

Is Your Finicky Eater Suffering From Pancreatitis?

Dogs with an inflamed pancreas typically have abdominal pain and vomiting. With cats, it's often a whole different story. If your kitty sleeps a lot, refuses her food and shows these other subtle signs, make an appointment to rule out this serious disorder found in 65% to 70% of cats upon autopsy.

Analysis by Dr. Karen Shaw Becker

STORY AT-A-GLANCE

- The pancreas has two functional compartments — the endocrine pancreas and the exocrine pancreas; the most common disease of the exocrine pancreas in cats is pancreatitis
- Pancreatitis is inflammation of the pancreas that causes the organ to malfunction; the root causes are not well understood, and considered "idiopathic," but functional medicine veterinarians agree that biologically inappropriate diets are a significant contributing factor
- Common symptoms of feline pancreatitis are lethargy and lack of appetite; treatment involves supporting the patient through the crisis phase of the disease and taking steps to prevent future flare-ups
- Another disease of the exocrine pancreas is exocrine pancreatic insufficiency (EPI), which is characterized by a decrease or lack of digestive enzymes produced by the pancreas, resulting in lack of nourishment
- Weight loss and loose stools are primary symptoms of EPI, which is a potentially fatal disease; a majority of cats with the disorder respond well to supplementation with digestive enzymes

The pancreas plays an essential role in converting the food your cat eats into fuel for the body's cells. It has two primary functions: an exocrine function that helps in digestion and an endocrine function that regulates blood sugar. Veterinarian Dr. Joan Capuzzi, in her article "When things go wrong in the feline pancreas," describes it this way:

"The pancreas is basically a bag of enzymes and hormones. The potent compounds it releases function as key activators needed for life. Sickness results when the pancreas becomes overzealous or, alternatively, slacks off."¹

There are a number of ways your cat's pancreas can malfunction, but because symptoms are often subtle, non-specific and "out of the blue," disorders of this very important organ can be challenging to diagnose.

The Two Compartments of the Pancreas

- **Endocrine pancreas** — The endocrine pancreas contains cells that produce compounds such as insulin, glucagon and somatostatin and releases them into the bloodstream. In kitties, the primary disease of the endocrine pancreas is diabetes. For a thorough discussion of feline diabetes, including my thoughts on its primary causes and things you can do to help your cat avoid this terrible disease, read **[What's the Best Treatment for Feline Diabetes?](#)**

- **Exocrine pancreas** — The exocrine pancreas contains cells that produce and release enzyme precursors, which mix with pancreatic proteases in the intestinal lumen and transform into digestive enzymes (e.g., amylase, protease and lipase). The exocrine pancreas also produces bicarbonate that neutralizes stomach acid and other substances, which supports absorption of cobalamin (vitamin B12). The most common disease of the exocrine pancreas is pancreatitis

Today I'll be discussing both pancreatitis and another much less common disease of the exocrine pancreas that is often the result of pancreatitis — **exocrine pancreatic insufficiency**.

Pancreatitis Symptoms and Potential Causes

Pancreatitis is inflammation of the pancreas that can disrupt its normal functions and cause other symptoms as well. An inflamed pancreas is a serious problem because as I just mentioned, this organ serves two vital functions in your cat's body. Number one, it produces hormones — insulin and glucagon — that balance blood sugar. Number two, it produces digestive enzymes such as amylase, lipase, and proteases that enable the body to use carbohydrates, fats and proteins for energy.

One of the enduring mysteries of pancreatitis is that the severity of inflammation can range from very mild to fatal. Estimates are that between 65% and 70% of cats show signs of pancreatitis at autopsy.² Not all those cats died of a problem with the pancreas, which suggests the organ is predisposed to injury and damage secondary to other diseases.

Unlike dogs with pancreatitis who typically have vomiting and abdominal pain, symptoms in cats are sometimes so mild they aren't noticeable. The most common signs are lethargy and lack of appetite, but since cats naturally sleep a lot and many are finicky eaters, these signs are often mistaken for normal feline behavior.

Occasionally, kitties will show signs of a tender abdomen, vomiting and even a fever, but they tend to be the exception. That's why a good rule of thumb if you're a cat guardian is to make an appointment with your veterinarian if you notice any changes in your pet's weight, appetite, thirst, elimination, or behavior. Any such change is a sign something's probably happening inside the body that requires investigation.

Another puzzle surrounding feline pancreatitis is what causes it. In a small percentage of cats, the condition has its roots in trauma to the pancreas, a viral or parasitic infection, or exposure to a toxin like organophosphates typically found in pesticides. In some cases, dietary indiscretion is the cause. For example, my brother's cat once knocked over a bottle of olive oil and licked it all up, causing acute pancreatitis.

