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Cause of Fearful Cats

May be a lack of socialization

Researchers used a survey to find connections between feline fearfulness, aggression, and excessive grooming. The fearfulness factor included the cats' reaction to strangers, sudden noises, and changes taking place at home. Aggression toward humans included scratching or attempts to bite in conjunction with care, such as when being brushed. Excessive grooming included intensive grooming and self-mutilation by pulling hairs out.

The investigators found a link between behavior and personality traits and almost 30 behavioral, environmental, and biological factors. For example, the socialization of cats with humans was associated with fearfulness. Cats who had contact with unfamiliar adults and children only a few times or never before the age of 12 weeks were more fearful than cats who met strangers on a weekly or daily basis. Fearful cats also received higher scores for litterbox issues, aggression, and excessive grooming.

Prior studies have shown that fearfulness is associated with aggressive behavior if a cat sees no other way out of a frightening situation, although no direct causalities can be established. The researchers concluded that there was less aggression and fearfulness in households with more than one cat, which may mean the companionship of other cats is an important stimulus for cats. More research is needed. ■

Mikkola, S., et al. Fearfulness associates with problematic behaviors and poor socialization in cats. *iScience*, 2022; 25 (10): 105265 DOI: 10.1016/j.isci.2022.105265

INSIDE THIS ISSUE

Treatment Options for Arthritic Cats	2
Handle Feline Heat Cycles	3
Loud and Active Senior Cats	4
The Most Common Feline Bladder Disease.....	5
Yes, Cats Can Eat Carbs.....	7
Kidney Disease: Don't Give Up.....	8

Manage Diabetic Supplies

Cats may use “human” products but types of insulin are not interchangeable

Receiving a diabetes diagnosis for your cat is stressful, but this disease can often be managed successfully for a long time. And if you or a family member have diabetes, you may recognize your cat's medication.

Types of Insulin

“We do, in fact, use mostly human insulins to manage our diabetic cats,” says Leni K. Kaplan, MS, DVM, senior lecturer at Cornell University's College of Veterinary Medicine. There are four types of insulin commonly used for cats: Vetsulin, PZI insulin, Lantus (Glargine), and Humulin N (Humulin R can also be used for cats but is very short acting, so it is generally only used for emergencies within the veterinary hospital).

All these medications are usually available in human pharmacies or from your veterinarian.

Traditionally, insulin comes in a small bottle or vial and needs to be drawn up with a syringe for each dose. Vetsulin and Lantus are both also available in an injection pen, which will administer the correct dose with the click of a button.

Different types of insulin are not interchangeable. If your veterinarian has prescribed a particular insulin for your cat, stick with it, even if there are

other types of insulin available in your household. Consistency and attention to detail will help your cat achieve a normal and stable blood glucose level.

Insulin Syringes

Not all insulin syringes are created equal.

“The most important thing to know is that there are different types of syringes for different types of insulin, so not all insulin syringes are the same and not all can be used for all types of insulin,” says Dr. Kaplan.

What You Can Do:

- ▶ Use a fresh needle and syringe for every dose
- ▶ Stick to a schedule and give insulin and meals 12 hours apart every day, unless otherwise advised by your veterinarian
- ▶ Rotate where you inject the insulin on your cat's body
- ▶ Find out which type of insulin your cat is getting
- ▶ Know if your cat is using U-100 or U-40 insulin syringes

Insulin syringes are tiny compared to other syringes that you may have seen and measure in units rather than milliliters (ml) or cubic centimeters (cc). As if that isn't confusing enough, insulin syringes are also divided into U-100 and U-40. U-100 means that the syringe breaks 1ml into 100 units, whereas U-40 breaks 1ml into 40 units (so one unit from a U-40 syringe is a lot more insulin than one unit from a U-100 syringe).

Your veterinarian will help you navigate these details when he or she shows you how to inject the medication into your cat. “The pet's veterinarian can write a prescription for the insulin syringes, and they can be purchased either at a local or reputable online



Obese cats are four times more likely to develop diabetes than cats who are at a healthy weight.

