



© THIS JUST IN

Phosphate Binders and Kidney Disease

Adding phosphate binders to therapeutic diets

Since about 30 percent of elderly cats will develop some degree of kidney disease, it's important to look at therapies that help cats stay healthy for longer periods of time, and a recent study focused on phosphate binders may be helpful in this regard.

The October 2017 issue of the *Journal of Feline Medicine* discusses therapeutic diets and phosphate binders for cats with chronic kidney disease. Studies have shown that some cats on a special diet containing phosphate binders tend to have increased survival times.

When veterinarians suggest a therapeutic renal diet to help a cat, most owners comply. However, if no suggestion is made, the cats tended to continue on their regular diet. If owners were encouraged to add phosphate binders, most owners did (and most cats accepted the additional treatment).

Since these are two treatments known to improve care for cats with chronic kidney disease, it is worthwhile for owners to ask their veterinarian about these options if they are not already informed about them. See our August 2017 issue for more information on kidney disease in cats. ■

Study Names the Feline Five

Researchers find five common cat personalities

A recent study conducted in South Australia and New Zealand looked at cat personalities as rated by their owners. Much of what we know about cat behavior has been based on studies that were in shelters and with feral-cat colonies, but this study looked at pet cats living in homes as members of the family.

The article in the *Journal of the American Veterinary Medical Association* (JAVMA) stated that an analysis of cat owner responses suggests there are five reliable factors that depict domestic cat personality:

- ▶ **Neuroticism** reflects the traits of insecurity, anxiousness, fearfulness of people, suspiciousness, and shyness.
- ▶ **Dominance** includes bullying as well as the characteristics of dominance and aggressiveness toward other cats.
- ▶ **Impulsiveness** traits include erraticism and recklessness.
- ▶ **Agreeableness** traits include affectionateness, friendliness to people, and gentleness.
- ▶ **Extraversion** traits include being active, vigilant, curious, inquisitive, inventive, and smart.

Researchers dubbed these personality factors the Feline Five.

Obviously, individual cats will be a mix of personality traits, but most cats showed a definite slant toward one set of personality factors or another, based on the behavior rankings provided by their owners. The survey questioned owners



It's no surprise that affection plays a role in your cat's personality.

about 52 behavior traits and then placed cats into categories based on these results. Evaluations of personality require input from prolonged observations of the cats, not a quick once-and-out read on their behavior.

Cat personalities are important because a change in behavior can be the first indication of a health problem. If a cat who generally ranks high in "agreeableness" is suddenly irritable, doesn't interact with you, or hides, she may be in pain or ill.

Determining a cat's basic personality can inform modifications in how that cat is managed or which home would be best if a rescue or shelter is trying to place the cat from a foster home. ■

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© LEGISLATION

Denver Considers Declawing Law

Animal shelters in Denver, Colo., may soon be able to prohibit anyone who plans to declaw a cat from adopting one. Declawing would be allowed only when medically necessary, according to the *Denver Post*.

If the law passes, Denver would be the first city outside of California with such

a law, although a number of other countries have similar laws.

The Colorado Veterinary Medical Association says the law "over-simplifies" a complex medical decision. They oppose declawing but are not comfortable taking the decision out of the hands of a veterinarian and cat owner. ■

Cat Owner New Year's Resolutions

Just a few extra minutes a day can make our cats happy

When New Year's Eve arrives, many of us make promises to ourselves—those infamous “resolutions”—to improve ourselves somehow. That's because the new year is a traditional starting point, and we're happy and motivated. Popular resolutions include losing weight, quitting smoking, and getting the most out of life. Inevitably, however, most of us fail. The reason? Unrealistic goals. Well, we're here to help fix that! Spending more time with your cat and improving her life is realistic and satisfying, so we've put together five New Year's Resolutions. Are you with us?

1 I resolve to work on my cat's weight problem (if she has one!).

I will adjust her diet and increase her activity. I will work with my veterinarian to do this, because I know rapid weight loss can lead to serious health problems in cats. Weekly, or at a minimum monthly, weigh ins will be part of this.

2 I resolve to work on my cat's dental care.

I know I need to train my cat to allow me to brush her teeth (see October 2017 issue for advice on brushing teeth). However, if brushing her teeth is not a good option for my cat, I will be sure to have my cat's teeth checked by a veterinarian twice a year.



