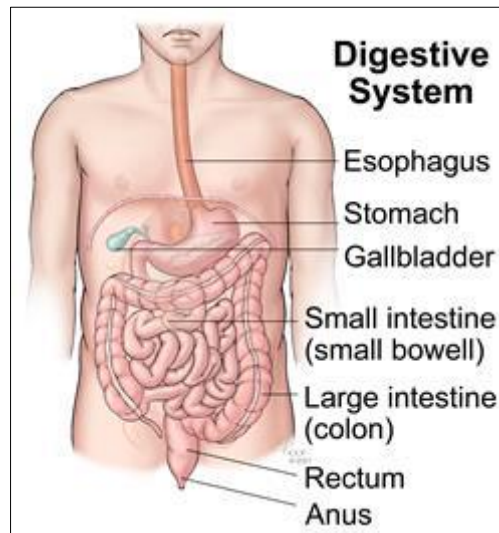


Digestive system

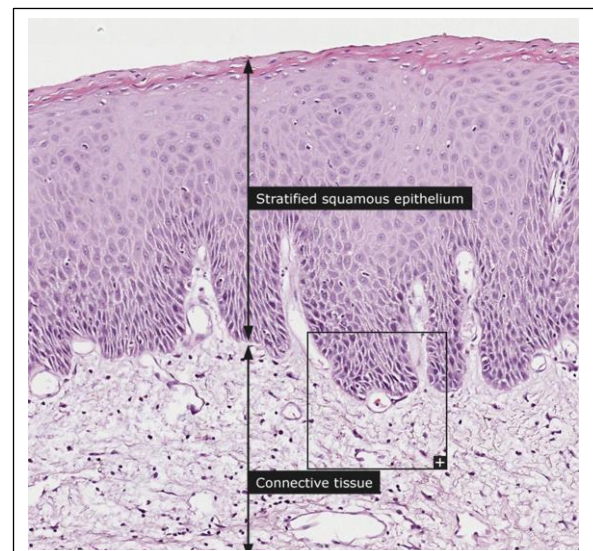
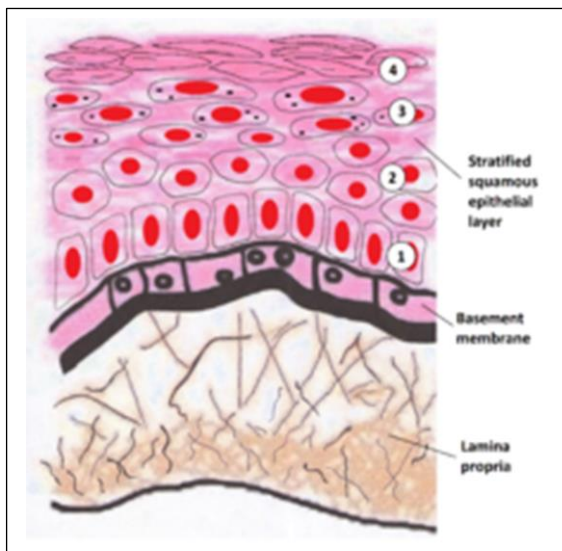
The digestive system is uniquely constructed to perform its specialized function of turning food into the energy you need to survive and packaging the residue for waste disposal. To help you understand how the many parts of the digestive system work together, here is an overview of the structure and function of this complex system.



Mouth

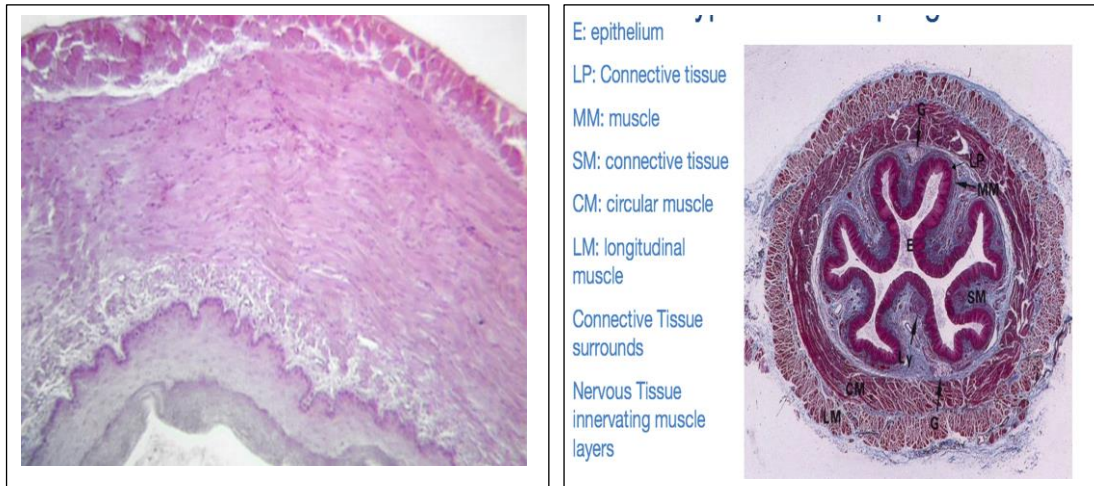
The mouth is the beginning of the digestive tract; and, in fact, digestion starts here when taking the first bite of food. Chewing breaks the food into pieces that are more easily digested, while saliva mixes with food to begin the process of breaking it down into a form the body can absorb and use.