(continues on page 2, bottom)

Treatment Options for Arthritic Cats

Orthopedic surgeon discusses home management

Steve Budsberg, DVM, a professor of orthopedic surgery at the University of Georgia College of Veterinary Medicine, gave veterinarians a seminar on VETgirl, a continuing education network for veterinarians, about treating osteoarthritis (OA). Interestingly, Dr. Budsberg noted that signs of OA pain may not always include lameness.

Approximately 40% of cats have signs of arthritis, with 90% over the age of 12 having radiographic signs of joint problems. Cats are more likely than dogs to have bilateral and multiple joints involved. Cats also are more likely to show decreased activity or shortened strides than obvious limping. However, Dr. Budsberg advises that any cat with radiographic evidence of arthritis should be treated, even if the owner has not noticed signs of pain. Goals for treatment are to decrease pain, improve joint function, and slow the progression of the arthritis.

Osteoarthritic pain results from a combination of nerve and immune factors. Four areas that help cats with osteoarthritis are weight control, nutrition, exercise/physical therapy, and medical therapy. Weight control often involves a combination of decreased calories and increased activity. In the area of nutrition, research has confirmed that omega 3 fatty acids can help with arthritic pain in dogs. There has not been corresponding work done on cats, but omega-3s are worth trying in your cat, as they will not cause any harm. Before you add any supplement, verify with your veterinarian or a veterinary nutritionist that your cat's current diet doesn't already have plenty.

Studies investigating the ideal rehabilitation techniques in cats with arthritis are lacking. Standard dog protocols may be helpful here, too, says Dr. Budsberg, including underwater treadmill exercise, which many cats handle surprisingly well.

Many cats do well on non-steroidal anti-inflammatory drugs (NSAIDs), but dosing amounts and schedules need to be followed carefully. These drugs are used off label for cats, so you need to discuss them with your veterinarian.

A major therapeutic improvement for arthritic cats is the medication Solensia (frunevetmab), the first FDA-approved treatment for osteoarthritis in cats. This is an injectable therapy using a monoclonal antibody to counteract pain. The monthly injection schedule means owners do not have to give a pill to their cats, which can be traumatic for cats and people. ■

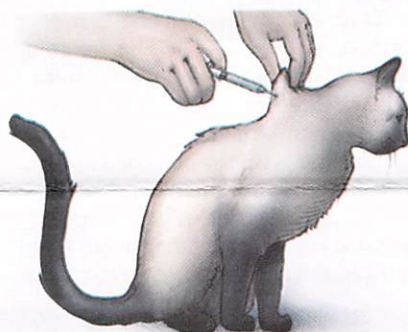
(insulin, continued from page 1)

pharmacy," says Dr. Kaplan. "Since many cats need tiny doses of insulin, owners should request a "low dose" insulin syringe—such as 0.3 mls or 0.5 mls—so it is easier and more accurate dosing when drawing insulin out of the bottle."

If you have an insulin pen for your cat, you won't need to worry about syringes. You will still need to put a fresh needle on the pen for each injection. The needles used for insulin are extremely tiny, and most cats barely feel the injections. You can sweeten the deal by offering an approved treat.

Common Concerns

"It is crucial that owners communicate their specific concerns with their veterinarian," says Dr. Kaplan. The most common concerns that she has experienced are time commitment and lifestyle adjustment due to the necessity of giving insulin injections every 12 hours consistently, financial concerns, fear of giving injections, and diet changes. "Many



To administer an injection, pull the loose skin between the shoulder blades with one hand. With the other hand, insert the needle directly into the indentation made by holding up the skin, draw back on the plunger slightly, and if no blood appears in the syringe, inject gently.

owners are very devoted to their pets' current diets!" she says.

If you have questions about your diabetic cat, talk to your veterinarian. This is a marathon, not a sprint. Work with your veterinarian to make diabetes management a seamless part of your life. ■

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Handle Feline Heat Cycles

Unless you're a cat breeder, spaying your female cat is the simplest and best thing to do

Your lovable, sweet kitten is 6 months old and has turned into a menace overnight. Nonstop meowing, pacing, rolling, and biting when you go to touch her are some of the signs you are seeing. If she's not spayed, she's probably in estrus (in heat).

Cat heat cycles are influenced by daylight hours, with 12 hours of daylight considered the minimum optimum time. Most kittens will have their first heat right around 6 months of age.

