The Alimentary tract

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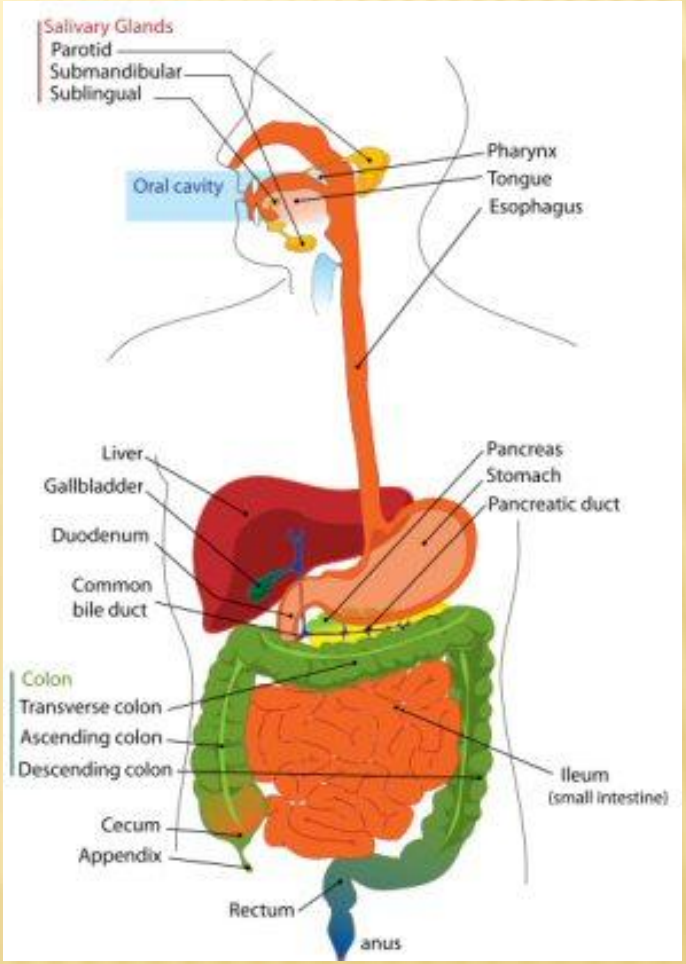
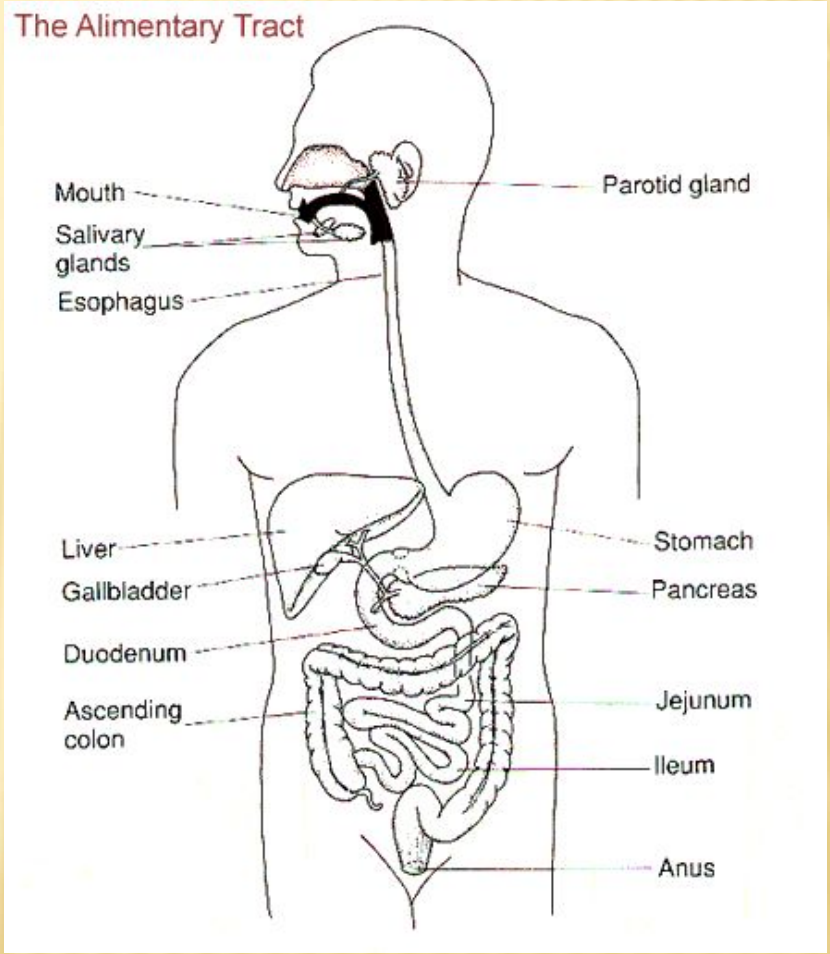
THE ALIMENTARY TRACT