The oral mucosa is the mucous membrane lining the inside of the mouth and consists of stratified squamous epithelium termed oral epithelium and an underlying connective tissue termed lamina propria.



Esophagus

Located in the throat near the trachea (windpipe), the esophagus receives food from the mouth and delivers food to the stomach. The wall of the oesophagus from the lumen outwards consists of mucosa, submucosa (connective tissue), layers of muscle fibers between layers of fibrous tissue, and an outer layer of connective tissue. The mucosa is a stratified squamous epithelium of around three layers of squamous cells.

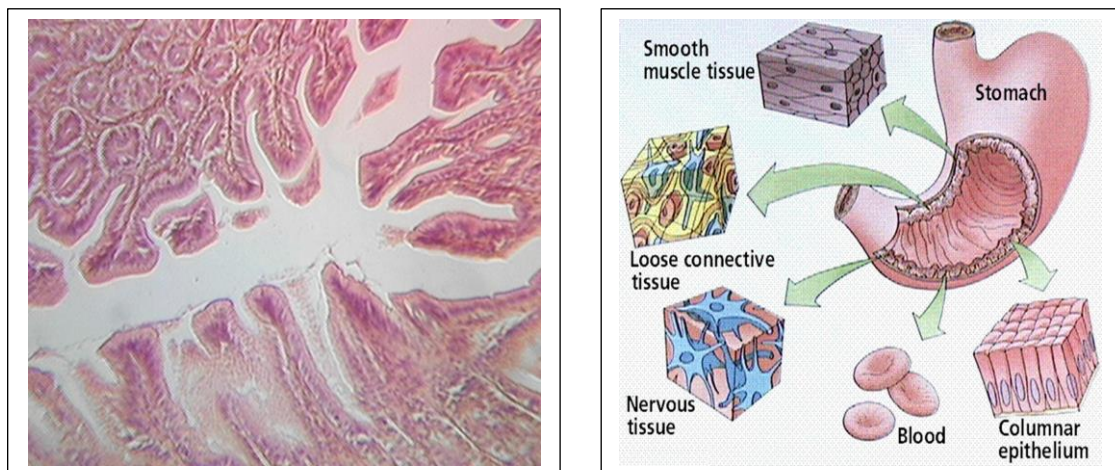


Stomach

The **stomach** is a muscular, hollow organ in the gastrointestinal tract of humans. The stomach has a dilated structure and functions as a vital digestive organ. In the digestive system the stomach is involved in the second phase of digestion, following mastication (chewing).

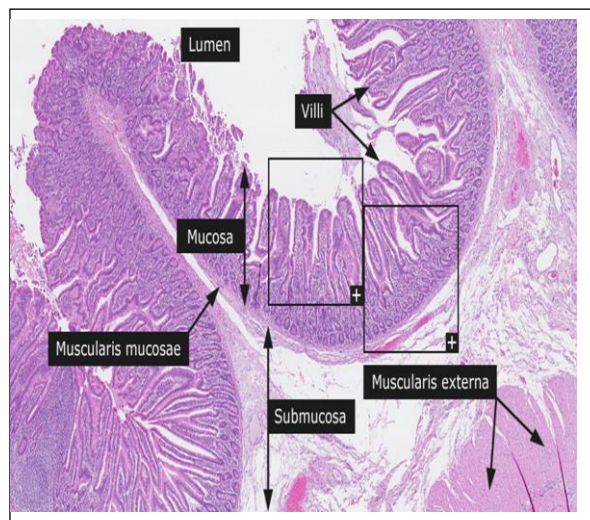
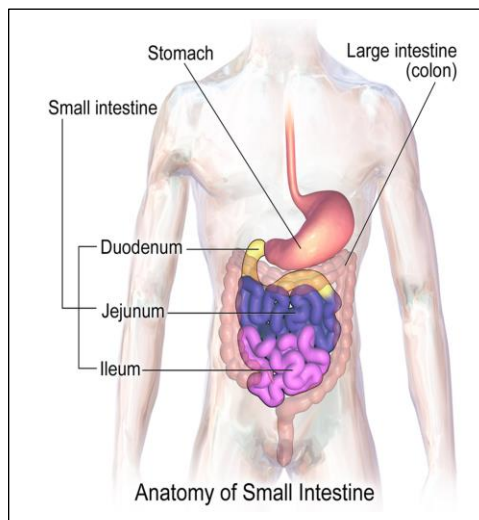
In humans the stomach is located between the oesophagus and the small intestine. It secretes digestive enzymes and gastric acid to aid in food digestion.

