Pancreas: Anatomy & Digestive & Endocrine Functions in the Cat

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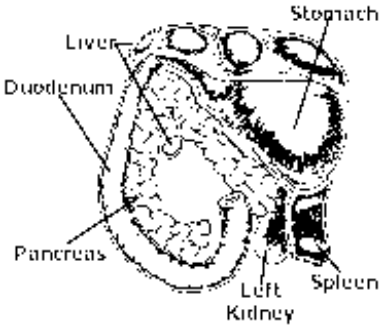
Anatomy



The pancreas is a small structure located near the stomach and attached to the wall of the small intestine. The pancreas has two major functions. It produces hormones to aid in the maintenance of a proper blood sugar (glucose) level. The hormones are secreted into the bloodstream. It also produces important enzymes to aid in the digestion of protein and fats (lipids). These enzymes travel from the pancreas to the small intestine through a small tube called the 'pancreatic duct.'

Hormonal or endocrine function (insulin and glucagon)

The glucose-regulating hormones produced by the pancreas are insulin and glucagon. When starches and carbohydrates are eaten, they are broken down into the sugar glucose. The glucose is absorbed through the wall of the digestive tract and passes into the bloodstream. Insulin allows glucose to leave the bloodstream and enter the body's tissues. Glucose can then be utilized as energy for the cells. When glucose levels are high, glucagon causes it to be stored in the liver and muscles as glycogen. If not enough insulin is produced, diabetes mellitus (sugar diabetes) can occur.

Digestive or exocrine function (trypsin, chymotrypsin, and lipases)

The pancreas produces the protein-digesting enzymes trypsin and chymotrypsin. Fat digestion is aided by enzymes called lipases, also produced by the pancreas. Without these enzymes, cats would not be able to break down important dietary components. When the pancreas does not produce adequate amounts of these enzymes the condition is called pancreatic insufficiency.

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