The American Association of Feline Practitioners now recommends spaying by 5 months of age to catch most kittens before they have their first heat.

Cats are "seasonally polyestrous." That means that unless she gets bred (or spayed), your cat will continuously go into heat cycles during her "season." For cats in North America, that's about January to October. Not much of a break! March breedings—which research has shown tend to be very fertile—contribute to the huge kitten surplus many rescues and shelters see in June.

Cats are induced ovulators, which means they can become pregnant anytime they are bred. Female cats may

mate with multiple males, so a litter often has more than one sire.

Individual heat cycles vary from cat to cat, but generally last about three weeks. During these three weeks, they will be actively in estrus for about seven days. That means about a week of vocalizing and acting crazy. Then there is a resetting period before it starts all over.

Once bred or, in some cases, spontaneously, a cat will ovulate. In these cases, there is either pregnancy or pseudopregnancy. If she does not ovulate, she will head right back into the estrus cycle.

Behavior Changes

Behavior changes are what most owners notice. Your kitten becomes very affectionate and demanding. She does the rolling behavior and will "tread" with her hind paws on your rugs, furniture, and you. Cats in estrus will often assume a posture with the front end low, the rear end raised, and the tail twitching or slightly turned to the side. Alternatively, the tail may be held out rigidly. They may spray or urinate outside the litterbox, basically announcing their receptiveness to any intact tom cat in the area.

Even with an indoor-only cat, you may see male cats in the area, prowling and spraying outside your house, as your kitten's pheromone odors are potent. Cats in estrus do not usually have a bloody vaginal discharge like dogs do, and vulvar changes are minimal.

Pregnancy in cats lasts between 63 and 65 days. Since a cat can have up to three litters per year, you can understand why there are concerns about feline overpopulation. Female cats may come into estrus while still nursing kittens.

If left intact, your kitten will have an increased risk for some serious health problems, including pyometra (an infected uterus, which requires an emergency spay) and mammary cancer, which is almost always malignant in cats.

The Spay

Researchers have investigated nonsurgical ways to sterilize cats for some time, thus far without long-term success. Melatonin implants can

help suppress estrus in cats, but this is currently a short-term solution. A surgical spay is the only practical option for sterilizing cats at this time.

Cats are commonly spayed even if they are in heat, unlike dogs. As the hormones wane after this procedure, peace will return to your household. When your cat is spayed, her ovaries and uterus are removed, which eliminates the risk of ovarian or uterine cancer. The risk of developing mammary cancer also decreases sevenfold.

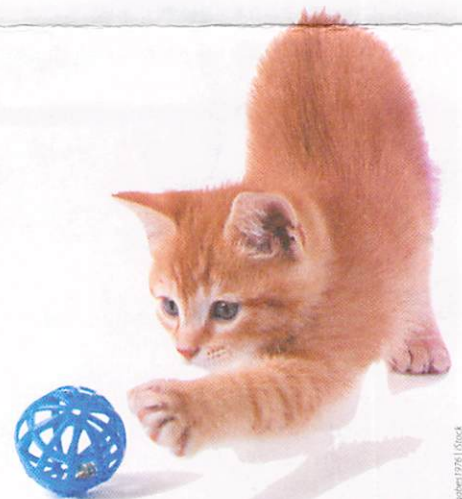
Your cat may, however, still show some signs of being in heat or may develop a uterine infection after a spay. This can occur if a small piece of ovarian tissue is left behind after her spay surgery. Pyometras may develop in the uterine "stump" left from a spay.

In some cases, spayed cats may act as if they are in heat if they are exposed to estrogen supplements such as transdermal hormone replacement therapy (HRT) containing estradiol, progesterone, and dehydroepiandrosterone that is being used by their owners. In these cases, cats may lick ointment or oils off of their owner's skin. In others, cats may be exposed while grooming after cuddling with owners using these supplements.

It is not true that your cat needs to have a heat cycle or a litter of kittens before spaying her. Delaying the spay can expose her to health risks, including injury by a tom cat. Cat matings are often accompanied by growling, shrieking, and possibly fighting. Pregnancy is not without risks. For everyone's sake, unless you are a cat breeder, spay your kitten. ■

Did You Know?

