

The Islamic University

College of Medical Technologies

Department of Radiology Technologies

First Stage

Lecture Two : the Digestive system

MSc. Tariq Mohammed Alshybany

MSC. Mohammed .K. S.Alquraishi.

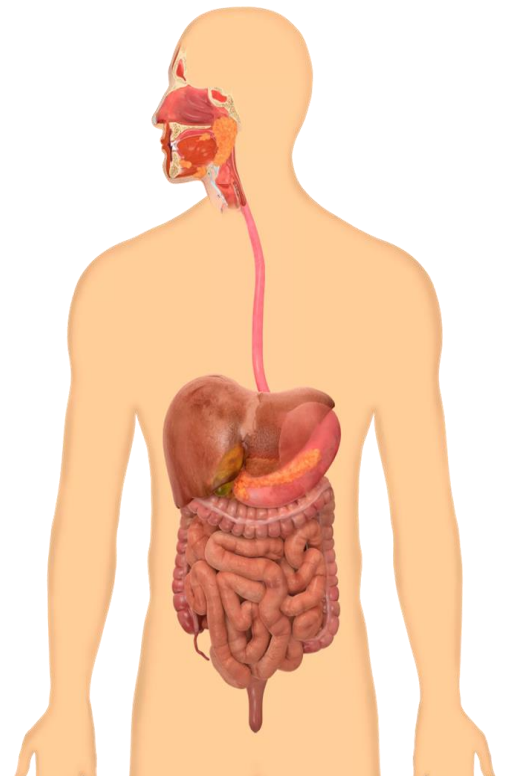
MSc. Ali Alruazik



General anatomy

Lecture 2

Anatomy of the Digestive system



Function of Digestive System

- **Digestion**
 - The mechanical and chemical breakdown of foods for use by the body's cells
- **Absorption**
 - The passage of digested food (nutrients) from the digestive tract into the circulatory system (blood)
- **Metabolism**
 - Production of cellular energy (ATP)
- **Elimination**
 - The expulsion of undigested food or body wastes

Main parts of the alimentary canal

The Alimentary canal consist of:

- Mouth
- Pharynx
- Esophagus
- Stomach
- Small intestine
- Large intestine
- Anus

Mouth (Oral Cavity)

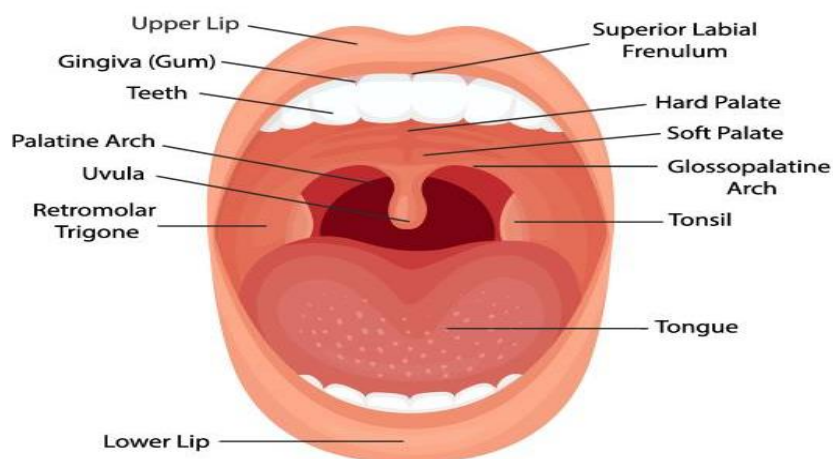
- An opening through which food and air enter the body
- It opens to the outside at the lips and empties into the throat Its boundaries are defined by the lips, cheeks, hard and soft palates, and uvula.
- **Lips** (labia) – protect the anterior opening
- **Cheeks** – form the lateral walls
- **Hard palate** – forms the anterior roof
- **Soft palate** – forms the posterior roof
- **Uvula** – fleshy projection of the soft palate

The mouth is divided into two sections:

- 1- **Vestibule** – space between lips & cheeks externally and teeth and gums internally
- 2- **Oral cavity** – area contained by the teeth

Tonsils

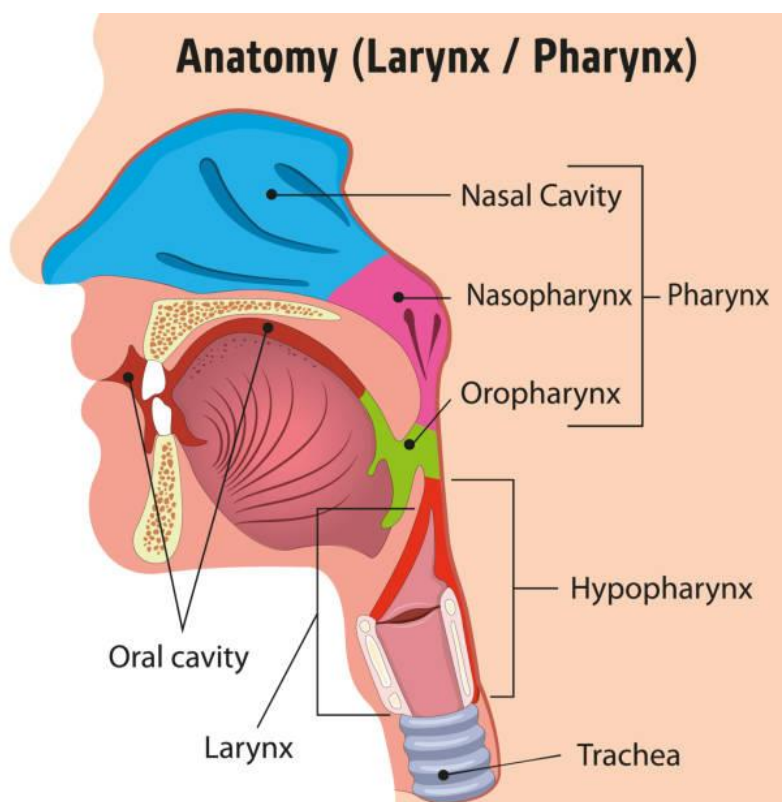
- 1- **Palatine tonsils**: embedded in the lateral walls of the opening between the mouth and the pharynx
- 2- **Lingual tonsil**: occupying the posterior part of the tongue surface



Pharynx Anatomy

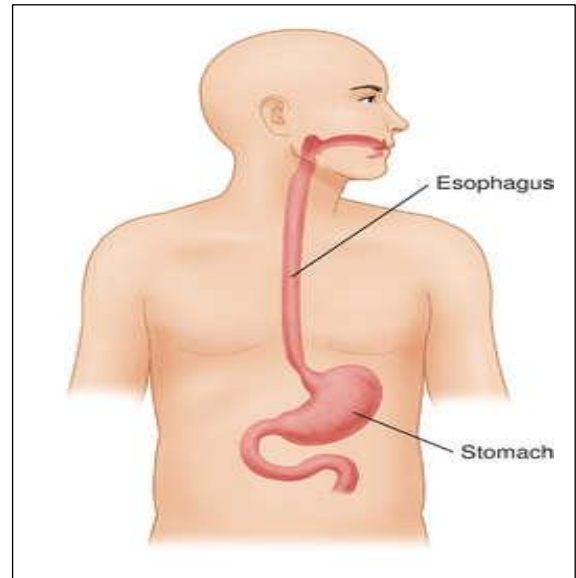
The pharynx include

- **Nasopharynx** – superior region behind nasal cavity but not part of the digestive system
- **Oropharynx** – middle region behind mouth
- **Laryngopharynx** – inferior region, connected to the esophagus
- Serves as a passageway for air and food
- Food is propelled to the esophagus by alternating contractions (peristalsis) of two muscle layers
 - Longitudinal layer
 - Circular layer