Certain drugs are known to trigger pancreatitis, including phenobarbital, **prednisone and other glucocorticoids**, and diuretics. But with all that said, in my experience, most cats who develop chronic or recurrent pancreatitis don't have an identifiable trigger. Their owners can't pinpoint an event that caused the pancreas to get angry, so it's defined as "idiopathic," or occurring for unknown reasons.

Most functional medicine veterinarians, including me, would disagree. Many cats suffer from chronic subclinical gastrointestinal (GI) inflammation and an equal number struggle with overt GI disease in the form of low grade enteritis, gastritis, colitis, or inflammatory bowel disease (IBD). Cats have lots of GI problems, and the culprit revolves around food.

Carnivores or Carbivores? Cat Food and Pancreatitis

Cats have been our companions for thousands of years. For most of that time, we have allowed them to do what they do: hunt small prey. In the last one hundred years, we've brought them inside full-time (to keep them safe) and abruptly transitioned them from the natural diet they've consumed forever, to an exclusive diet of highly refined carb-based foods with an entirely different macronutrient profile than their natural diet.

Fresh, real meat was replaced with ultraprocesed diets made from rendered meat meals, recycled fats, corn, soy and other grains. Nutrient-rich organs were replaced with synthetic vitamins and minerals, added to formulas in large quantities to replace the vast number of nutrients that are lost during the multiple high-heat processes cat food ingredients undergo from field to food bag.

These foods look nothing like a cat's evolutionary diet, in form or function. In less than a century, we've asked cats' metabolic machinery to evolve at lightspeed, enough to thoroughly and efficiently process completely foreign foods, and guess what? They've failed. The end result has been a host of brand-new diet-related diseases seen in the last 75 years, such as cardiomyopathy, nutritional retinopathies, obesity, diabetes, kidney disease, hyperthyroidism, cystitis, IBD, megacolon, megaesophagus and yes, pancreatitis and EPI.

Some of these diseases are multifactorial. Cats living inside, unable to make independent decisions or choices, sharing life with stressed humans in a perpetually stressful environment exacerbates bladder inflammation. Our toxic world has crept into cat foods, lacing them with chemical endocrine disrupters that have caused feline hyperthyroidism to skyrocket. But we can't deny the fact that what we are feeding our cats, specifically **kibble**, is not biologically appropriate. Creating the ultimate convenience food for our feline companions has come with a cost: their health.

In terms of diet, cats aren't much different from humans over the last hundred years. Research shows about 60% of American's daily calories come from ultraprocesed junk food. This has also negatively affected our health with the same list of diet-related diseases that affect our cats. The difference is we can make different food choices, but our cats are held hostage to whatever system of food philosophy their owners prescribe to. They can't opt to eat foods that better resonate with their physiology, unless their guardians concur (or they're able to catch the mouse in the house).

When given a choice, research shows indoor housecats choose 10% more carbs than feral cats (probably because they've grown fond of them, just like we have). Not surprisingly, captive cheetahs also opt not to carb load, and choose macronutrient profiles similar to domestic feral cats.



When allowed to choose their sources of calories, cats choose protein first, then fat, and carbs trail behind at less than 15%. Most functional medicine and integrative feline veterinarians recommend using these macronutrient ranges as a guide for what we should be striving for when we attempt to reduce metabolic stress in our feline patients.

Compare these numbers to any cat food formulation. Some companies list the amount of carbs in their formulas, for example Hill's Science Diet. Their Adult 7+ Chicken Recipe kibble for cats contains 38.6% carbohydrate/NFE.³ Cats require zero carbs. If close to 40% of their diet is metabolically unnecessary sugar, chances are this alone will contribute to a variety of avoidable health consequences over time. Most importantly, this amount of carbs offsets the amount of critical protein needed for felines to be healthy. Most cats are overfat and undernourished, and not by their choice.

Other companies make it more difficult to find out many carbs are in their diets. I recommend you calculate the amount of starch you're feeding your cat so you have some idea of how metabolically stressful his diet is to his body.

On the side of the bag you'll see the guaranteed analysis. Add up the protein, fat, fiber, moisture and ash (estimate 6% if it's not listed) and subtract from 100 and you'll have the amount of starch in your dry cat food. I recommend feeding a diet that's less than 15% carbs to minimize nutritional stress (there are plenty of other sources of stress for your cat, food shouldn't be among them!).