- ▶ **Shorthaired Cats:** Shorthaired cats tend to come into heat earlier and more regularly than are longhaired cats. Some shorthaired cats will also cycle year round, even during times of short day length. This is especially true of Siamese cats.
- ▶ **Surgery Scar:** If you adopt an adult cat but aren't sure if she has been spayed, you can shave her belly to look for a surgery scar. In addition, many feral cat rescues and trap/neuter/release groups will notch an ear as an obvious sign that a cat has been spayed.
- ▶ **World Spay Day:** In 1995, the Doris Day Animal League Foundation initiated the first World Spay Day, now held annually on the fourth Tuesday of February.



While she may still look and act like a baby, your 6-month-old kitten can go into heat.

Loud and Active Senior Cats

An older cat that changes into a noisy cat that seems to never sleep may have hyperthyroidism

Your senior cat has a ferocious appetite but is losing weight. It seems like she is super active all day and all night and meows nonstop. Your cat may be suffering from hyperthyroidism, a serious disease caused by increased thyroid hormone production that is common in older cats. About 10% of older cats will develop hyperthyroidism. Left untreated, the disease can cause damage to the kidneys, heart, and other organs due to the increase in metabolic rate caused by elevated thyroid hormone levels.

“Early recognition can be beneficial. Monitoring your cat’s weight, usually by visiting the vet once or twice a year, will help identify health problems like hyperthyroidism early. Many vets also routinely check thyroid values annually in older cats, which can also be very helpful in early recognition,” says John Loftus DVM, PhD, assistant professor, sections of small animal medicine and nutrition at Cornell University’s College of Veterinary Medicine. Dr. Loftus recommends beginning routine screening for hyperthyroidism in cats at 8 years of age.

While any cat can become hyperthyroid, Siamese and the Himalayan breeds (Burmese and Persian) have a lower risk than the overall cat population. Indoor-only cats have a

higher risk, although the reason for this has not been identified. Indoor cats tend to live longer, but are also exposed to kitty litter and other potential carcinogens such as household cleaners.

What You See

The thyroid gland is located in a cat’s neck, on both sides of its windpipe. Because it influences so many bodily functions, signs of elevated thyroid hormone can vary. Increased appetite with weight loss is common, but it’s a nonspecific symptom that could indicate other problems, too. Often people are thrilled that their senior cat is suddenly more active than normal, but as hyperactivity may be a warning sign.

Some hyperthyroid cats experience vomiting and diarrhea. Others drink and urinate more than usual, so the litterbox may be wetter than previously. Many cats stop daily grooming, so coats become greasy and matted. When snuggling your cat, you may feel like her heart is racing. A few cats will act weak or appear to have trouble breathing.

Diagnosis

Most senior bloodwork includes a measurement of thyroid hormone levels. Most veterinarians also screen cats for high blood pressure and for evidence of kidney dysfunction, both of which may

occur in hyperthyroid cats. If the thyroid is enlarged, it may be palpable on exam.

Some hyperthyroid cats may intermittently have normal thyroid levels due to other illnesses. In these cases, if your veterinarian still feels hyperthyroidism is a possibility, more involved bloodwork, including an equilibrium dialysis free T4 and/or a T3 suppression test may be recommended.

Treatment

You may be given a choice of several different treatment options for your hyperthyroid cat. Costs vary.

① Surgical removal of the affected thyroid is not done very commonly anymore given the fact that there are other effective means of treating this condition that do not require anesthesia and surgery. It is a tricky surgery, especially since many cats have concurrent cardiac problems such as hypertension. It can also be difficult to get only the thyroid gland and not damage or remove the parathyroid gland, which is a tiny gland associated with the thyroid that regulates calcium levels. Low blood calcium can cause potentially fatal seizures and heart arrhythmias. Damaging this gland can require supplements for life.

Up to 20% of cats will have some thyroid tissue in an abnormal or ectopic location. For these cats, surgery is not a cure. A pre-surgical nuclear scan is often recommended to look for any ectopic thyroid tissue.

② A daily medication called methimazole can be used. This medication must be given for the rest of your cat’s life, usually twice a day. Pilling the average cat twice a day can be unpleasant. Luckily, a transdermal form that you administer as a small dab of gel on the inside of the cat’s ears is effective for many cats.