Esophagus

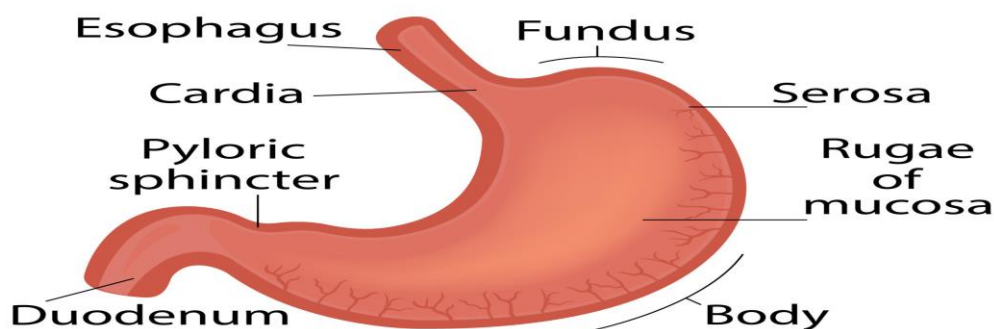
- Approximately 25cm long
- Runs from pharynx to stomach through the diaphragm
- Conducts food by peristalsis (slow rhythmic squeezing)
- Passageway for food only



Stomach Anatomy

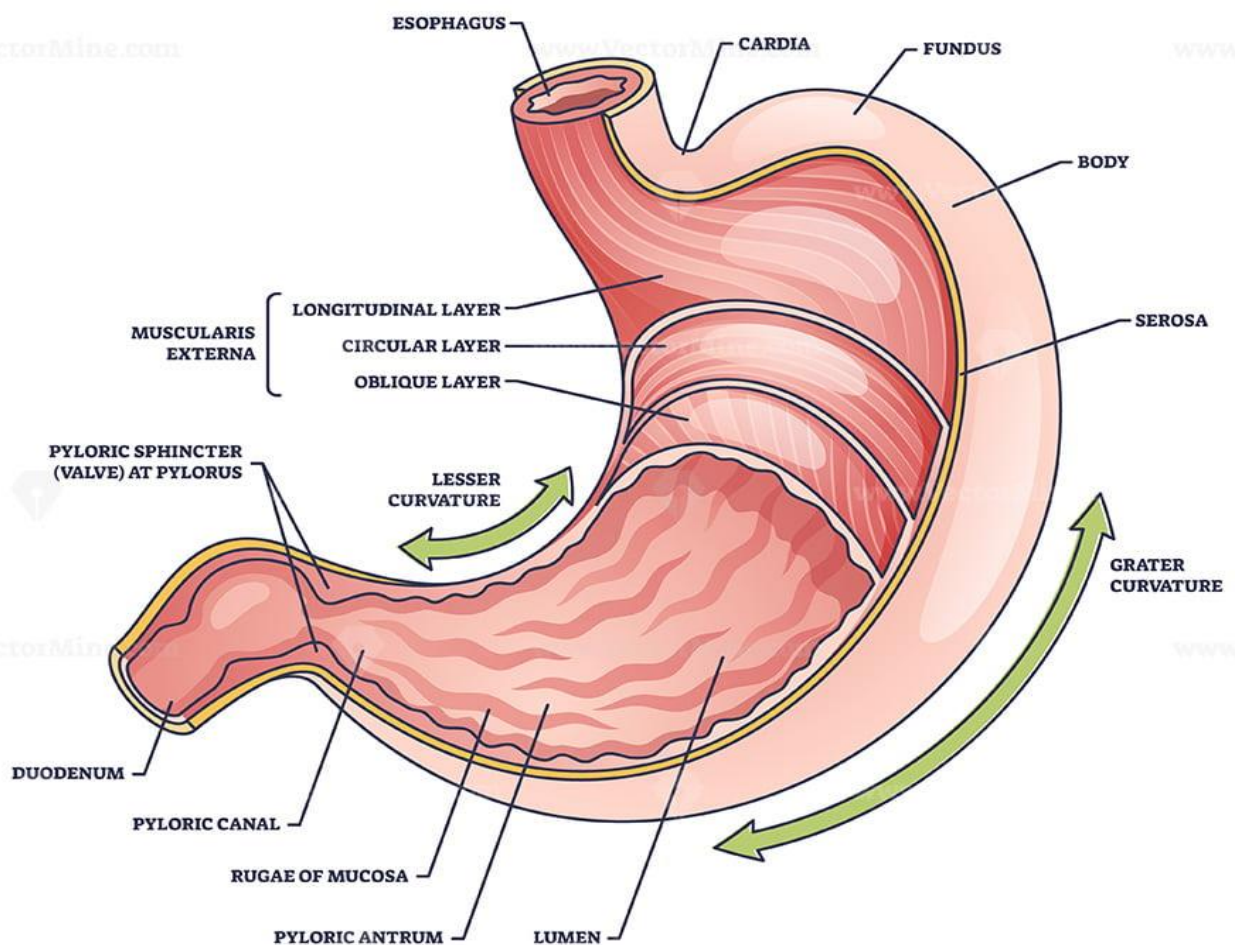
- Usually “J” shaped, located on the left side of the abdominal cavity, anterior to the spleen between the esophagus and small intestine (duodenum)
- Regions of the stomach
 - Cardiac region – near the heart
 - Fundus
 - Body
 - Antrum
 - Pylorus: funnel-shaped terminal end
- Food empties into the small intestine at the pyloric sphincter