The more carbs we feed cats, the harder their pancreas must work. Carbs are starch, and starch breaks down into sugar. The pancreas must produce tremendous amounts of insulin to balance the constant hyperglycemic state that results from a starch-rich diet, especially in free-fed cats who have access to food all day and night. If the pancreas can't keep up, the body will store the excess energy as fat (leading to obesity) and/or become insulin insensitive (diabetes).

Fresh food, a cat's ancestral diet, comes pre-loaded with abundant digestive enzymes found in their prey's GI tract and pancreatic tissue. These enzymes get passed up the food chain to assist in digestion and assimilation. Enzymes are very sensitive to heat and are inactivated above 150 degrees. Kibble ingredients have been heated an average of 4 times well over 300 degrees, making the food completely devoid of phytonutrients, food-sourced antioxidants, polyphenols and enzymes (and loaded with carcinogenic and kidney toxic **AGEs**). This means your cat must produce all of the enzymes necessary to process their foreign food, and in grossly abnormal proportions.

The feline pancreas must secrete protease and lipase to digest an evolutionary diet of fresh meat. Amylase (the enzyme necessary to process carbs) has not been required in high amounts, evolutionarily, because cats have not consumed notable amounts of starch. Until now. In the last 100 years we've essentially converted cats from carnivores to "carbivores," and their amylase secretion has not caught up with the flood of starch we're forcing their bodies to metabolize. The end result is enzyme deficiency (pancreatitis).

Without adequate pancreatic enzymes, your cat's body can't digest her food. The corn, wheat, rice, soy, quinoa, legumes, tapioca, potatoes and whatever new carb-of-the-day the ultraprocessed pet food industry is touting as the next best ingredient will go undigested, creating gastrointestinal disturbance, and so much more. Yes, vomiting, diarrhea and constipation are cues that your cat is having digestive problems, but more often than not, chronic small intestine inflammation is the result. Dysbiosis (**leaky_gut**) leads to progressive systemic issues affecting every aspect of a cat's overall wellbeing. Long term inflammation has been associated with feline GI lymphoma.

Diagnosis and Treatment Options

Since many cats don't have overt symptoms of pancreatitis, and many of the symptoms they do have are associated with several other feline diseases, a number of diagnostic tests are typically required to arrive at a confirmed diagnosis. These can include a physical exam, complete blood count (CBC) and blood chemistry panel to include pancreatic enzyme levels, urinalysis, x-rays, ultrasound, and biopsy. Biopsies of the pancreas are not recommended, however, because they tend to trigger inflammation and can make a bad situation worse.

I have found **functional GI testing** to be very beneficial in diagnosing underlying maldigestion and malabsorption in chronic pancreatitis cases. Addressing a cat's leaky gut can make a tremendous difference. The goal of both diagnosis and treatment is a noninvasive approach.

The most accurate test for pancreatitis in cats is the feline pancreatic lipase immunoreactivity (fPLI) test. This is also the best test to use after your pet has been treated to ensure the condition is truly resolved.

Treatment of feline pancreatitis starts with getting the patient through the crisis phase of the disease. If your cat is anorexic, this usually means hospitalizing her so she can receive intravenous (IV) fluids and supportive medications until the crisis subsides.

Once she is stabilized, one of the best things you can do to avoid another flare up is to supplement her diet with digestive enzymes. I recommend supplemental enzymes even for cats consuming a fresh food diet. This is because we aren't able to supply our pets with all the pieces and parts found in whole prey that naturally supply food-based pancreatic support (a prey's glandular and GI systems including the whole fresh pancreas, bile, and beneficial bacteria). Digestive enzymes can help "fill in the gaps" of these missing tissues in feline diets. This is a lifesaving step for many cats when it comes to preventing future episodes.

I recommend you also offer your cat a high-quality probiotic and transition her to a moisture-rich, carb and grain free novel protein diet (first canned, then gently cooked, then ideally raw) to reduce the risk of future episodes of pancreatitis. The less heat-processed her food, the more naturally occurring enzymes will be present and the fewer pro-inflammatory AGEs she'll consume.

I also find Standard Process Pancreatrophin and Feline Whole Body Support very beneficial. All of these suggestions should be instituted at the appropriate time, when your cat is stable. Your integrative feline veterinarian will help you transition to a less metabolically stressful diet and add the right supplements, based on bloodwork.

Unfortunately, if a comprehensive supplement prevention strategy and a diet change isn't instituted, pancreatitis often recurs. But this shouldn't be all that surprising: if you don't change anything, all the triggers that elicited the initial episode will continue to trigger ongoing episodes, usually with serially worse outcomes, as the pancreas scars and fibroses.

