

## Systematic functions of pancreas.

Jonathan Ling\*

Department of Nephrology, Monash Medical University, Melbourne, Australia

Accepted Date September 2, 2021

### Description

The pancreas has an endocrine function because it releases juice directly into the blood. Digestive enzymes or juices are secreted from the pancreas into the small intestine. There, it continues to break down the food that comes out of the stomach. The pancreas also produces the hormone insulin and secretes it into the blood, where it regulates glucose or sugar levels in the body. Insulin regulator problems can lead to diabetes. Other possible health problems include pancreatitis and pancreatic cancer. The pancreas is an organ that is 6 to 8 inches long. It passes horizontally through the abdomen; the largest part is on the right side of the abdomen. The stomach is connected to the duodenum and is the first part of the small intestine; at this time, partially digested food enters the small intestine from the stomach and mixed with pancreatic secretions. The narrow part of the pancreas extends to the left side of the abdomen near the spleen. The duct runs the length of the pancreas and is connected by several small branches of the glandular tissue. The end of this tube is connected to a similar tube from the liver, which carries bile to the duodenum. About 95% of the pancreas is exocrine tissue. The pancreas is produced to aid digestion. A healthy pancreas produces approximately 2.2 pints (1 litre) of these enzymes per day. The remaining 5% is made up of hundreds of thousands of endocrine cells called islets of Langerhans. These grape-shaped cell populations produce important hormones that can regulate pancreatic secretions and control blood sugar. A healthy pancreas produces substances necessary to digest and break down food. The pancreas produces two substances: enzymes and hormones. The pancreas contains exocrine glands that produce enzymes, such as: (a) Trypsin and chymotrypsin required for protein breakdown, (b) Amylase required for carbohydrate breakdown and (c) Lipase required for lipolysis. Lipase required for lipolysis. The exocrine part of the pancreas produces enzymes. These enzymes are secreted into the small intestine through a system of pipes called a duct. Enzymes help the digestion process. The endocrine function of the pancreas involves the regulation of blood sugar levels. This is done through a small cellular island called Langerhans Island. These endocrine cells release their hormones insulin and glucagon directly into the blood, thereby controlling blood sugar levels. A palm-sized pancreas located in the abdomen, just behind the stomach. Unlike enzymes, hormones are released directly into the blood. Pancreatic hormones include: Insulin: This hormone is produced by the beta cells of the pancreas to help the body use sugar for energy. Lack of insulin can increase blood sugar levels and lead to serious diseases such as diabetes.

Glucagon: Alpha cells produce the hormone glucagon. If the blood sugar level is too low, glucagon will help increase blood

sugar by sending a message to the liver to release stored sugar. Amylin: A hormone called amylin is made in the beta cells of the pancreas. This helps control our appetite (eating behavior).

Pancreas is surrounded by other organs, including the small intestine, liver, and spleen. The pancreas plays a vital role in converting food into energy. It mainly performs two functions: "The exocrine function to aid digestion" and "The endocrine function to control blood sugar levels". Due to the deep position of the pancreas, pancreatic tumors are difficult to locate. The exocrine pancreas produces a natural juice called the pancreas to break down food. These enzymes reach the duodenum through a tube or catheter. The pancreas produces approximately 8 ounces of enzyme-rich digestive juices every day. The different enzymes are as follows: Lipase: These enzymes break down fat together with bile. Poor fat absorption can cause diarrhea and fatty stools. Protease degrades proteins and produces immunity against bacteria and yeasts present in the intestinal tract. Protein malabsorption can lead to allergies.

Amylase helps break down starch into sugar and then convert it into energy to meet the body's needs. Undigested carbohydrates can cause diarrhea. Insulin also allows glucose to enter muscles and other tissues, stores glucose, and synthesizes fatty acids with the liver, and "stimulates amino acid absorption." Protein intake will release insulin, especially after carbohydrate intake, blood sugar levels will raise. If your pancreas cannot make enough insulin, you will develop type 1 diabetes. Unlike insulin, glucagon increases blood sugar levels. According to the Sol Goldman Pancreatic Cancer Research Center at Johns Hopkins University, a combination of insulin and glucagon can maintain adequate blood sugar levels.

The second exocrine function of the pancreas is to produce and release digestive juices. According to the Centre for Digestive Diseases of the Medical University of South Carolina, after food enters the stomach, digestive enzymes called pancreatic juice pass through several small ducts into the main pancreatic duct and then into the bile duct. The bile duct carries juice to the gallbladder, where it mixes with bile to aid digestion.

### \*Correspondence to

Jonathan Ling,  
Department of Nephrology,  
Monash Medical University ,  
Melbourne, Australia  
E-mail: jonling@gmail.com

**Citation:** Ling J. Systematic functions of pancreas. *J Oncol.* 2021;4(1):1.