In classical anatomy the human stomach is divided into four sections, beginning at the cardia, fundus, the body and pylorus.



Small intestine

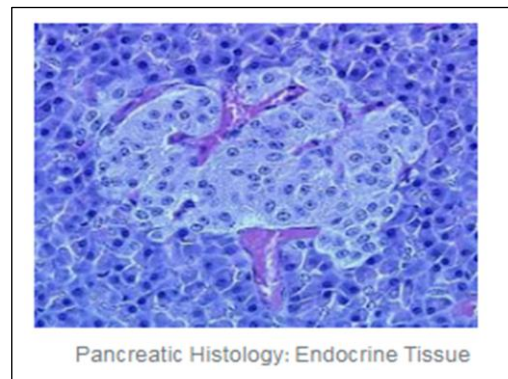
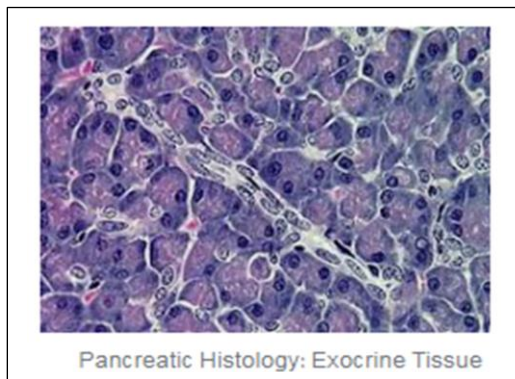
The small intestine or small bowel is the part of the gastrointestinal tract between the stomach and the large intestine, and is where most of the end absorption of food takes place. Made up of three segments - the duodenum, jejunum, and ileum - the small intestine is a 22-foot long muscular tube that breaks down food using enzymes released by the pancreas and bile from the liver. The duodenum is largely responsible for the continuous breaking-down process, with the jejunum and ileum mainly responsible for absorption of nutrients into the bloodstream.



Pancreas

The pancreas is an organ of the digestive system and endocrine system of vertebrates. In humans, it is located in the abdominal cavity behind the stomach. The pancreas is a mixed gland, having both an endocrine and an exocrine function. As an endocrine gland, it secretes into the blood several important hormones, including insulin, glucagon, somatostatin, and pancreatic polypeptide. As an exocrine gland, it secretes pancreatic juice into the duodenum through the pancreatic duct and digestive enzymes.

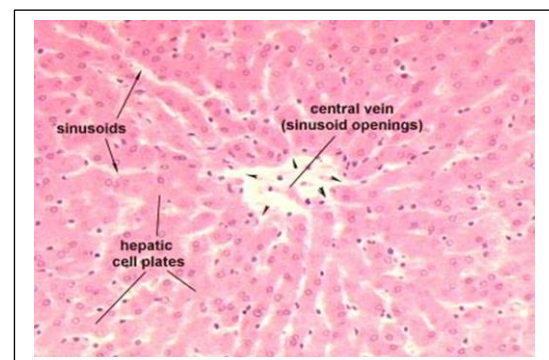
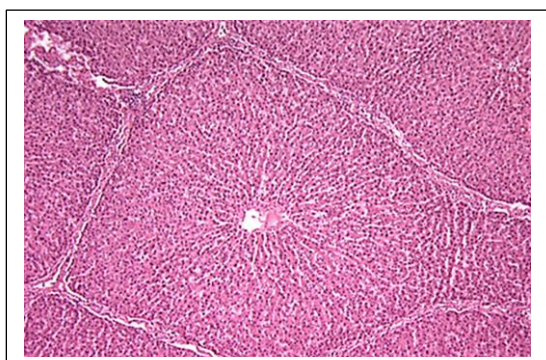
The pancreas is surrounded by a very thin connective tissue capsule that invaginates into the gland to form septae, these septae divide the pancreas into distinctive lobules.