It's a serious and progressive disease that can result in complications like diabetes, **hepatic lipidosis** (fatty liver), bleeding and clotting disorders and even brain damage. It's also a painful condition. If your cat has had one episode of pancreatitis, this should be enough of a wakeup call for you to institute a lifestyle overhaul to prevent future episodes going forward.

Exocrine Pancreatic Insufficiency (EPI)

Exocrine pancreatic insufficiency (EPI), also called pancreatic insufficiency and maldigestion syndrome, was initially thought to be rare in cats; however, emerging research suggests veterinarians should look more closely at EPI as a potential cause of diarrhea and chronic weight loss in kitties. Not shocking, given what we've just covered in the information on pancreatitis.

To review, enzymes produced in the exocrine pancreas include amylase, which breaks down starches; lipase, which breaks down fats; and trypsin and chymotrypsin, which break down proteins. The actions of these enzymes are crucial to the digestive process. They allow nutrients from the diet to be absorbed by the cells of the intestine, where they pass into the bloodstream and are transported throughout the body for use by tissues.

When your cat eats, the pancreas gets a signal to release **digestive enzymes**, which travel into the small intestine via the pancreatic duct (exocrine glands secrete their products into ducts, whereas endocrine glands secrete their products directly into the bloodstream). Once they reach the center of the intestine, the enzymes go to work breaking down food particles.

Exocrine pancreatic insufficiency means there is a decrease or lack of digestive enzymes being produced by the pancreas. In cats with this disorder, proteins, starches and fats from the diet aren't broken down sufficiently to be absorbed through the intestinal wall. This means nutrients can't get into the bloodstream to supply nourishment to the body's tissues.

Much of the food that is eaten remains undigested in the GI tract and ultimately leaves the body in feces. If left untreated, cats with EPI can literally starve to death despite the amount they consume.

Causes, Symptoms, Diagnosis and Treatment Options

EPI can have several potential causes, but the most common in cats is pancreatitis. As we've already discussed, when the pancreas can't keep up with the enzyme demand, inflammation (pancreatitis) is the result. This means the organ can't do its job and secrete enough enzymes for food digestion. Rarely, there are other causes, such as parasitic infestations, as well as cancer.

With EPI, the cat's acinar cells fail to produce adequate amounts of all of the digestive components, resulting in malabsorption and digestion that creates visible symptoms. A retrospective study published in 2016 evaluated feline EPI in 150 cats and noted the following:⁴

- The average age of affected cats was 8 years
- Males represented 59%; females, 41%
- Average body condition was poor
- Of the cats for which cobalamin (vitamin B12) levels were measured, 77% were deficient and many had no detectable levels at all; for cats who had folate concentrations tested, 47% showed an increase
- In 91% of the cats, weight loss was the primary symptom; 62% had loose stools; 50% had poor haircoat; 45% had loss of appetite; 42% had increased appetite; depression was present in 40%
- Almost 60% of the cats had coexisting diseases including inflammatory bowel disease (IBD), diabetes, pancreatitis and hepatic lipidosis

The feline trypsin-like immunoreactivity (fTLI) assay is considered diagnostic for EPI. Prior to the availability of the fTLI, diagnosis was trickier and involved taking a symptom history and running repeated fecal digestion tests.

Of the cats in the 2016 study, 68% were given pancreatic enzyme supplementation. Of those, 66% showed a good response, 24% had a partial response, and 10% had a poor response to the treatment.

If there are low cobalamin levels, subcutaneous (under the skin) supplementation for several weeks is often required to help resolve gastrointestinal symptoms. This can be lifesaving, so don't skip this step.

EPI can be associated with small intestinal dysbiosis (also called small intestinal bacterial overgrowth, or SIBO), especially when low B12 and high folate levels are present. Correcting dietary macronutrient ratios will rebalance the microbiome in this situation.

Cat owners and especially veterinarians should consider fTLI, cobalamin and folate tests for kitties with unexplained weight loss or **chronic diarrhea**, regardless of the pet's age. These tests could conceivably eliminate the need for more expensive and invasive diagnostic procedures.

EPI should also be viewed as a possible concurrent condition in diabetic cats whose blood sugar levels are well controlled but who have weight loss and/or diarrhea. Of course, apply all the dietary and supplement suggestions I made for pancreatitis to EPI kitties, as they are intimately related. Both revolve around the gross shortcomings of ultraprocessed, starch-heavy, biologically inappropriate diets.

Sources and References

^{1,2} [dvm360, March 18, 2020](#)

³ [Hill's Science Diet Adult 7+ Chicken Recipe cat food - Average Nutrient & Caloric Content](#)

⁴ [Xenoulis, P.G. et al. J Vet Intern Med. 2016 Nov-Dec; 30\(6\): 1790-1797](#)