3 I resolve to stay on top of my cat's grooming.

I will check my cat every week—or daily for long-hair cats—for mats, tangles, and skin irritations. I will check in her armpits and behind her ears. I know grooming includes nail trims, and I should always check dew claws when trimming the other nails.

4 I resolve to spend active quality time with my cat daily.

I will use a feather wand, toss a favorite toy for her to retrieve, or take her for a walk on a leash and harness (if she's one of the rare cats who enjoys that). I can try food puzzles so she has to “work” for her meals. I will investigate clicker training and see if she can learn some tricks.

5 I resolve to spend quiet shared time with my cat every day.

As much fun as playtime can be, we all know our cats love quiet time, too, even if it's just to watch the daily news on TV or read a book with her by my side. ■

How Old Is a Cat in Human Years?

It's not simple, but the AVMA presents a guideline for comparing human and feline aging

By and large, says the American Veterinary Medical Association (AVMA), cats are geriatric at age 7. Although there's no simple way to compare a pet's aging to human aging, the AVMA did come up with a guide.

The best way to ensure your cat lives a long, healthy life? Consider twice-yearly wellness exams once your cat turns 7, instead of the usual annual checkup.

CAT YEARS	HUMAN YEARS
7	45
10	58
15	75
20	98

“A year is a large percentage of a cat's lifespan,” says Brian Collins, DVM, Cornell Veterinary School Lecturer,



Chief, Section of Community Practice Service. “Earlier detection of disease and early intervention can result in a better prognosis and longer lifespan for an aging pet.” ■



CatWatch

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Cornell University College of Veterinary Medicine Feline Health Center

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/.

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Heart Disease in Your Cat

Picking up signs early can aid in diagnosis and improve your cat's quality of life

The first indication of a heart problem in a kitten or cat might be a murmur picked up by your veterinarian on a routine physical examination. "Luckily, not all heart murmurs mean heart disease in cats," says Dr. Bruce Kornreich DVM PhD, board-certified veterinary cardiologist and Associate Director of the Cornell Feline Health Center. Many ostensibly healthy cats have murmurs, but depending upon the situation, follow-up diagnostics may be warranted when a murmur is detected in a cat.

Your veterinarian will listen carefully with a stethoscope, check your cat's blood pressure, and possibly do some bloodwork if a murmur is detected. Follow up diagnostic tests may include radiographs, electrocardiogram (ECG), or ultrasound evaluations, depending upon the initial examination.

Observant owners may pick up signs of heart problems in their cats early on in disease progression. "Increased respiratory rate (greater than 40 breaths per minute while sleeping), increased respiratory effort, loss of appetite, and lethargy could all possibly point toward a heart condition. Sudden hind limb paralysis (with thrombosis—a clot cutting off blood supply to the limbs) is often a sign of a serious heart problem as well," says Dr. Kornreich.

The Most Common Heart Problem

Hypertrophic cardiomyopathy (HCM) is the most common heart problem in cats. The disease involves a thickening of the muscles of the heart, particularly the left ventricle.

Thicker walls mean less volume inside the heart chambers for blood. The heart has to beat faster to move enough oxygenated blood to all the tissues of the body, including the heart muscle itself. Eventually, affected cats may develop congestive heart failure, with fluid backup into the lungs.

Diagnosing HCM requires more than just an auscultation (listening with a stethoscope). Echocardiography, also called an echo sonogram, uses sound waves to look at the heart and is generally required. In addition, your veterinarian



A cat who becomes lethargic for no apparent reason might need a cardiac assessment.

will want to measure your cat's blood pressure and check her thyroid-hormone levels, as hyperthyroidism and high blood pressure can also cause thickening of the heart. Radiographs (X-rays) and an electrocardiogram (ECG), which records electrical activity in your cat's heart, may also be recommended.

Cats with few clinical signs who are diagnosed early on with HCM and receive medical care can do well for years. However, the development of congestive heart failure (CHF) worsens the prognosis. "Cats with asymptomatic HCM can live high quality lives for many years, while those in CHF generally survive between three and 18 months, depending upon therapy used," says Dr. Kornreich.

Treatments

Managing heart disease in your cat comes down to medical care. Your veterinarian

will advise you on which medications are best for your cat. Commonly used drugs include diuretics to alleviate congestion, angiotensin-converting enzyme (ACE) inhibitors to relax and dilate blood vessels, and antithrombotic drugs to reduce the likelihood of clot formation. Medications can usually be given orally, but some may require injections depending upon a cat's clinical status.