- A long muscular tube with many sections and areas.
- Begins with the oral cavity and ends with the anus.



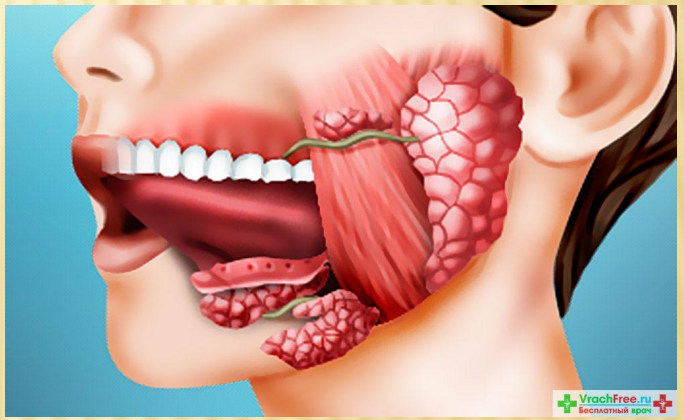
THE ALIMENTARY TRACT

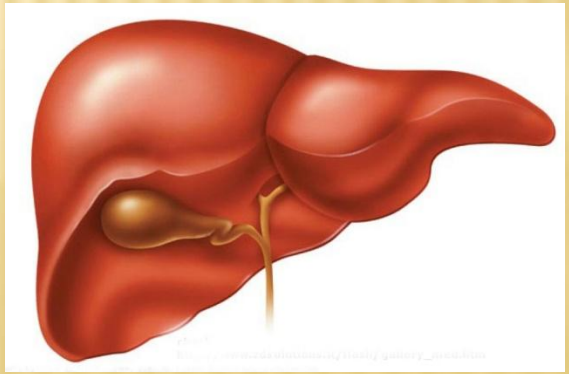
- Oral cavity(Cavum oris)
- Pharynx
- Esophagus
- Stomach
- Small Intestine (intestinum tenue)
- Large Intestine (colon)
- Anus



ACCESSORY PARTS

- Organs that are not in the Alimentary tract but helps in the digestion
  - Teeth
  - Tongue
  - Salivary glands
  - Liver
  - Gall bladder
  - Pancreas





ORAL CAVITY *(CAVUM ORIS)*

- Functions:
  - Food enters in the mouth or oral cavity
  - Tasting
  - Mechanical breakdown of food
  - Secretion of salivary glands (salivary amylase)

MOUTH

- Structures in the mouth that aids digestion:
  - Teeth – cut, tear, crush and grind food.
  - Salivary glands – produce and secrete saliva into the oral cavity.
    - *Parotid (beneath the cheeks)*
    - *Submaxillary (below the jaw bone)*
    - *Sublingual (below the tongue)*

MECHANISM OF SWALLOWING

- Swallowing is a coordinated activity of the tongue, soft palate, pharynx and esophagus.
- Phases
  - Food is pushed into the **pharynx** by the tongue. (voluntary)
  - Tongue blocks the mouth
  - Soft palate closes off the nose
  - Larynx (Adam's Apple) rises so the **Epiglottis** (a flap of tissue) can close the opening of the trachea.

ESOPHAGUS

- A straight muscular tube that is about 25 cm long which connects the mouth with the stomach
- Food takes about 4 to 8 seconds as it passes through to the stomach.
- Its walls contain smooth muscles that contracts in wavy motion (**Peristalsis**).
- **Peristalsis propels food and liquid slowly down the esophagus into the stomach.**
- Cardiac Sphincter (ring-like valve) relaxes to allow food into the stomach.

