

Pancreatitis in Cats



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Most of us have heard of the pancreas but aren't really sure what it is.

The pancreas is a pale pink glandular organ nestled just under the stomach. It has two main functions: the production of metabolic hormones (insulin and glucagon, which regulate blood sugar) and the production of digestive enzymes, which are secreted through a duct into the intestine to digest food. In cats, the pancreatic duct frequently joins with the common bile duct from the liver, which means that both bile (a fluid used to excrete toxins as well as to prepare fat for absorption into our bodies) and pancreatic fluid, which is rich in digestive enzymes, enter the intestine from the same location. There are other hormonal products from the pancreas that assist in the regulation of digestion and movement of food but the above description is a basic picture of what the pancreas does.

Pancreatic encephalopathy (brain damage) can occur if the fats protecting the central nervous system become digested.

Pancreatitis is potentially a metabolic disaster. Here's why:

The normal pancreas has a number of safeguards in place to keep its digestive enzymes securely stored. If these enzymes escape and become active, they will digest the body! This is exactly what happens when the pancreas gets inflamed: the enzymes escape, become inappropriately activated, and begin digesting the pancreas itself. The living tissue becomes further inflamed and the tissue damage quickly involves the adjacent liver. Toxins released from this rampage of tissue destruction are released into the circulation and can cause a body-wide inflammatory response. If the pancreas is affected enough so as to disrupt its ability to produce insulin, diabetes mellitus can result; this can be either temporary or permanent.

Complications

Certain disasters complicating pancreatitis include disrupting surfactants in the lung tissue that normally keep the tiny air-filled alveoli from collapsing after each exhaled breath. Without surfactants, the alveoli close up and respiratory failure results.

Also, fats throughout the body are destroyed in an event called the Weber-Christian syndrome.

Pancreatitis is one of the chief risk factors for the development of what is called **disseminated intravascular coagulation**, or DIC, which is basically a massive uncoupling of normal blood clotting and clot dissolving mechanisms. This leads to abnormal simultaneous bleeding and clotting of blood throughout the body.

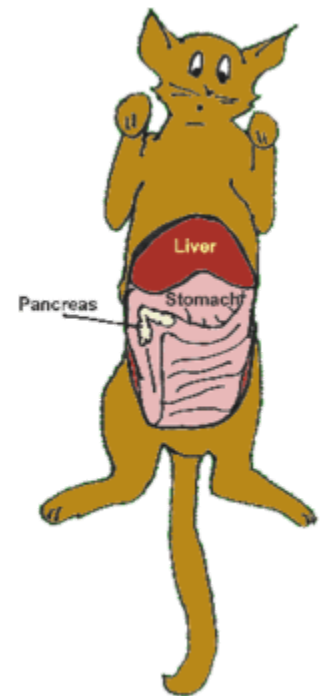


Illustration by Wendy Brooks, DVM

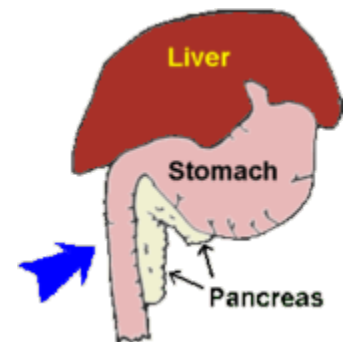


Illustration by Wendy Brooks, DVM

Fortunately, total disasters such as the above are rare but be aware that the potential for such disasters exists should the pancreatic inflammation get out of hand. Most of the time, pancreatitis is confined to the area of the liver and pancreas.

Pancreatitis can be acute or chronic (acute cases can reverse completely).

Pancreatitis can be mild or severe (acute cases tend to be more severe and mild cases may not even require treatment).

What Causes Pancreatitis in Cats?

Unfortunately, 90% of the time we never find out. We have some idea of possible risk factors, though.

- There may be an association with pancreatitis and [inflammatory bowel disease](#). The theory is that the abnormal intestinal disease leads to an overgrowth of bacteria. These bacteria are able to crawl up the pancreatic duct and cause infection in the pancreas.
- Trauma (getting hit by a car or falling from a great height).
- An active [feline distemper](#) infection.
- Toxoplasma (a parasite) infection can involve the pancreas, although it almost always involves other tissues as well.
- Organophosphate insecticide exposure. Organophosphates are not commonly used in flea control any more but they are readily available in hardware and garden stores. They are also in some flea collars.
- Use of drugs; drugs have certainly caused pancreatitis in humans and dogs but have not been proven to have done so in cats. Still, with a cat with a history of pancreatitis, it is prudent to avoid drugs that have been associated with pancreatic inflammation. Such drugs include [azathioprine](#) (an immune suppressive agent); thiazide diuretics, ([furosemide](#)); tetracycline (an antibiotic); valproic acid (a seizure control agent); and procainamide (a heart medicine).