Dr. Kornreich says the use of pimobendan, while still off-label for cats (only FDA-approved for dogs at this time), appears to confer a survival benefit to cats with HCM that have developed left-sided CHF. Pimobendan improves the ability of the heart to pump blood forward and dilates blood vessels. Discuss the use of this medication with your veterinarian.

You may be told to adjust your cat's diet, too. If your cat has congestive heart failure, a diet with a low sodium content might be helpful, although this is controversial. Obesity may also predispose cats to cardiomyopathy, so weight control is important. All cats need adequate taurine in their diets, as this amino acid has been associated with another form of cardiomyopathy (dilated cardiomyopathy) in cats. Most commercial diets contain appropriate amounts of taurine, but if you're not feeding a commercial diet, you want to ensure this is covered.

Prevention

Can you prevent heart disease in your cat? Yes and no.

If your cat has one of the gene mutations predisposing him to HCM, he may have a higher risk of developing heart disease than cats without these mutations, and selective breeding programs have the potential to decrease the prevalence of heart disease in cats. Both high

(continued on page 4)

Blood Test for Cardiac Disease

A preliminary blood test can help you make a decision on more testing

A new tool in the diagnosis of feline cardiac disease is a blood test for NT-pro BNP. NT-proBNP is a protein that is released from the myocardium (heart muscle) when the heart is stretched. This test is used in human medicine and can assist in establishing an index of suspicion for heart disease in cats. It can help distinguish respiratory distress due to cardiac vs. non-cardiac disease. While this blood test can be a simple, inexpensive first step in the diagnosis of heart disease in your cat, false-positive and false-negative results can occur. A definitive diagnosis usually requires verification via echocardiogram.



Heart Disease *from page 3*

blood pressure and hyperthyroidism can cause secondary changes to the hearts of affected cats, so treating these conditions if they are diagnosed is important.

Kittens may be born with congenital (present at birth) heart defects. The most common ones involve problems with the valves of the heart or holes in the wall separating the right and left ventricles of the heart. Either of these problems can result in inefficient delivery of oxygenated blood to the body tissues. Luckily, congenital heart defects are not common in cats (affecting only 0.2 percent of all cats and 8 percent of those diagnosed with heart disease). Minor defects may not shorten a cat's life span or negatively affect quality of life, while severe ones could mean a shortened lifespan and/or diminished quality of life.

Keep your cat at an appropriate weight and encourage him to be active. Feed a quality diet. Talk to your veterinarian about whether heartworm prevention is appropriate—and yes, indoor cats can get heartworm too!

If your cat shows any abnormal behaviors, write down details about the

DNA Testing for Rag Doll and Maine Coon Cats

Checking your cat's DNA can help you make a decision



For Rag Doll and Maine Coon cats, DNA tests can check to see if your cat has a mutation on the MYBPC3 gene that is associated with HCM. This is an autosomal dominant trait, meaning it can affect both males and females and even one copy of the gene confers increased risk. A positive test does not mean your cat will get the disease; it means he has a higher risk of developing it.

Online Genetic Resource

Access a registry of cats who have been cleared for cardiac disease



The Orthopedic Foundation for Animals (OFA) is best known for keeping track of a variety of genetic diseases in dogs, not just orthopedic problems. In addition, they also keep track of some genetic defects in cats. They have a registry of cats who have been examined and cleared for cardiac diseases. Click for cat breeds under this link: <https://tinyurl.com/y8xa2o8r>

incident, including the time and any potential influencing factors. If you catch heart problems early, treatment is more successful and your cat will have a better chance of leading a high quality life.

If you are purchasing a purebred

kitten, ask about DNA testing and evaluations of the parents for heart diseases. If you are adopting a kitten, be sure he gets a full physical examination as soon as possible in case a congenital problem is present. ■

Alzheimer's Disease in Cats

Researchers find the same protein in cats that causes this form of dementia in humans

A study from the University of *Journal of Feline Medicine*, showed that a key protein can build in nerve cells of a cat's brain and cause mental deterioration. It's actually a form of Alzheimer's disease, say the researchers, and it's the same protein that causes tangles in nerve cells in human Alzheimer's patients.

Dr. Danielle Gunn-Moore, at the University of Edinburgh's Royal (Dick) School of Veterinary Studies, says: "This newly discovered protein is crucial to our understanding of the aging process in cats. We've known for a long time that cats develop dementia, but this study tells us that the cat's neural system is being compromised in a similar fashion to that we see in human Alzheimer's sufferers."