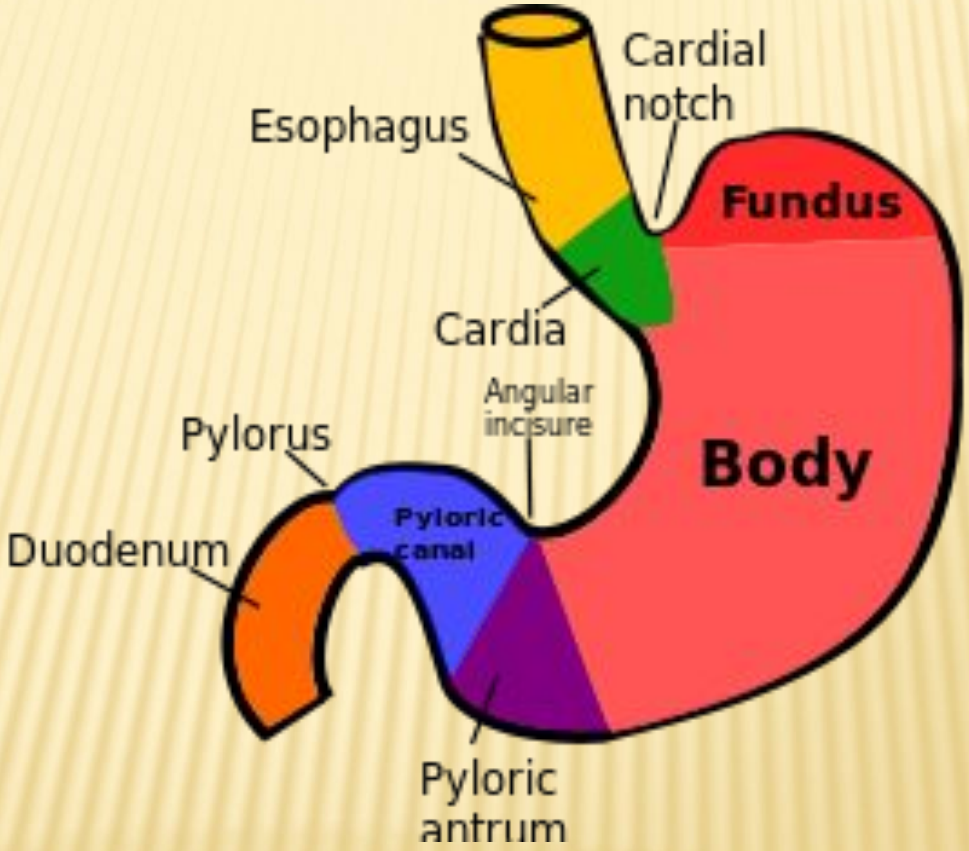
STOMACH

- J-shaped muscular sac
- Has inner folds (**rugae**) that increases the surface area of the stomach.
- Churns and grinds together the bolus into smaller pieces.
- Food is mixed with gastric juices (hydrochloric acid and enzymes) secreted by the stomach walls.
- HCL helps break down food and kills bacteria that came along with the food.

SECTIONS OF STOMACH

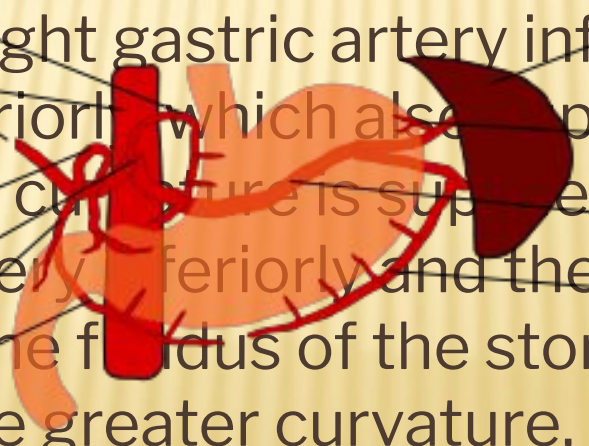
- The stomach lies between the esophagusThe stomach lies between the esophagus and the duodenumThe stomach lies between the esophagus and the duodenum (the first part of the small intestineThe stomach lies between the esophagus and the duodenum (the first part of the small intestine). It is in the left upper partThe stomach lies between the esophagus and the duodenum (the first part of the small intestine). It is in the left upper part of the abdominal cavityThe stomach lies between the esophagus and the duodenum (the first part of the small intestine). It is in the left upper part of the abdominal cavity.