STOMACH STRUCTURE



- Rugae – internal folds of the mucosa
- External regions
 - Lesser curvature
 - Greater curvature
- Layers of peritoneum attached to the stomach
 - Lesser omentum – attaches the lesser curvature to the liver
 - Greater omentum – attaches the greater curvature to the posterior body wall

STOMACH

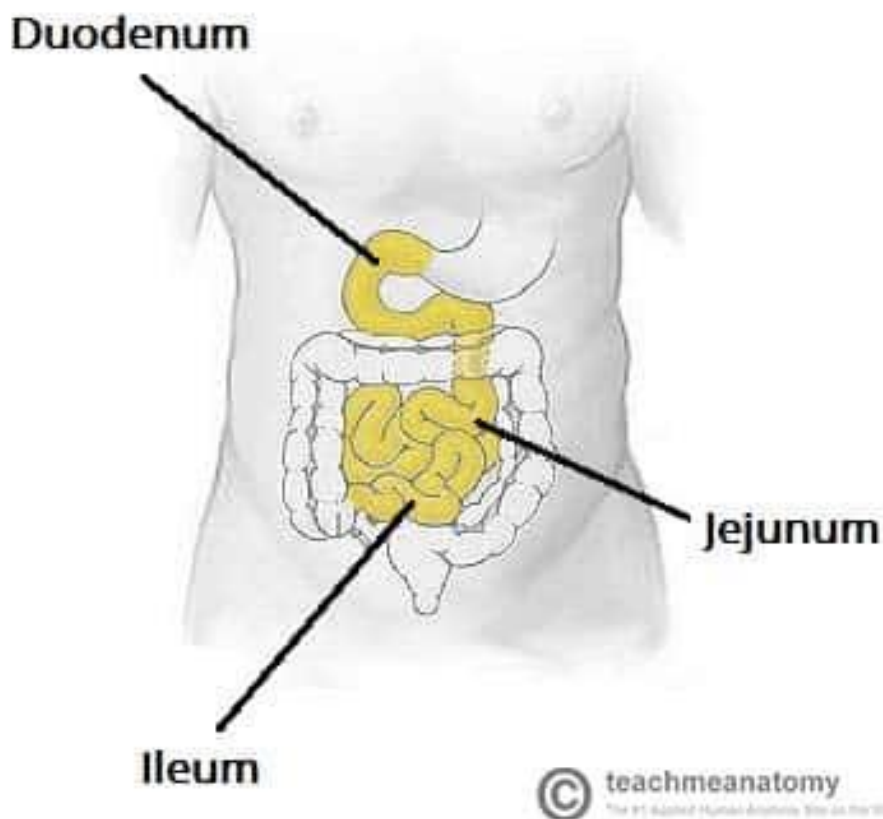


Small Intestine

- The body's major digestive organ roughly 6 meters long
- Muscular tube extending from the pyloric sphincter to the ileocecal valve
- Site of nutrient absorption into the blood