With better veterinary care, the lifespan of cats is increasing, and with that comes a higher chance of dementia. "Recent studies suggest that 28% of

pet cats aged 11 to 14 years develop at least one old-age related behaviour problem and this increases to more than 50% for cats over the age of 15," says Dr. Gunn-Moore.

As with humans, a good diet, mental

stimulation, and companionship can help reduce the risk of dementia in cats. Dr. Moore explains: "If humans and their cats live in a poor environment with little company and stimulation, they are both at higher risk of dementia. However, if the owner plays with the cat, it is good for both human and cat. A good diet enriched with antioxidants is also helpful in warding off dementia, so a cat owner sharing healthy meals like chicken and fish with their pet will benefit them both." ■

Signs of Dementia in Cats

Watch for subtle signs of trouble

The Cornell Feline Health Center gives us the behavioral signs of cognitive dysfunction that tend to become clearly noticeable in cats that are 10 years of age or older:

- ▶ Altered sleep and awake cycles
- ▶ Excessive sleeping
- ▶ Indifference to food and water
- ▶ Lack of interest in playing
- ▶ Long periods of staring blankly into space or at walls
- ▶ Spatial disorientation
- ▶ Unprompted episodes of loud vocalizing, such as in the middle of the night
- ▶ Urinating and defecating outside the litter box
- ▶ Wandering away from home into unfamiliar territory

You can learn more at www.vet.cornell.edu/FHC/health_information/CognitiveDysfunction.cfm

Watery Eyes Can Signal Trouble

Cats can't cry the way we do, but tearing may indicate an eye injury or illness

Tears on your cat's face can be concerning. Cats do not have "emotional" tears like people do, and some causes reflect serious situations; others are minor.

Tears are essential to help keep the cornea healthy. A normal tear film has lipid (fatty), aqueous (water), and mucus components. These three parts work together to protect the cornea, keep it lubricated, and keep it hydrated. Tears also help to flush foreign bodies, like dust and pollen, away from the sensitive tissues of the cornea.

An excess of tears—also called epiphora—is often the result of an irritation of the eye. One common cause of ocular irritation is eye lashes rubbing the cornea due to an eyelid that rolls in toward the cornea, a condition called entropion. Long-haired cats and cats with short muzzles (brachycephalic breeds, like Persians and Himalayans) are more likely to experience entropion. Severe cases of entropion may require surgery to prevent the development of corneal ulcers from chronic irritation.

Causes

Tears may overflow if your cat has plugged tear ducts. Tear ducts, also called lacrimal ducts, are found in the corner of the eye closest to the nose. These ducts normally drain excess tears back into the nose or throat. Plugged tear ducts may require your veterinarian to gently open the plugged duct under anesthesia.

Along with these conformational ocular irritations, cats can also have problems caused by environmental irritants to the cornea—cleaning sprays, dust, or scented candles or potpourris, for example. You can easily eliminate candles or other heavily scented products from your house. For cleaning agents, it is best to



If your cat's watery eyes are accompanied by squinting, the time to schedule a veterinary visit is now.

leave your cat secured in another room while you clean. Air the room out thoroughly before your cat is allowed back in.

If clear discharge is accompanied by squinting, a closed eye, redness, and/or pawing at the eye, your cat is indicating discomfort, and you need to schedule a veterinary visit promptly. Eye problems can go from minor to serious quickly if not treated appropriately, and these signs could indicate a corneal injury, most of which are treatable but require medical attention.

What You Can Do

These are the basic rules of thumb for evaluating any clear ocular discharge:

- ▶ If it is a change for your cat, you should consult your veterinarian, but it is not necessarily an emergency.
- ▶ If the clear discharge is accompanied by squinting, pain, or a closed eye, it is an emergency, and your cat needs to be seen sooner rather than later.
- ▶ Some cats will develop a chronic clear eye discharge after a severe respiratory infection. This may become normal for your cat, but it's important to make that decision with your veterinarian's advice.

At the Clinic

Your veterinarian will carefully examine your cat's eyes. A Schirmer tear test will be done to see if your cat is truly producing the appropriate amount of tears. Your veterinarian or a veterinary technician also will apply some fluorescein stain to check for corneal injuries. Cats with corneal injuries will most commonly require antibiotic drops or ointment with a recheck in seven to 14 days to evaluate healing.