SECTIONS OF STOMACH

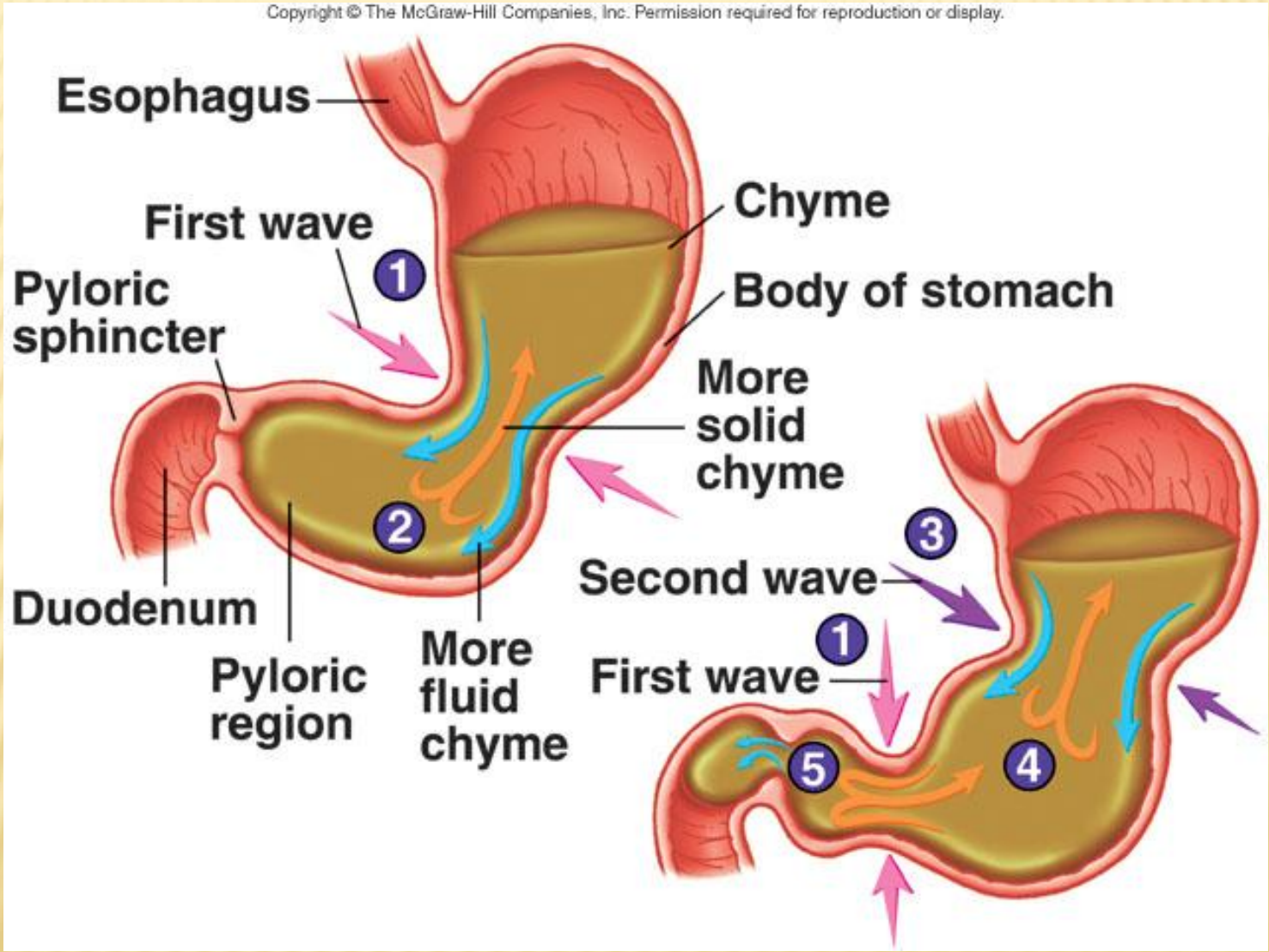


BLOOD SUPPLY

- The lesser curvature of the stomach is supplied by the right gastric arteryThe lesser curvature of the stomach is supplied by the right gastric artery inferiorly, and the left gastric arteryThe lesser curvature of the stomach is supplied by the right gastric artery inferiorly, and the left gastric artery superiorly, which also supplies the cardiac region. The greater curvature is supplied by the right gastro-omental arteryThe lesser curvature of the stomach is supplied by the right gastric artery