Main parts of the small intestine

- 1- Duodenum
Attached to the stomach
- 2- Jejunum
Attaches anteriorly to the duodenum
- 3- Ileum
Extends from jejunum to large intestine



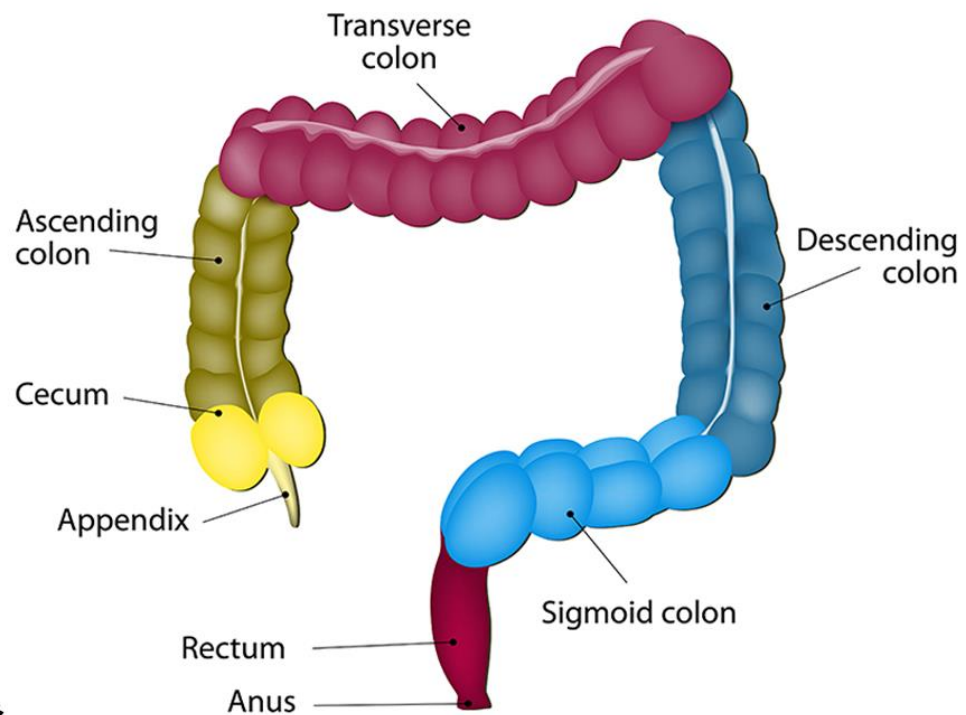
Large Intestine

- (About 1.5 m long)
- Larger in diameter, but shorter than the small intestine
- Frames the internal abdomen

Structures of the Large Intestine

- Cecum – sac like first part of the large intestine
- Vermiform Appendix
- Accumulation of lymphatic tissue that sometimes becomes inflamed (appendicitis)
- Hangs from the cecum
- Colon
- Ascending
- Transverse
- Descending
- S-shaped sigmoidal
- Rectum: About 15cm long & Stores waste before egestion
- Anus (external body opening): Muscular ring that controls egestion