Side effects of methimazole are generally mild and include vomiting and diarrhea. Some cats will develop a facial itch. Reducing the dose or starting at a low dose and gradually increasing it may help to minimize side effects. Rarely, cats will develop kidney or bone marrow problems when given methimazole. Cats on methimazole should have periodic bloodwork to catch any developing problems early on.

③ The use of radioactive iodine has become the treatment of choice for hyperthyroid cats. Iodine is essential for thyroid hormone production. Injecting



If you feel like all he does is meow all day, consider that he may not feel well.

radioactive iodine concentrates the iodine in the overactive thyroid gland, and the associated radiation, which is very focused within the region of the thyroid gland, destroys overactive thyroid gland tissue. One treatment is generally curative with minimal side effects. Up to 95% of cats are considered cured after their first dose. Radioactive iodine therapy will address any ectopic thyroid tissue, unlike a surgery.

The big catch is that this treatment must be done at a specially licensed facility, since radioactive materials are used. Cornell University is one of the facilities licensed to offer this treatment. Cats will shed some radioactive material in their urine and feces after therapy, so they must stay at the facility with special precautions taken until they are clear due to concerns regarding human risk. The average time for this clearance is between three and five days. While the cost of radioiodine therapy can be somewhat high, it is likely comparable to the long term costs of other therapies when considering the cost of medications, veterinary visits, bloodwork, and/or anesthesia that are associated with other treatment options.

➔ Limiting dietary iodine by feeding prescription iodine-restricted diets can be effective because iodine is essential for the production of thyroid hormones.

A therapeutic diet is an easy treatment if your cat will eat it, but no other foods can be given for the rest of your cat's life. This can be tricky if you have more than one cat and/or if your cat is allowed outside. Verify with your veterinarian that this diet is adequate if your cat has other health problems.

The bottom line on feline hyperthyroidism is that it is usually ultimately fatal if left untreated. A frank discussion with your veterinarian can help to guide you to the best options for your individual feline companion. ■

Renal Failure

Cats with underlying renal (kidney) failure require extra precautions with hyperthyroid treatment. The increased blood flow stimulated by an overactive thyroid gland can mask undiagnosed kidney failure. Careful monitoring of the renal status of all cats being treated for hyperthyroidism is recommended to address the issue of renal failure.

The Most Common Feline Bladder Disease

It's the cause of over half of all feline bladder issues, and stress is a suspected leading cause

It's no secret that bladder issues are common in cats. Just walk down the cat food aisle and note all the diets touting "urinary tract health." What may surprise you, however, is that what your cat eats is no longer considered the main culprit for the most common cause of lower urinary tract disease in cats. Dietary management is still important, mind you, but it has been one-upped by our favorite feline nemesis: stress.

Feline idiopathic cystitis (FIC) is the most common cause of lower urinary tract disease in cats, especially young to middle-aged cats. Studies have shown that greater than 50% of all feline bladder issues are due to FIC.

To understand it better, let's break down the terms in FIC:

- ▶ "idiopathic" means we don't know what causes it
- ▶ "cyst" refers to the bladder
- ▶ "itis" means inflammation

So, FIC is an inflammatory bladder disease without a known cause. That said, it's becoming abundantly clear that stress plays a major role.

Even if your cat doesn't appear outwardly stressed, hidden physiologic stress could be causing FIC. Research shows that some cats are genetically wired differently when it comes to responding to and managing stress.

Feline stressors include physical issues like pain and illness, as well as environmental stressors like moving to a new home or introduction of a new pet. Indoor confinement, even if your cat acts like the happy queen of the roost, is stressful.

The nervous systems of cats with FIC seem to be super-charged, with exaggerated physiological responses to stimuli that create normal, tempered responses in other cats.

The result is a snowballing of the negative effects of stress in FIC cats.

Signs of Illness

Abnormalities of the bladder wall in FIC cats have been identified. These compromised areas allow urine to contact the sensitive nerve tissue underlying the protective mucosal lining of the bladder. Urine is irritating to this tissue, which is already highly sensitive in these cats. Progressive inflammation, worsening pain, and overreaction to that pain all lead to a hot mess in a hurry.