inferiorly, and the left gastric artery superiorly, which also supplies the cardiac region. The greater curvature is supplied by the right gastro-omental artery inferiorly and the left gastro-omental artery superiorly. The fundus of the stomach, and also the upper portion of the greater curvature, is supplied by the short gastric artery which arises from the splenic artery.



MOVEMENTS IN STOMACH



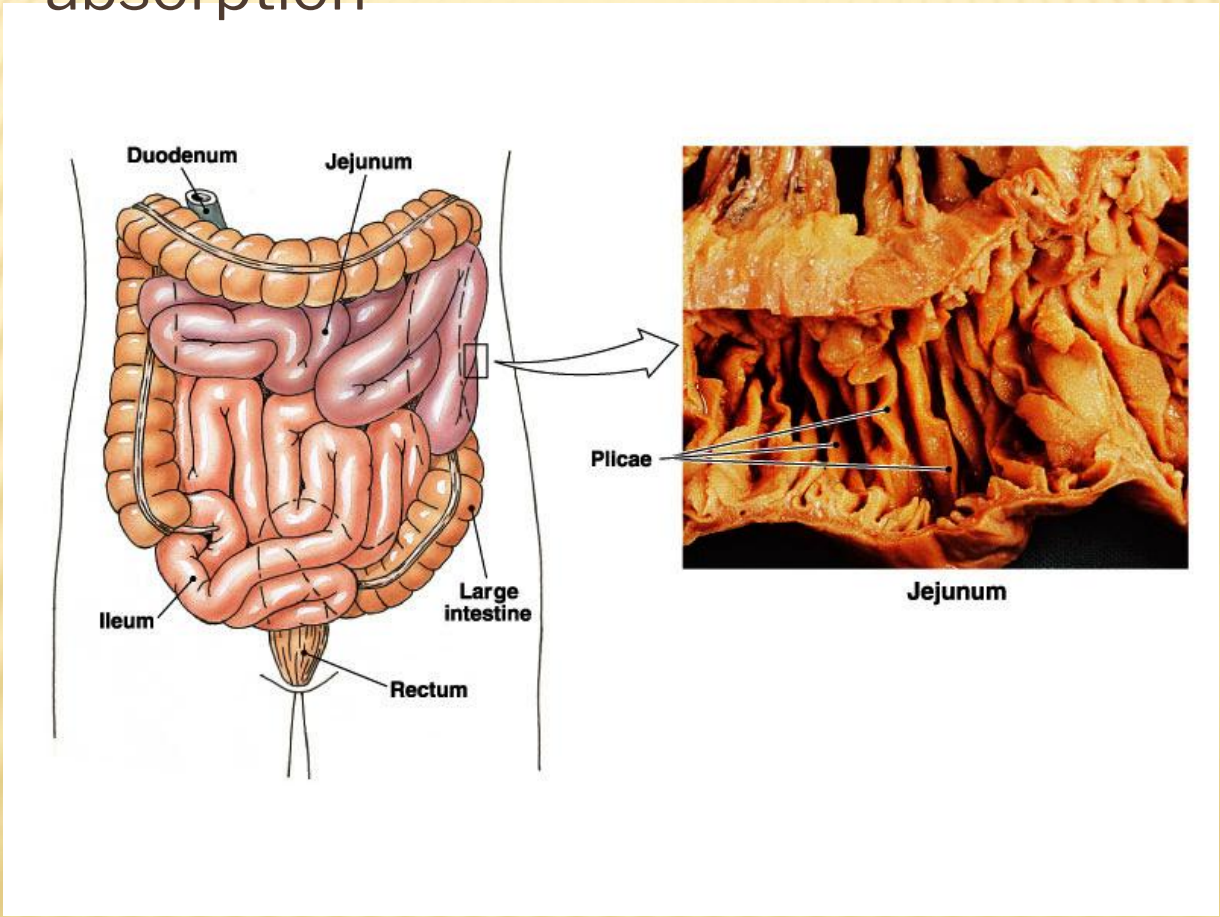
SMALL INTESTINE

- Long (5-6m), coiled tube beneath the stomach.
- Has three parts:
  - Duodenum – upper part; 20-30Cc ; connected to the stomach.

