Exocrine Pancreatic Insufficiency (Maldigestion Disorder) in Cats

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Exocrine pancreatic insufficiency (also called pancreatic insufficiency and maldigestion syndrome) is rare in cats. The pancreas has many glandular functions, some obvious and well known and others that are obscure and not well understood. We classically think of the pancreas as the producer of insulin, and an insufficient production of that hormone leading to diabetes mellitus. For many cat owners, diabetes is easy to understand since they can think of it in terms of the disease seen in our fellow humans. Many people, however, have difficulty understanding diseases that affect the ability of the organ to produce the various enzymes that allow humans, cats, and dogs to digest their food.

Function of the pancreas

Certain cells of the pancreas called 'acinar' cells produce the important digestive enzymes utilized by the cat's body. The function of the enzymes is to break down food in the intestine into smaller molecules. The major digestive enzymes are protein molecules that are produced and stored in the pancreas. They include trypsin, chymotrypsin, amylase, and lipase. The trypsin and chymotrypsin break down protein molecules, the amylase breaks down starches, and lipase does the same to fats and triglycerides.

Breaking down the molecules of food into smaller sizes is an important part of the overall digestive process and allows nutrients to be absorbed by the cells that line the intestine. The nutrients are then passed from those cells into the bloodstream. There they can be transported throughout the body for use by the various tissues. When a cat eats a meal it stimulates the release of these enzymes. They flow from the pancreas into the anterior small intestine through a small tube called the pancreatic duct. Only after they reach the lumen or center of the intestine does their functional existence begin.

What is pancreatic insufficiency?

The disease characterized by a decrease or absence of these enzymes in the cat is referred to as 'exocrine pancreatic insufficiency' or 'maldigestion syndrome.' When cats have this disorder, the proteins, starches, and fats found in their diet cannot be broken down into small enough pieces that allow them to be absorbed through the intestinal wall. The value and substance of the food therefore, stays in the gastrointestinal tract and is passed out in the feces undigested. The affected cat, without treatment, literally starves to death even though it may be constantly eating. In humans, 90% of the pancreas must be destroyed before we see symptoms of insufficiency.

What causes pancreatic insufficiency?

There are several potential causes of pancreatic insufficiency. The most common cause of pancreatic insufficiency in cats is chronic inflammation of the pancreas. The insufficiency may also be due to infestations with flukes, or cancer.

Signs of pancreatic insufficiency

Regardless of its cause, the signs associated with exocrine pancreatic insufficiency are usually obvious and fit a distinct pattern. The cat loses weight, seems constantly hungry, and has high volumes of loose or semiformed stools. The stool may have a foul odor. The high amount of fat in the stool may make the anal area and coat appear greasy. The hair coat may have poor quality and look unkept. In some cases, the stool may even be watery, without any form at all. Depending on the diet, there may be large quantities of undigested fat present in the stool. The animal, in his appearance and behavior, typifies one that is starving to death, and in reality, he is.

In some cats with pancreatic insufficiency, diabetes mellitus is also present.

Diagnosis of pancreatic insufficiency

In most cases, a presumptive diagnosis can be made from clinical signs alone and it is then proven by a laboratory test. Not all of the tests used in people and dogs are accurate in cats. The test most commonly used measures digestive enzymes in the blood, and is called ' serum trypsin-like immunoreactivity.'

Symptoms of pancreatic insufficiency in cats are similar to those seen in inflammatory bowel disease and hyperthyroidism, so testing should be performed to rule out these possible causes of the symptoms.

Treatment of pancreatic insufficiency

> In his appearance and behavior, a cat with pancreatic insufficiency looks like one who is starving to death - and in reality, he is

Fortunately, treatment can easily be accomplished. Unfortunately, it is an expensive and lifelong proposition. Treatment involves replacing the cat's pancreatic enzymes with enzymes from other sources. Our only source of medications for these cases is products made through an expensive process, using freeze-dried and ground-up extracts of hog and cattle pancreases. These glands are harvested in meat packing plants and then processed solely for this purpose. They are formulated either into tablets or powder and go under such trade names as Viokase or Pancrezyme. They contain large quantities of the same naturally occurring digestive enzymes that are deficient in the affected pet. The tablets are given prior to a meal while the powder is usually mixed with food and allowed to set 30 minutes before feeding. The powder is generally recommended for cats.

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Cats should also be placed on a low-fiber diet, and may need vitamin supplementation, especially with cobalamin. Blood cobalamin levels may need to be monitored.

Since the deficiency is one of enzymes and is cured by the addition of the same enzymes back into the diet, many owners regretfully try other cures. There are many products, nutritional and otherwise, that advertise they contain natural enzymes which aid in digestion. Examples of these are K-ZYME, ProBalance, Prozyme, and so on. These really do contain real and natural enzymes, and in normal cats, can be very useful nutritional supplements. However, they are not the enzymes associated with pancreatic insufficiency. This is a very specific disorder with specific enzymes needed to correct it. The general nutritional supplement will do no harm, but regretfully, they will do no good either.

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