Liver

The liver, an organ only found in vertebrates. In humans, it is located in the right upper quadrant of the abdomen. The liver is grossly divided into two parts when viewed from above – a right and a left lobe, Microscopically, each liver lobe is seen to be made up of hepatic lobules. The lobules are roughly hexagonal, and consist of plates of hepatocytes radiating from a central vein. the study of microscopic anatomy, shows two major types of liver cell: parenchymal cells and nonparenchymal cells.

The liver has multiple functions, but its main function within the digestive system is to process the nutrients absorbed from the small intestine. Bile from the liver secreted into the small intestine also plays an important role in digesting fat. In addition, the liver is the body's chemical "factory." It takes the raw materials absorbed by the intestine and makes all the various chemicals the body needs to function. The liver also detoxifies potentially harmful chemicals. It breaks down and secretes many drugs.



Gallbladder

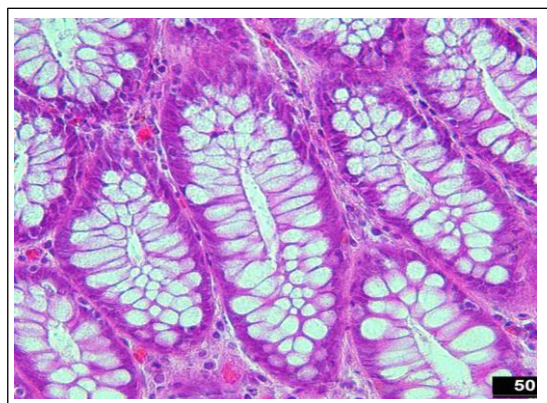
In vertebrates, the gallbladder is a small hollow organ where bile is stored and concentrated before it is released into the small intestine. The gallbladder lined by a

simple columnar epithelium lies beneath the liver. It receives and stores bile, produced by the liver, via the common hepatic duct and releases it via the common bile duct into the duodenum, where the bile helps in the digestion of fats.



Colon (large intestine)

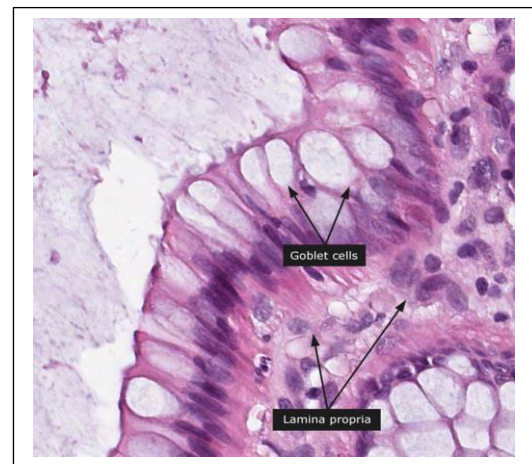
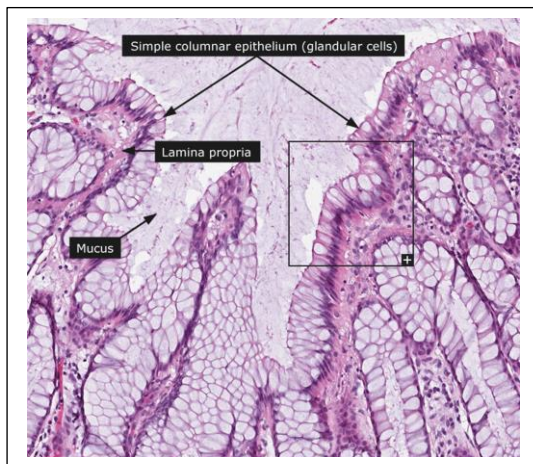
Colon (organ) or large intestine; the final section of the digestive system; is a 6-foot long muscular tube that connects the small intestine to the rectum. The large intestine is made up of the cecum, the ascending (right) colon, the transverse (across) colon, the descending (left) colon, and the sigmoid colon, which connects to the rectum. Typically, the simple epithelial tissue of the colon is made of up several different types of cells, including the characteristic goblet cells and numerous columnar absorptive cells.



Rectum

The rectum (Latin for "straight") is an 8-inch chamber that connects the colon to the anus. Histologically the rectum is similar to the rest of the large intestine with its usual structure: mucosa, submucosa, muscularis and serosa/adventitia.

The mucosa has the typical intestinal epithelium with simple columnar enterocytes and numerous goblet cells. The epithelial layer is followed by the connective tissue layer (lamina propria) with blood and lymph vessels and a muscle layer. The submucosa contains loose connective tissue with blood vessels.



Anus

The anus is the last part of the digestive tract. It is a 2-inch long canal consisting of the pelvic floor muscles and the two anal sphincters (internal and external).