    – where the digestive juices from the pancreas and the liver combine with chyme making it thin and watery.
  - Jejunum – about 100-110cm
  - Ileum – about 150-160cm

SMALL INTESTINE

- Site of greatest amount of digestion and absorption



DUODENUM

- The **duodenum** is a short structure (about 20–25 cm long) continuous with the stomach and shaped like a "C".[7] It surrounds the head of the pancreas. It receives gastric chyme It surrounds the head of the pancreas. It receives gastric chyme from the stomach, together with digestive juices from the pancreas It surrounds the head of the pancreas. It receives gastric chyme from the stomach, together with digestive juices from the pancreas (digestive enzymes It surrounds the head of the pancreas. It receives gastric chyme from the stomach, together with digestive juices from the pancreas (digestive enzymes) and the gall bladder It surrounds the head of the pancreas. It receives gastric chyme from the stomach, together with digestive juices from the pancreas (digestive enzymes) and the gall bladder (bile It surrounds

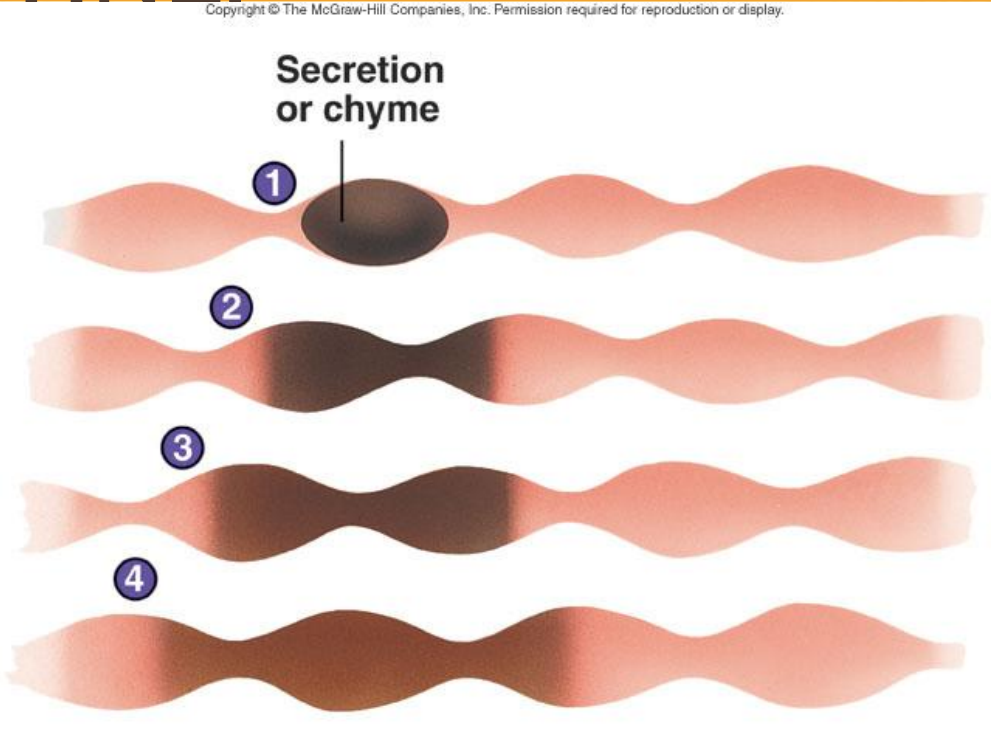
JEJENUM

- The **jejunum** is the midsection of the small intestine, connecting the duodenum to the ileum. It is about 2.5 m long, and contains the plicae circulares is the midsection of the small intestine, connecting the duodenum to the ileum. It is about 2.5 m long, and contains the plicae circulares, and villi is the midsection of the small intestine, connecting the duodenum to the ileum. It is about 2.5 m long, and contains the plicae circulares, and villi that increase its surface