Signs of FIC are similar to the signs of many other lower urinary tract diseases in cats. These include:

- ▶ bloody urine (hematuria)
- ▶ straining to urinate (stranguria)
- ▶ urinating small amounts frequently (pollakiuria)
- ▶ painful urination (dysuria)
- ▶ abdominal pain
- ▶ licking at the genitals or lower abdomen
- ▶ urinating outside of the litterbox

Diagnosis

Diagnosis of FIC requires ruling out other potential causes of lower urinary tract diseases, including bladder stones, bladder tumors, and bladder infection. Testing usually includes urinalysis,



Frequent licking of the genitals may be a sign of FIC.



Litterbox problems should be promptly brought to your veterinarian's attention.

urine culture, abdominal x-rays, and/or abdominal ultrasound. Once bladder stones, tumors, and infection have been ruled out, a presumptive diagnosis of FIC is usually made.

Treatment

Short-term treatment of an acute episode of FIC is focused heavily on pain management. Opioid medications like buprenorphine or tramadol are frequently prescribed.

Gabapentin, a popular neuropathic pain reliever, can be a big help. Sometimes, anti-spasmodic medications are prescribed, especially for male cats who are prone to urinary tract obstruction. Maropitant (Cerenia), an anti-vomiting medication, may be recommended, as it has anti-inflammatory and pain-relieving effects on internal organs.

Veterinarians commonly treat cats with urinary tract infections with antibiotics, which makes sense. If your cat is having recurring bouts of lower urinary tract signs, though, you and your veterinarian may want to reconsider the cause. An episode of FIC typically self-resolves without treatment in two to seven days. So, unless your cat has a positive urine culture or urinalysis findings that confirm a bacterial urinary tract infection, antibiotics may not be appropriate therapy. Your cat may get better without them.

Bottom Line

FIC is typically a chronic, recurring disease, and prevention is key to success. That means working with your veterinarian to develop nutritional, medical, and environmental management tactics (see "What You Can Do"). ■

What You Can Do

Management recommendations are plentiful when it comes to trying to help your cat live a longer and better life. FIC is a chronic disease without a standard proven effective treatment, so implementing these changes is your best chance to provide your cat with relief from the signs of FIC.

Dietary recommendations include:

- ▶ Use a diet designed to promote healthy urine pH. The food's mineral content should be carefully calculated to minimize urinary crystal formation.
- ▶ Try to increase your cat's consumption of canned food over dry. When canned food is consumed, more water gets into your cat's system, which results in more dilute urine. Irritating crystals are less likely to form in dilute urine, and dilute urine is less toxic to the compromised bladder wall in FIC cats. This may take patience. While canned food seems like an "easy" addition, not all cats enjoy its texture, opting instead for dry food.
- ▶ Adding antioxidants and omega-3 fatty acids has helped reduce FIC recurrences. Stress-relieving ingredients like L-tryptophan and alpha-casozepine may help lessen recurrences.

Long-term medical management recommendations may include:

- ▶ Anxiolytic medications like amitriptyline, a tricyclic antidepressant with some analgesic and anti-inflammatory capabilities; or fluoxetine (Prozac), a selective serotonin reuptake inhibitor (SSRI).
- ▶ Maropitant (Cerenia) for its anti-inflammatory and analgesic effects.
- ▶ Adequan (polysulfated glycosaminoglycans), an injectable product that can be used extra-label in cats and may help restore the protective lining of the bladder that becomes damaged in FIC.
- ▶ Non-steroidal anti-inflammatory medications like robenacoxib (Onsior) or meloxicam (Metacam) for pain relief.

Recommended environmental enrichment/modifications include:

- ▶ Elevated perches and structures for climbing and scratching
- ▶ Window seats/beds with or without bird feeders for viewing
- ▶ Plenty of toys that are changed up frequently to maintain interest
- ▶ Increased interactive time with pet owners/family members
- ▶ A private, quiet area where the cat can "get away" when needed

Litterbox management:

- ▶ One litterbox per cat plus one more
- ▶ Large, uncovered litterboxes in multiple private areas
- ▶ Feliway, which contains synthetic "feel good" pheromones that may help lessen daily anxiety and stress
- ▶ A litterbox on every floor
- ▶ Litter scooped daily, and the box washed and litter replaced weekly
- ▶ Use unscented, clumping litter
- ▶ Food/water dishes separate from litter pans and washed daily

Yes, Cats Can Eat Carbs

Debunking rumors about this safe energy source

We all want to keep our cats happy and healthy. Unfortunately, this desire makes it easy for marketing claims and personal beliefs to spiral out of control and create deep-seated myths and misunderstandings. Carbohydrates (carbs) and cats are one such example.

