spayed female cat seems perfectly normal and then, without warning, she's passed out on the floor. She's not out for long, but I don't think this is normal. What would cause such a thing?

A Fainting, which your veterinarian will call "syncope," is a temporary loss of consciousness followed by a spontaneous rapid recovery. It's usually a symptom of illness caused by a lack of sufficient blood flow to the brain.

Cats with cardiac or central nervous system diseases, which occur more often in cats as we grow older, can cause fainting. Among the common causes are:

- ▶ Heart-muscle diseases, like cardiomyopathy
- ▶ Infections
- ▶ Irregular heartbeat (arrhythmia)
- ▶ Liver disease
- ▶ Low blood sugar (hypoglycemia), more common in kittens

- ▶ Nervous system disorders
- ▶ Neurologic problems, like epileptic seizures
- ▶ Sudden drop in blood pressure

If your cat faints, write down the time, how long she was unconscious, what she was doing at the time, and other symptoms. If you can get a video, that's even more helpful to your veterinarian.

"Your veterinarian will review your cat's health history and perform a thorough physical examination with baseline blood work, including serum biochemistry and glucose levels," says cardiologist Bruce Kornreich, DVM, Associate Director of the Feline Health Center at Cornell.

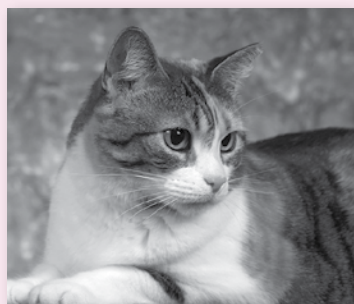
Because arrhythmias may be a cause of fainting, your veterinarian may suggest your cat wear a Holter monitor to obtain a 24-hours cardiogram to check the heart's electrical function. "Inappropriately rapid rates can be treated with drugs, while slow heart rates can be corrected



A veterinary exam is indicated if your cat faints.

with pacemakers," says Dr. Kornreich.

If your cat has fainted, avoid stressing his heart by restricting activity and keep him as quiet as possible until your veterinarian has determined the cause of the fainting, says Dr. Kornreich. ■



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

© 5 THINGS

5 Things to Know About Cat Fights

Let's keep everyone safe

- ❶ Never reach in to try to separate the angry cats. Chances are you'll get scratched or bitten, and the cats will just keep on fighting.
- ❷ Watch the posture of both cats to be aware of bullying, such as one cat pushing another away from a food bowl.
- ❸ Be aware that kittens learn to hunt



Most cat fights center around coveted objects, boundaries, or locations.

prey by playing rough with one another. But if you notice that one kitten appears to be trying to get away, you may need to intervene.

❹ Sometimes a loud noise, like a clanging pot or very loud stomp on the floor, will break the cats up. If not, you can try to wedge a rigid flat object, like a baking sheet or board, between them. If you have the opportunity, dropping an empty cardboard box over one of them can work, or splashing a cup of water over them.

❺ Regardless of which cat did what, both fighters need to be thoroughly examined for cuts, scratches, and even bruises or broken bones. ■

© HAPPENING NOW...

New Jersey bill to hold shelters accountable: Alley Cat Allies reports that The New Jersey Senate Economic Growth Committee is considering a bill that

would save the lives of shelter animals and community cats around the state. The bill encourages shelters to implement their own Trap-Neuter-Return program. The bill will help ensure community cats are quickly returned to where they belong—their outdoor homes. The bill also would require shelters to keep records of all animals who enter and leave their facilities, holding the shelter accountable for the health and safety of the animals in their care. ■

Coming Up ...

- ▶ Grief in Feline Family Members
- ▶ The Ears Have It—What to do About Mites
- ▶ Hyperesthesia Syndrome and Seizures
- ▶ Over-the-Counter Remedies for Cats