ILEUM

- The **ileum**: The final section of the small intestine. It is about 3 m long, and contains villi: The final section of the small intestine. It is about 3 m long, and contains villi similar to the jejunum. It absorbs mainly vitamin B12: The final section of the small intestine. It is about 3 m long, and contains villi similar to the jejunum. It absorbs mainly vitamin B12 and bile acids: The final section of the small intestine. It is about 3 m long, and contains villi similar to the jejunum. It

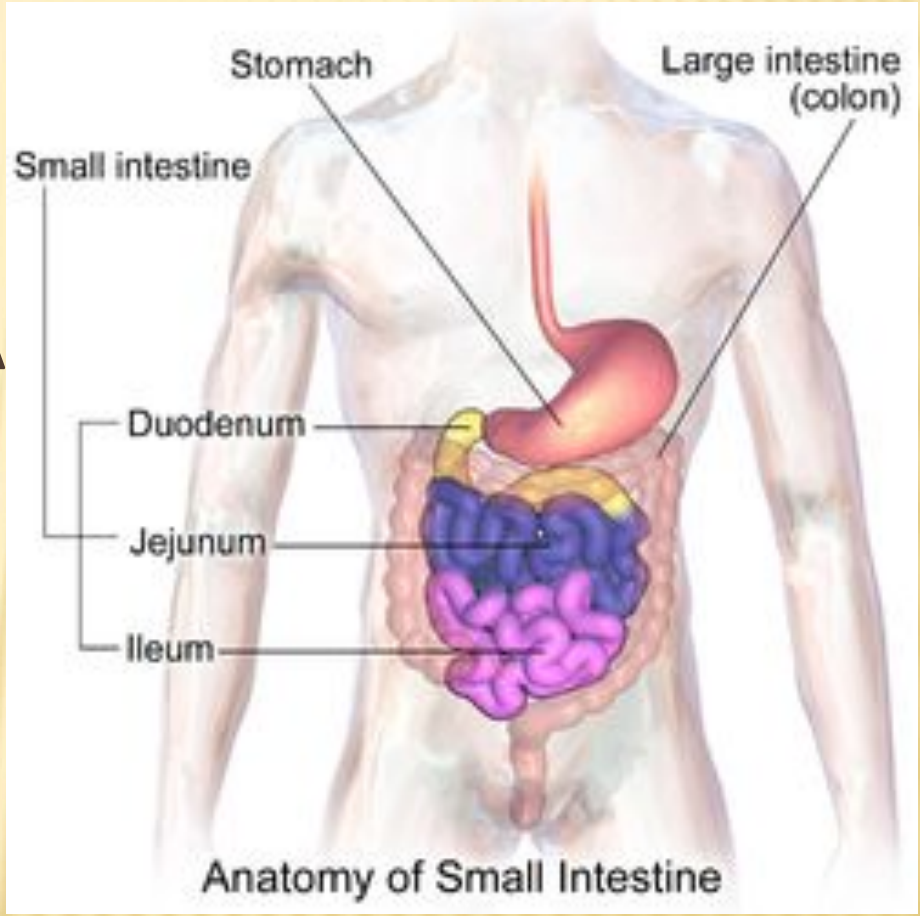
MOVEMENT IN SMALL INTESTINE:



- Mixing: Segmental contraction that occurs in small intestine
- Secretion: Lubricate, liquefy, digest
- Digestion: Mechanical and chemical
- Absorption: Movement from tract into circulation or lymph