Feline upper respiratory infections, including calicivirus (FCV) and herpesvirus (FHV), may cause a clear ocular discharge in cats. This can progress to a pus-like or purulent discharge with secondary bacterial infections. Affected cats may also show signs of a respiratory infection, such as sneezing and nasal discharge. Some cats will recover from the respiratory signs but have a chronic clear discharge. ■

Schirmer Tear Test

This simple strip test can help diagnose dry eyes

The Schirmer tear test was developed by a German ophthalmologist in the late 1800s and is used in human medicine as well. It is a test that measures tear production. Your veterinarian will place a special strip of absorbent paper in your cat's eye (usually within the lower lid). This should stay in place for 60 seconds. The strip is then removed and the distance that tears have traveled on the strip can be read. Less than 10 mm of wetting is considered abnormally low for cats, while over 25 mm could mean excessive tear production.



Time Takes its Toll on Tangles

Cats need immediate help with mats in their coats

While longhaired cats require the most upkeep, mats and tangles can be an issue for all cats. Older cats that are developing osteoarthritis start to have trouble bending to groom their entire bodies, with the hind end being a popular spot for mats and dandruff.

Overweight cats can also have trouble grooming themselves, because large fat deposits prevent them from bending to reach their backs and hind end. Mats and tangles will only get worse if left alone, so once they develop your cat will need some help from you. If he continues to chew, he's opening the doorway for bacteria and fungi to take hold.

Mats can cause physical problems, including skin irritation, skin infections, and even a smelly problem sometimes called "external constipation," which occurs when feces gets caught in the fur around the anus making it difficult for an affected cat to defecate.



This cat's coat is highly suspect of hidden mats.

Your solution is to implement a regular grooming time and process.

Regular Brushing

- ▶ Brush long, soft coats daily; weekly will work for most others.
- ▶ Work brushing your cat into your normal routine; consider keeping a brush easily accessible in a spot your cat frequents, such as next to your chair if she's a lap kitty.



Grooming can be a mutually satisfying activity (that's why it's one of our resolutions—see page 2).

Detangle Gently

- ▶ Separate small knots by hand. Grasp the hair beneath the knot and slowly pull out a few strands at a time.
- ▶ Make sure that while pulling, you exert pressure on the knot rather than your cat's skin.
- ▶ A brush or comb works best for large tangles. Separate the hairs, starting from the bottom/edge and working up into the tangle.
- ▶ Stripping tools or dematters can help break up mats. Again, work your way into the tangle from the bottom.
- ▶ Break sessions into smaller time periods. Long sessions may not be comfortable for your cat.

Helpers

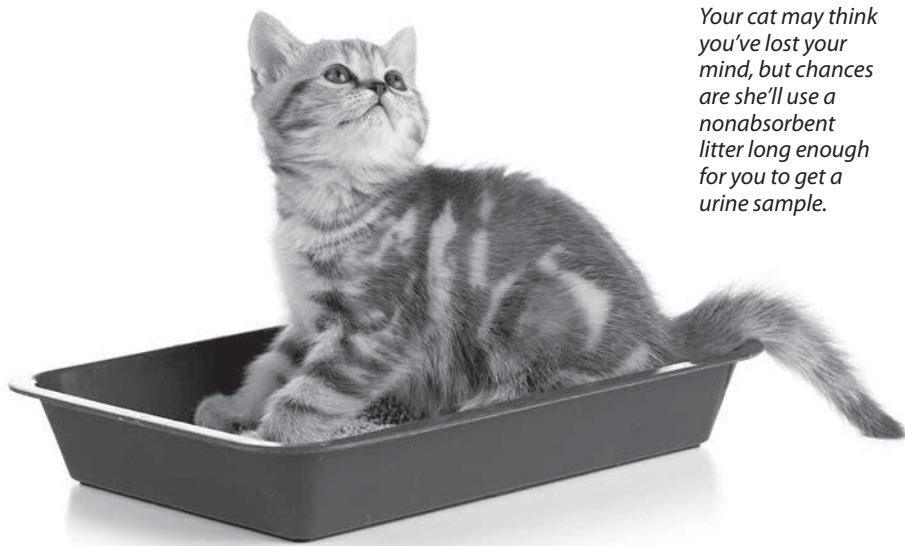
- ▶ A cat-specific detangling spray or oil can help to loosen up larger knots. Rub a little into the bottom of the mat, let it sit for a few minutes, then start working it apart with your fingers or a good grooming tool. Do not use a product for another species, as it may harm your cat.
- ▶ Cornstarch can also help. Gently work the cornstarch into the mat to help loosen the hairs.

