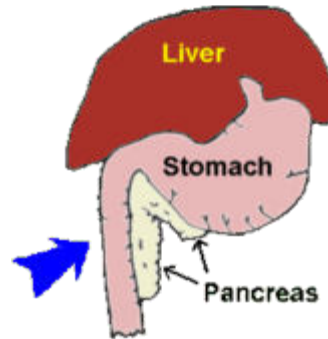
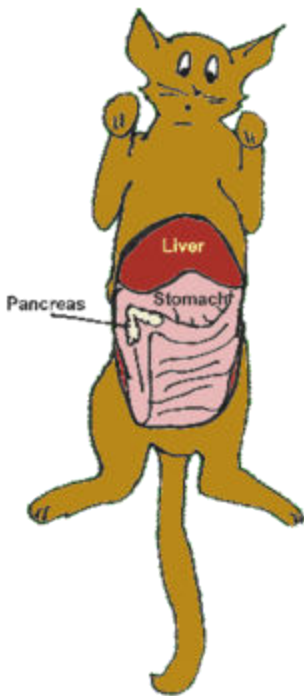


Pancreatitis (Feline)



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. 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.

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, they will digest the body! This is exactly what happens when the pancreas gets inflamed: the enzymes escape 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 orgy 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.

Certain disasters include the disruption of surfactants in the lung tissue, which 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 effect 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.

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

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).

What Causes Pancreatitis in Cats?

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

- 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
- 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.
- 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 for a given case will never be revealed.

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.

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.

Pancreatitis is Hard to Diagnose

What Tests can be Run to Find Out if a Cat Has Pancreatitis?

One of the first steps in evaluating a sick cat is a metabolic database, which is a blood panel and urinalysis. Often this test will not turn up a good indicator of pancreatitis. There are two pancreatic enzymes commonly checked on this panel (amylase and lipase) but unfortunately elevations in these enzymes are not consistent even with obvious or severe pancreatitis. Changes in the liver usually are evident (remember, the pancreas is located near the liver and the liver very readily indicates when it has been damaged by releasing its own enzymes called ALT and AST). Radiographs are often included in this initial testing work up but the pancreas is difficult to visualize and radiographs may not reveal the problem.

If the cat does not respond to support, further evaluation is needed: either ultrasound or other advanced imaging, or surgical exploration. Ultrasound often reveals an enlarged pancreas surrounded by fluid and confirms the diagnosis. Surgical exploration offers the further advantage of allowing tissue sampling of other adjacent organs to rule out additional problems, such as inflammatory bowel disease. The pancreas can be biopsied but many veterinarians are reluctant to do so for fear that removing a piece of tissue could generate further inflammation. Some veterinarians also feel that flushing the belly with warmed sterile fluids helps remove some of the inflammatory toxins.

There are some blood tests of note that are accurate in the diagnosis of pancreatitis. The first is the PLI test. PLI stands for pancreatic lipase immunoreactivity. Lipase is one of the pancreatic digestive enzymes, and small traces of it are normally in the circulation. These levels jump dramatically in pancreatitis, thus the diagnosis can be non-invasively confirmed without the expense of ultrasound or the invasiveness of a biopsy. The problem is that technology needed to run this test is unique and the test can only be run in certain facilities on certain days. Results are not necessarily available rapidly enough to help a very sick cat.

A newer test is the SPEC-FPL, which stands for specific feline pancreatic lipase. This test is similar to the PLI but can produce results within 48 hours. At the present time only one laboratory is able to run this test.

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); monitoring and instituting protection against the disastrous complications listed above; and general support and symptomatic relief through the inflammatory crisis. Fluid therapy is used to support the vasculature and combat any dehydration from vomiting or diarrhea. Medicines are used to control pain and nausea. Food is withheld if vomiting is a problem. In dogs, 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, vitamin B-12 supplementation). Plasma transfusions seem to be helpful as they replace the clotting factors needed to prevent DIC as well as natural blood factors to deactivate pancreatic enzymes. Anecdotally, digestive enzyme supplementations are felt to be helpful in some cases.

Prognosis

How the cat does in the long run depends on how severely ill he or she is. 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.