FUNCTIONS OF SMALL INTESTINE

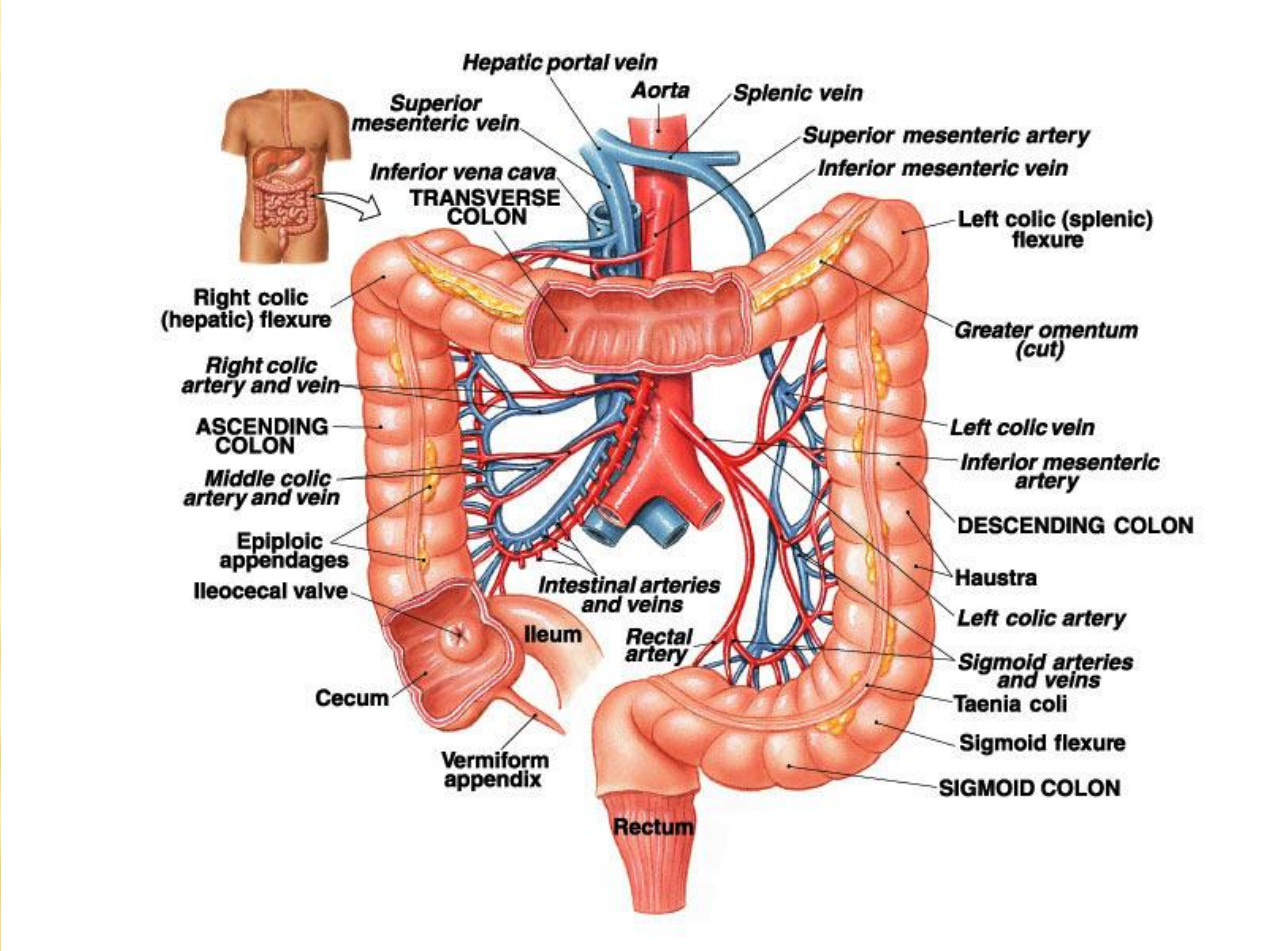
- **DIGESTION**
- **ABSORBTION**
- **IMMUNOLOGICA**



LARGE INTESTINE

- a.k.a. Colon
- larger diameter, but shorter (1-1,5м)
- Water is absorbed from the undigested food making the waste harder until it becomes solid.
- Waste stays for 10 – 12 hours.

LARGE INTESTINE



LARGE INTESTINE

- Waste is pushed into the expanded portion (rectum) of the large intestine.
- Solid waste stays in the rectum until it is excreted through the anus as feces.
- Appendix hangs on the right side of the large intestine.

ACCESSORY ORGANS

- Produce or store enzymes that helps in digestion.
- Liver
  - Largest gland of the body
  - Stores vitamins A,D,E,K
  - Stores sugar and glycogen
  - Produces **bile** (watery, greenish substance)
  - Secretes bile to the gall bladder via the hepatic duct and cystic duct.

LIVER

- Gross anatomyGross anatomy traditionally divided the liver into two portions– a right and a left lobe, as viewed from the front (diaphragmatic) surface; but the underside (the visceralGross anatomy traditionally divided the liver lobe, as view surface; but t shows it to be es the caud ided the liver lobe, as view surface; but t shows it