Scissors or Clippers

- ▶ Scissors can help. Trim with caution. Isolate the mat with your fingers, holding the hairs at the base with one hand, or a comb, if it will slide under, to protect your cat's skin from being injured as you cut with the other hand.
- ▶ Wait until your cat is still before cutting—a wiggling cat can easily get in the way of the scissors.
- ▶ Electric clippers may be the only option for mats that go all the way down to the skin. Be sure your cat gets used to the sound before you attempt to use them, and use these cautiously, as they can irritate a cat's skin if not used properly.
- ▶ Use short sessions. Your cat's tolerance will be even less than usual, plus clipper blades can quickly become hot to the touch.
- ▶ Shaving may leave some temporary unsightly bald spots.
- ▶ If all else fails, consider having your veterinary clinic staff or a professional groomer do the job. It will be worth the cost in the long run. ■

Urine Sample? No Problem

“Bring us a urine sample,” says your veterinarian, leaving you a bit bewildered—how do I do that?



Your cat may think you've lost your mind, but chances are she'll use a nonabsorbent litter long enough for you to get a urine sample.

In the Office

If you can't get urine from your cat at home, your veterinary team can do it at the clinic. Manual bladder expression is done by palpating a cat's bladder and then gently squeezing, causing the cat to urinate. Manual expression should only be done by a trained veterinarian or veterinary technician, because squeezing too hard can bruise or damage the bladder, and squeezing the wrong organ can also cause problems.

Your veterinarian may opt to use a urinary catheter to get a urine sample, especially with male cats. Female cats are much more difficult to catheterize.

Cystocentesis (often just referred to as “cysto”) is a procedure that involves the collection of urine directly from the urinary bladder through a needle that is passed through the abdominal wall into the bladder. It sounds terrifying, but it is actually relatively safe, and most cats are very good about having it done. They are usually far more irritated about being restrained for this procedure than the actual needle poke!

Cystocentesis can be performed by palpation alone or using ultrasound to guide needle placement, and is the ideal method of collection to get a sterile sample for bacterial cultures. Your veterinarian will usually avoid performing cystocentesis if your cat is suspected of having a bladder tumor or if there is a skin infection in the region where the needle is passed, because the needle could either transfer cancer cells to other sites in the case of bladder cancer or inoculate bacteria from a skin infection into the bladder in the event of a skin infection. ■

Your veterinarian might want to examine your cat's urine for a variety of reasons, such as to evaluate kidney function or monitor diabetes. But how to get that urine? It's not as difficult as you might think.

If your cat isn't shy about her bathroom habits, you might be able to catch urine the same way most dog's owners do, by slipping a cup or ladle underneath her as she urinates. To do this, you'll just have to hang out around the litter box at times when she often urinates.

Unfortunately, most cats do not appreciate this violation of privacy, and pushing the issue could cause her to avoid the litter box. That's bad. It could lead to urination elsewhere in the house or retention of urine, which can have detrimental effects on your cat's health.

Easy Peasy

The best way to get a urine sample at home is to use nonabsorbent litter in the box. This allows your cat to dig and urinate normally, and then you can transfer the urine to a cup or collect it in a syringe provided by your veterinarian.

Nonabsorbent litter is available in pet stores or from your veterinarian, or you can use any clean, nonabsorbent material, such as beads, plastic straws, or a plastic bag cut into small pieces. An empty litter box may also work as long as it is in the same location that your cat is used to, but

most cats like being able to “bury” their waste. Whichever method you use, clean the litter box and dry thoroughly beforehand to reduce the risk of contamination.

Speedy Delivery

Once you have collected the urine sample, get it to your veterinarian as quickly as possible. If the delivery will take longer than 30 minutes, refrigerate the urine. The makeup of urine changes quickly at room temperature, so leaving the urine out for an extended period of time can lead to inaccurate results on a urinalysis. Refrigeration helps to slow down the process, but a fresh sample is still the best.

© DID YOU KNOW



“Off Label” Drug Use

Veterinarians use professional discretion.