Large Intestine



www.lybrate.com



lybrate

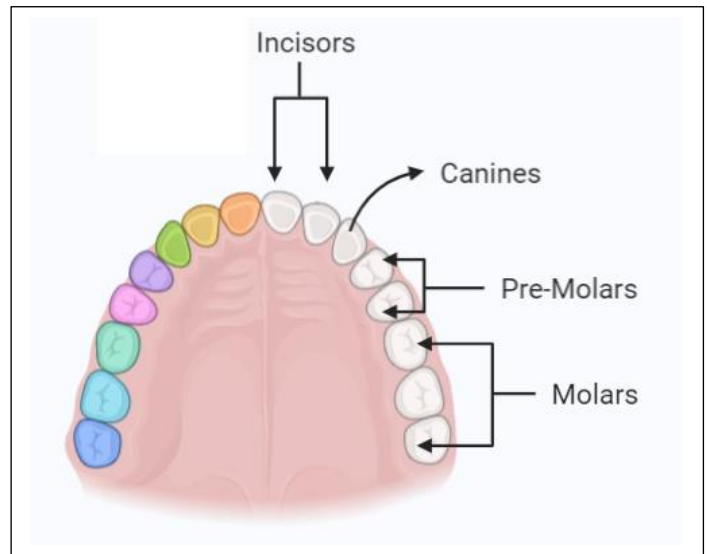
Accessory Digestive Organs

- Teeth
- Salivary glands
- Pancreas
- Liver
- Gall bladder

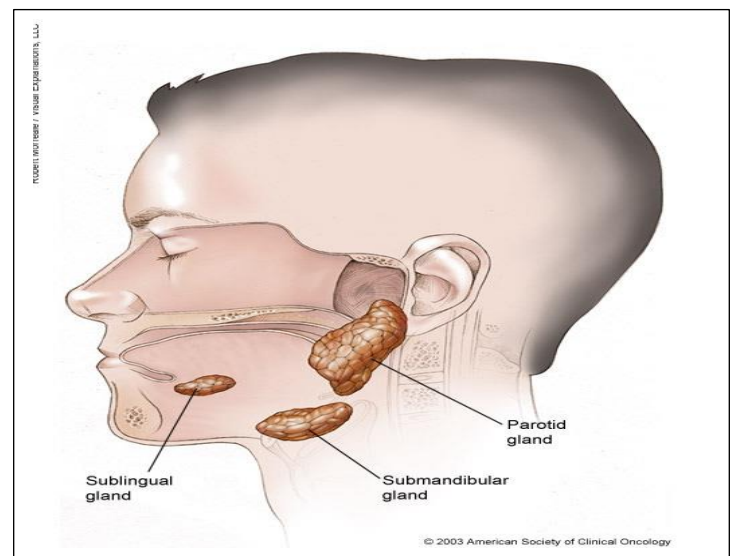
Teeth

- The role is to masticate (chew) food (Mechanical breakdown) which include:

- 1- Incisors used for cutting
- 2- Canines used for stabbing and holding
- 3- Premolars
- 4- Molars large surface area used for grinding