Fact: Cats Can Digest Carbs

Cats absolutely can digest carbohydrates and use them for energy and nutrition. “I really like rice due to its digestibility,” says Joseph Wakshlag, DVM, PhD, chief of Cornell University’s College of Veterinary Medicine’s Nutrition Service. Carbs are an energy source that can help keep foods affordable.

While it is true that cats also need other nutrients—including animal protein, fats, vitamins, and minerals—to survive, cats can and do digest carbs that are included in their diets.

Fact: Carbs Provide Nutrition

The primary reason that carbs are included in many cat diets is because they are an inexpensive source of energy, helping to keep food costs down for cat lovers. Carbohydrates provide the same amount of energy as protein, which is 3.5 to 4 calories per gram.

More complex carbohydrate sources often bring additional nutrients to the table, including:

- ▶Fiber
- ▶Antioxidants
- ▶Omega-3 and omega66 fatty acids
- ▶Vitamins
- ▶Minerals
- ▶Probiotics for a healthy gut microbiome

“Grains and other carbohydrates in pet food are not there as fillers. They actually provide valuable nutrients and properties to the diet,” says Cailin R. Heinze, VMD, board-certified veterinary nutritionist at the Cummings School of Veterinary Nutrition.

Myth: Carbs Cause Diabetes

Carbohydrates do not cause diabetes mellitus in cats. Obesity is a risk factor for developing diabetes, but a cat

can become overweight on any diet regardless of carbohydrate content. Diets touted as being “low-carb” often have a higher fat content. Fat has more calories than protein or carbs, so the same serving of a low-carb, high-fat diet may have more calories than a classic cat food.

To keep your cat at a lean, healthy weight and decrease the risk of diabetes, monitor your cat’s intake by feeding measured meals throughout the day instead of leaving out a full bowl.

Food-dispensing toys and puzzles make mealtimes more interesting and encourage your cat to move around. Interactive play with balls and wand toys will also increase your cat’s exercise.

“I really like rice due to its digestibility,” says Joseph Wakshlag, DVM, PhD, chief of Cornell University’s College of Veterinary Medicine’s Nutrition Service.

If your cat is already overweight, talk to your veterinarian about developing a safe weight loss plan. This may include switching to a low-calorie food and doing some blood testing to check for health conditions that are contributing to the weight gain.

Cat already has diabetes? This is where low-carb diets can be beneficial. Your veterinarian may recommend a low-carb diet as part of the plan to manage your cat’s diabetes and regulate her blood sugar levels. Feeding measured meals and tracking how much your cat eats will be helpful to keep her stable.

Myth: Dry Foods Are Mostly Sugar

While most commercial cat foods (dry and canned) do contain carbohydrates to one degree or another, they are not pure carbs. “The carbohydrate level of most commercial cat foods varies from about 20 to 50 percent on a metabolizable energy basis,” says Brennen McKenzie VMD in the May 26, 2022, *Veterinary Practice News*. “This is certainly higher than the carbohydrate content of a rodent carcass, but it is mostly complex carbohydrates and certainly not consistent with the extreme claim

sometimes made that such diets are ‘mostly sugar.’”

Adult cats require a minimum of 26% of their diet to be protein. They are obligate carnivores, which means they must eat meat. They also require a minimum of 9% fat. If you stroll down the pet food aisle of your grocery store, you will find that most dry foods contain more than these minimums.

The American Association of Feed Control Officials (AAFCO) makes recommendations for animal foods. Cat foods that have an AAFCO statement on their labels are required to have at least 26% protein and 9% fat, meaning that carbs will, at most, make up approximately 65% of the diet.

Myth: Carbs Cause Food Allergies

Carbohydrates, particularly grains, are frequently scapegoated as a source of food allergies in cats and dogs. In reality, proteins like chicken, beef, and eggs are the much more likely villains. Food allergies to carbs are rare.

