

Glands of the Digestive System

- Salivary glands
- The liver
- Gall Bladder &
- Pancreas

Relationship between some of the accessory Glands of the Digestive Tract

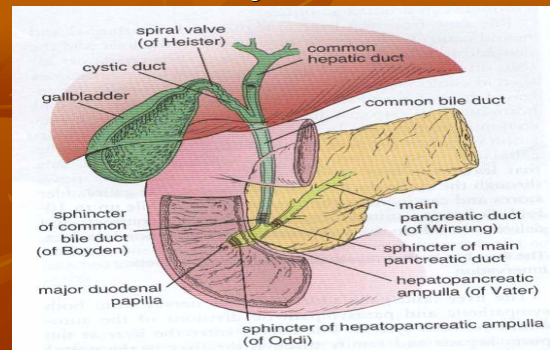


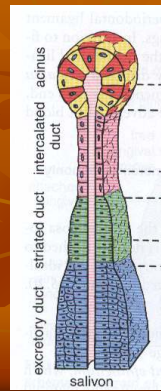
FIGURE 17.15

Major Salivary Glands

- There are three paired salivary glands that empty their secretion, saliva into the mouth.
- These are:
 - Parotid glands which lie in front of the external ear;
 - Submandibular glands in the floor of the mouth, and
 - Sublingual glands, which lie near the central mucosal fold in the floor of the mouth.
- They are compound tubuloacinar glands with excretory ducts that open into the mouth.
- They secrete salivary amylase (ptyalin) and mucus

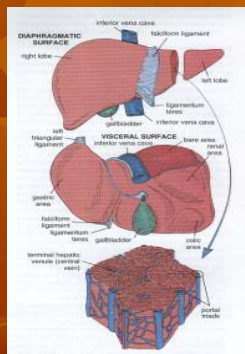
Histologic consideration of a salivary gland

- The smallest of the intralobular duct, the intercalated ducts, are composed of simple low cuboidal epithelium.
- The secretory ducts, next in size, are lined with tall columnar epithelium.
- The striated ducts, are characteristic features of the salivary glands, particularly in parotid and submandibular glands.
- Excretory ducts are lined with simple columnar epithelium but near main outlet of the gland, the walls are composed of stratified squamous epithelium



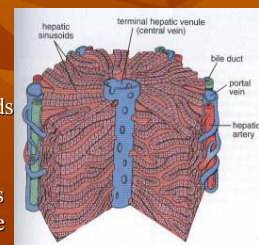
The Liver

- Largest gland in the body
- Occupies upper part of the abdominal cavity just below the diaphragm.
- It is made up of four lobes that are partially connected and hundreds of small lobules which are the structural units of the organ



Hepatic Lobules

- Functional Unit of the liver.
- lobes occupied by a central vein.
- Highly specialized glandular epithelium.
- Two types of vessels: bile canaliculi and hepatic sinusoids lined with Kupffer cells.
- The canaliculi collects bile secreted by cells and sinusoids enable the liver cells to secrete glucose, plasma proteins, and other essential substances directly into the blood stream.



GallBladder

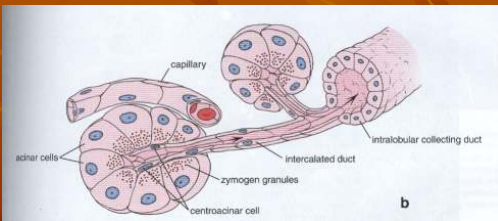
- It is a small pear-shaped organ with a single duct.
- It functions as a reservoir for bile.
- Walls consists of several layers with mucosa composed of simple tall columnar epithelial cells, and the lamina propia of vascular connective tissue with no goblet cells or glands.
- The common bile duct empties into the duodenum, jointly with pancreatic duct.
- At the junction of common duct, pancreatic duct, and the duodenum, a circular ring of smooth muscle forms Oddi's sphincter.

Pancreas

- It is a long, thin gland from the right to left across the abdomen and divided into head, body and tail.
- The broader end lies close to the duodenum and the tail reaches the spleen on the left side.
- It is both exocrine and endocrine organ.
 - Exocrine part produces pancreatic juice , which contain several important digestive enzymes, and is emptied into the duodenum via pancreatic ducts, and
 - Endocrine portion as scattered islets of langerhans which produce the hormone insulin and glucagon directly to the blood stream

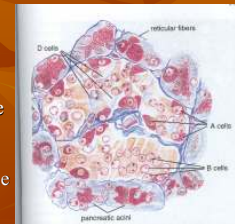
Exocrine pancreas

- Consists of tubular gland separated into lobules by loose connective tissue (septa).
- These are continuous with a sheath of areolar tissue covering the entire organ.
- Cells are arranged in acini (dia)



Endocrine pancreas

- These are scattered islands of cells known as islets of Langerhans (dia)
- Two types exist:
 - Beta cells which are more numerous and secrete the hormone insulin, which controls carbohydrate metabolism in the body. A deficiency of this hormone cause Diabetes mellitus, and
 - Alpha cells which produce the hormone glucagon, which increases the level of glucose in the blood.



Tumors of the liver and Pancreas

- Cancer of the liver
- Cancer of the pancreas