The “off label” use of a drug means that the medication is not FDA-approved for a particular species or medical problem. Sometimes, it's simply because the pharmaceutical company decided it wasn't worth the cost to get the drug approved for a certain disease or animal or that studies verifying efficacy have not been carried out for other reasons. However, your veterinarian may prescribe such medications based on anecdotal evidence of efficacy. ■

Get Ahead of Chronic Constipation

Effective treatment requires veterinary intervention—and sooner rather than later to prevent worsening

Q My 12-year-old female spayed cat has chronic constipation that we have been having difficulty treating. I want her to be happy, comfortable, and healthy, and I'm concerned that if we are not able to provide her with relief, her condition will progress and her quality of life will diminish. Can you provide any insight into how we may best achieve relief for her?

A Thank you for getting in touch, and I am very sorry to hear about your baby's problem. Constipation is fairly common in cats, and it is true that it is important to treat it fairly aggressively to prevent progression. Perhaps a brief review of what constipation is would be a good place to start.

Constipation is defined as infrequent or difficult emission of hard, dry fecal matter, and it is a common problem of the domestic cat. A variety of problems, including ingestion of indigestible material (i.e. fur), obstruction of the GI (gastro-intestinal) tract by foreign bodies, tumors, or strictures (narrowings), electrolyte disturbances, neuromuscular disease, and the side effects of various drugs can predispose to constipation in cats. In many cases, the specific cause of constipation in cats is undetermined, and in these cases, the condition is referred to as idiopathic constipation.

Treatment of constipation in cats involves making sure that an affected cat is well-hydrated; the elimination of causative agents where possible; medical



Dietary management can help fight the downsides of constant licking, which may include chronic constipation.

management using laxatives, enemas, and drugs that increase intestinal motility; dietary modification; and surgical removal of affected portions of the colon. Obviously, surgery is reserved for severe/unresponsive cases in which the colon becomes distended and unable to function properly (called megacolon).

Laxatives work primarily by either increasing the water content of stool or lubricating the stool so that it passes more easily. Enemas involve the irrigation of liquid through the anus and into the colon to increase fecal water content and to stimulate colonic contraction (peristalsis) to promote fecal evacuation.

Enemas may be given at home to compliant cats (with training by a veterinarian), but some cats may require

sedation and veterinary assistance for enema administration. Intestinal motility modifiers increase the rate and force of peristaltic contractions in the intestines.

Dietary modification usually involves the addition of either soluble or insoluble fiber (or both) to the diet to improve intestinal motility. Insoluble fiber (i.e. cellulose) works by increasing the bulk of the stool, thereby distending the colon and stimulating colonic contraction. The main disadvantages of insoluble fiber are that they lower fecal water content and that they may lower nutrient digestibility.

Insoluble fiber (i.e. canned pumpkin, psyllium) is fermented in the colon, leading to the production of short chain fatty acids, which may directly promote contraction of colonic smooth muscle. Over supplementation with soluble fiber can lead to overly liquid stools (diarrhea) and can also negatively affect nutrient absorption. Fiber supplementation can be achieved by either adding fiber to the existing diet or by switching the diet to a purpose-produced high fiber diet.

Severe, non-responsive cases of constipation may progress to megacolon and obstipation (a condition characterized by permanent loss of function of affected colon). In these cases, surgical resection of the affected portions of colon may be necessary to prevent translocation of bacteria from the GI tract to the bloodstream, which can be life-threatening.

I suggest that you work carefully with your veterinarian to devise an effective treatment plan. Early intervention, the provision of plenty of fresh water, sufficient clean litter boxes, and careful monitoring and follow up are all very important for a successful outcome, so please be vigilant and patient.

Best of luck, and please keep in touch.
Elizabeth

© HAPPENING NOW...

Ponce's Law: The *Daytona-Beach News Journal* reports that there is a bill pending in Florida that would allow judges to forbid people convicted of animal cruelty to own pets. The bill, called "Ponce's Law," named after a Labrador puppy found beaten to death, would allow judges to

prohibit people convicted of abusing animals from owning pets. The bill, HB 473, increases the points associated with crimes from 16 to 28, with 44 accumulative points (for all crimes) a likely prison term.

Pilot's Found: A cat rescued from the Northern California fires will be reunited with his family 10 years after he went missing, says the *Sacramento Bee*. A microchip led authorities to the family, now living in Colorado. The family is thrilled to have the information, and plans are underway for the reunion. ■

Coming Up ...

- ▶ Emergency Restraint Techniques
- ▶ Nasopharyngeal Polyps
- ▶ Worms, Resistance, and Protocols
- ▶ Subtle Signs of Pain



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