Bottom Line

Cats are perfectly capable of digesting carbs and thriving. The important thing is that your cat’s diet is complete and balanced, following AAFCO recommendations. ■



Many of us can relate to the frustration of figuring out what a cat is willing to eat. Avoid falling prey to rumors and fads when it comes to your cat’s diet. Ask your veterinarian for advice.

Kidney Disease: Don't Give Up

While it's a devastating diagnosis, it's also common, with multiple supportive treatments

Q We have an overweight male Siamese (22 pounds) who recently went to the veterinarian to have his teeth cleaned. On retrieving him, we were told he has stage 2 chronic kidney disease (CKD).

We were shocked that the veterinarian wants to see him again in a couple of weeks and then every three months. It appears that not a lot can be done for kidney disease other than a prescription diet and an emphasis on the cat's hydration.

Our question is, if basically nothing can be done, why are we taking him back every three months? Any advice you can offer would be appreciated.

A Thanks for getting in touch, and I am very sorry to hear of your cat's recent diagnosis. While I understand your concern and confusion, I am hopeful that a brief discussion of the management of CKD will be helpful. In addition, please refer back to our January 2023 issue, which has an informative article on catching CKD early. You can access that article at catwatchnewsletter.com.

To start, please consider discussing the possibility of a weight-loss program with your veterinarian, as being overweight can have negative impacts on the wellness of any cat, and this impact may be exacerbated by many diseases.

The issue of weight loss in cats with CKD is controversial, and while it is important to maintain lean body mass if a weight loss program is pursued, this determination should be made in close consultation with a veterinarian and/or veterinary nutritionist. Weight loss that occurs too rapidly can cause hepatic lipidosis, or fatty liver disease, which can be fatal.

It is true that the cornerstones of therapy for cats with CKD are assuring

adequate hydration, limiting dietary proteins and phosphorus, and providing adequate dietary antioxidants and B vitamin supplementation, but it is also important to realize that cats can develop health problems secondary to CKD that should be monitored for and addressed promptly if they occur.

The most common of these is systemic hypertension, which is high blood pressure. Since the kidneys are essential in the maintenance of normal blood pressure, it makes sense that cats with CKD may develop abnormalities of blood pressure, and this is most commonly seen as hypertension in feline CKD patients.

Hypertension can damage the heart, brain, and eyes, and may worsen kidney function. Retinal detachment, which usually leads to blindness, is of particular concern in cats with hypertension. Regular monitoring of blood pressure and prompt treatment of hypertension, if identified, is essential to maintaining the well-being of cats with CKD.

Cats with CKD may also begin to lose protein in their urine as the disease

progresses, which it most commonly does, and there are therapies available that can minimize this loss of protein in the urine.

For this reason, regular monitoring of urine for inappropriate protein loss is very important so that therapy can be instituted if protein in the urine (called "proteinuria") is identified.

The kidneys are also important in maintaining normal red blood cell production, primarily through the secretion of a hormone called erythropoietin.

Cats with CKD may suffer from decreased erythropoietin production, which can cause anemia (decreased red blood cell concentration in the blood). Regular monitoring of red blood cell concentration can prompt therapies to address anemia (transfusions, erythropoietin administration) if they develop.

Finally, since the kidneys are very important in maintaining normal electrolyte concentrations in the blood, cats with CKD may experience electrolyte abnormalities that can be addressed if they are identified during regular screenings.

I hope that this helps, and please continue to work closely with your veterinarian to assure the best care.

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



Keeping your cat active to help control weight can hold off other complications.



Do You Have a Health Concern?

Send your health questions to Bruce Kornreich, DVM, PhD, DACVIM, Director of the Cornell Feline Health Center and Editor-in-Chief of CatWatch. Email to catwatcheditor@cornell.edu or send by regular mail to CatWatch, 535 Connecticut Ave., Norwalk, CT 06854-1713.



Scan this code for more information on the Cornell Feline Health Center.

Coming Up ...

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- ▶ *Enrich Your Indoor Cat's Mind*
- ▶ *Who Needs Effective Flea Control?*
- ▶ *When Kitty Eats the Knitting Yarn*
- ▶ *Feline Aortic Thromboembolism*