Chances are the cause of pancreatitis for a given patient will never be determined.

If your Cat has Pancreatitis, what might you Observe at Home?

In dogs and humans, this condition is associated with a lot of nausea and abdominal pain. According to one recent study in cats, though, only 35% of cats with pancreatitis showed vomiting and only 25% appeared to have abdominal pain. Fever is a possible sign but often the temperature will drop instead. Lethargy and appetite loss are consistent signs. Nearly all cats with pancreatitis lose their appetites, and about half of them will have been affected long enough to show weight loss.

Approximately 40% of cats with hepatic lipidosis have pancreatitis as the underlying cause. Hepatic lipidosis represents a specific type of liver failure that stems from appetite loss/inadequate calorie intake and complicates pancreatitis tremendously.

Making the Diagnosis

The diagnosis of pancreatitis has been made substantially simpler with the development of the SPEC-FPL and PSL tests, which stand for Specific Feline Pancreatic Lipase and Pancreatic Sensitive Lipase respectively. The SPEC-FPL test can be run as an in-house test kit that yields a positive or negative or even a numeric value depending on the equipment used in a matter of minutes. The PrecisionPSL® test can be run by reference labs but does not have an in-house test kit.

These tests are based on the PLI test, which stands for Pancreatic Lipase Immunoreactivity, a test that is available only at certain veterinary university diagnostic laboratories. Lipase is one of the pancreatic digestive enzymes and small traces are normally in the circulation. These levels jump dramatically during pancreatitis and thus the diagnosis can be made non-invasively without the expense of ultrasound. This form of testing is actually more sensitive than ultrasound which means it can pick up pancreatitis in a milder state.

Of course, pancreatitis can be diagnosed on ultrasound because the inflamed pancreas becomes swollen and exhibits texture changes typical of inflammation. Pancreatitis can also be diagnosed by biopsy during surgical exploration as well, though there is controversy as to whether removing a piece of pancreas actually generates additional inflammation. The advantage of surgical exploration, however, is that other organs can be sampled to get a more complete picture of what is happening in the abdomen.

The SPEC-FPL and PrecisionPSL tests have become common additions to basic feline blood work and their elevations are commonly picked up in cats with no symptoms of any kind. The significance of this suggests (but does not necessarily confirm) that the cat has an unhealthy bowel population, which has overgrown, and is either elaborating material that is inflaming the pancreas or has actually invaded the pancreas. If the cat genuinely has no symptoms, treatment is not necessary; however, it may be prudent to consider a hypoallergenic diet or the addition of probiotics (live cultures of beneficial bacteria) to the food to assist in recolonizing the bowel into a healthier microbe community.

How is the Cat Treated?

There are three parts to treatment: removing the cause of the pancreatitis (this is usually not possible since the cause is only rarely known), general support and symptomatic relief through the inflammatory crisis, and monitoring and instituting protection against the disastrous complications listed above. Intravenous fluid therapy is used to support the pancreatic vasculature and combat any dehydration from vomiting or diarrhea. This simple act of perfusing the pancreas enables damaging inflammatory biochemicals to be flushed away and healing to begin.

Medicines are used to control pain and nausea. In the dog, high fat diets are important predisposing factors for pancreatitis but this appears not to be true for cats. Pre-existing inflammatory bowel disease seems to bear more feline relevance so treatment in that direction seems more appropriate (steroids, antacids, low residue diets or hypoallergenic diets). Anecdotally, digestive enzyme supplementations are felt to be helpful in some cases. In the past, food restriction was included in treatment to rest the sensitive pancreas but newer thinking is that the entire GI tract heals faster when food is passing through it.

Vitamin B12

The healthy pancreas manufactures a substance called intrinsic factor that is necessary for the absorption of vitamin B12 (cobalamin) from the diet. The unhealthy pancreas does not make enough intrinsic factor, and deficiency ensues when pancreatitis becomes chronic. This leads to an unthrifty and often anemic cat. Since dietary B12 cannot be absorbed without intrinsic factor, the traditional solution is to provide B12 by injection, usually at home, once or twice a week and periodically thereafter. Vitamin B12 levels can be tested to determine if supplements are needed or, since the injections are relatively inexpensive and have a broad safety margin, sometimes they are simply prescribed without testing. A new oral B12 supplement has become available recently; its manufacturer claims to have solve the intestinal absorption problem.

Prognosis

How the cat does in the long run depends on how severely ill he is and what accompanying conditions he has. If the cat survives the episode of acute pancreatitis, there is a good chance that he or she will live a normal life thereafter. However, chronic cases of pancreatitis may wax and wane for years, requiring a permanent diet change and chronic medication administration.

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