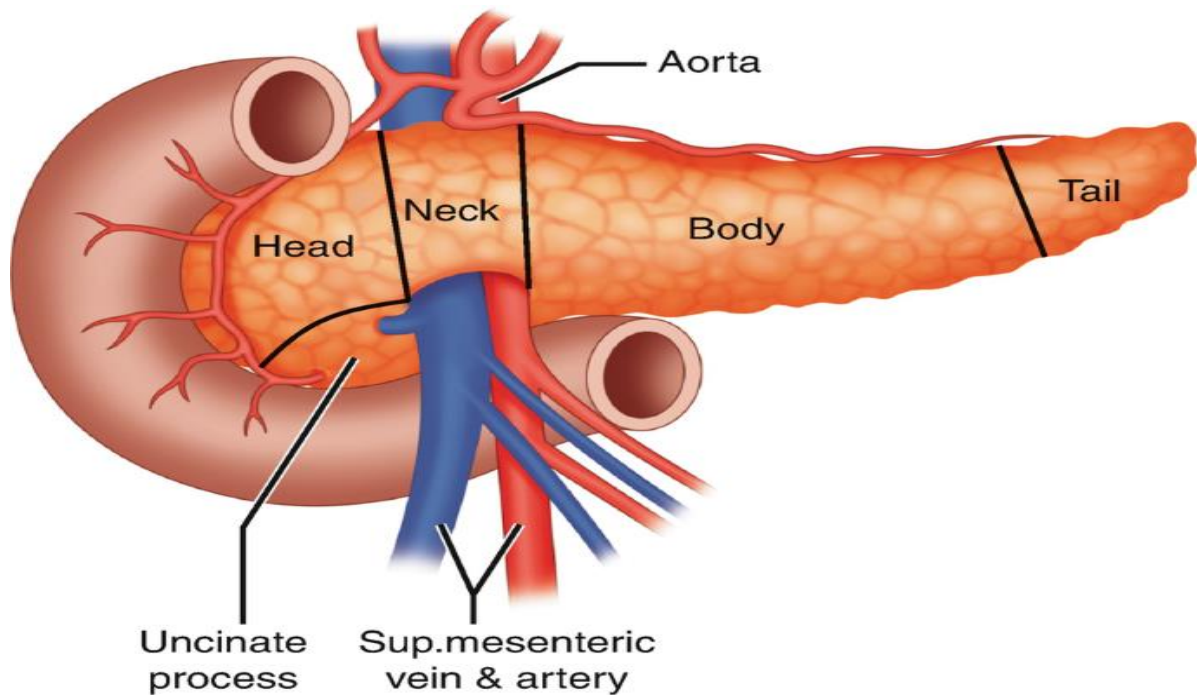


- **Salivary Glands**
- Saliva-producing glands
- Parotid glands – located anterior to ears
- Submandibular glands
- Sublingual glands



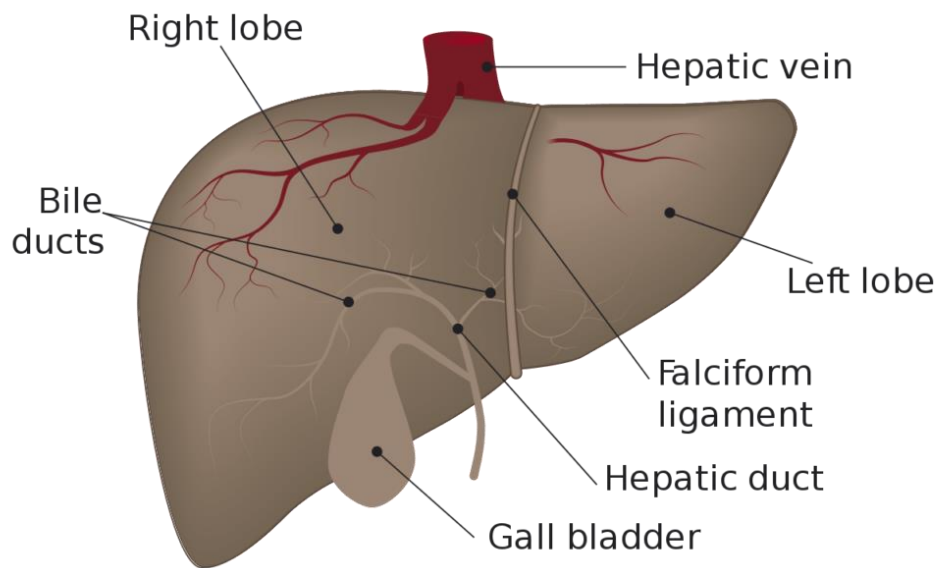
Pancreas

- About 6 inches long, sits across the back of the abdomen, behind the stomach.
- The head of the pancreas is on the right side of the abdomen and is connected to the duodenum through a small tube called the pancreatic duct.
- Produces a wide spectrum of digestive enzymes that break down all categories of food
- Enzymes are secreted into the duodenum



Liver

- Largest gland in the body reddish-brown in color
- Located on the right side of the body under the diaphragm
- Consists of four lobes suspended from the diaphragm and abdominal wall by the falciform ligament
 - Left
 - Quadrate
 - Caudate
 - Right
- Connected to the gall bladder through the common hepatic duct



Gall Bladder

- Sac found in hollow fossa of liver
- Stores bile from the liver by way of the cystic duct
- Bile is introduced into the duodenum in the presence of fatty food

