

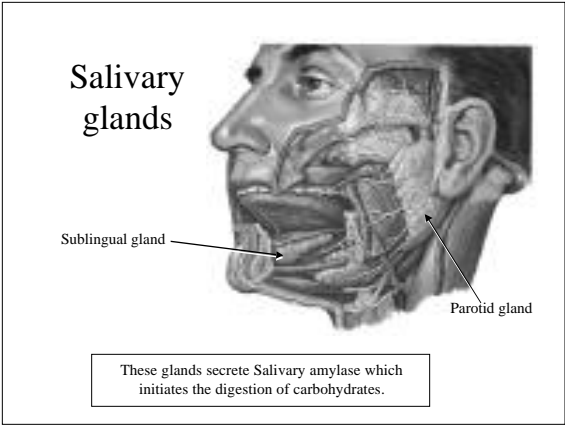
Nutrient Uptake & Digestion

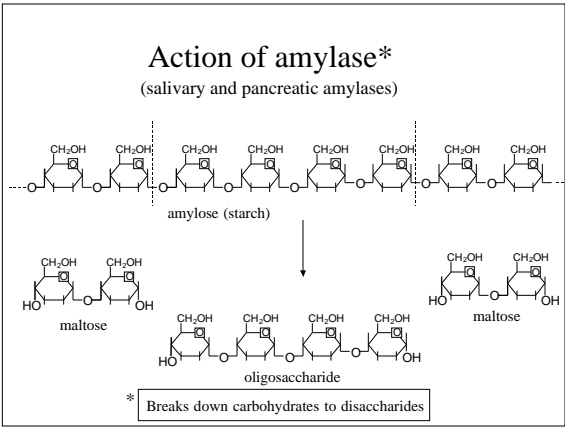
Topics for today:

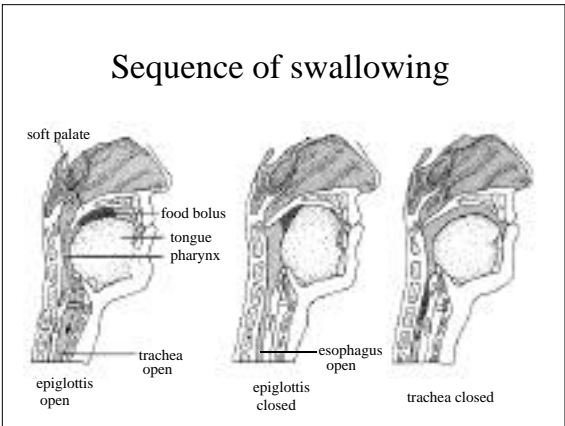
- Overview of energy uptake & digestion
- Amylase digestive action in mouth
- Action of pepsin in stomach
- Role of pancreas in digestion
- Role of duodenum in digestion

Phases of the uptake of energy

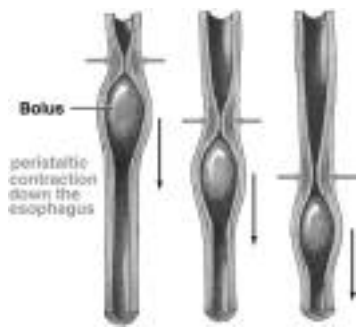
- **Ingestion** - mechanical disaggregation & swallowing of food
- **Digestion** - chemical breakdown of complex to simple nutrients
- **Absorption** - uptake of simple nutrients into blood and lymph





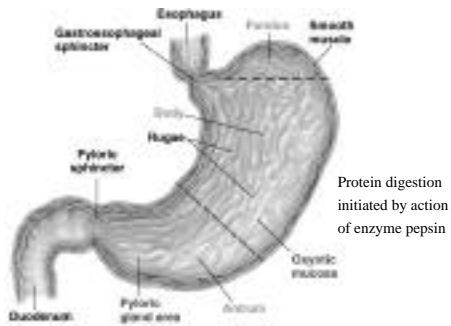


Peristaltic action of esophagus

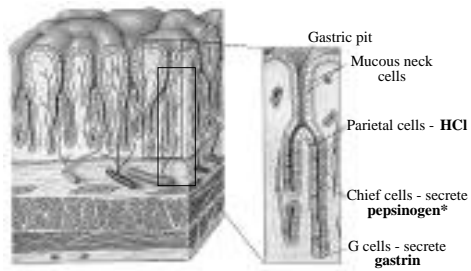


Peristalsis is a traveling wave of contraction of multiunit smooth muscle initiated voluntarily and under involuntary coordination.

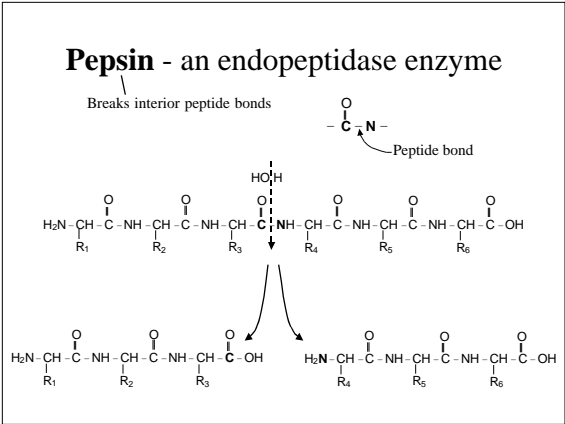
Structure of stomach

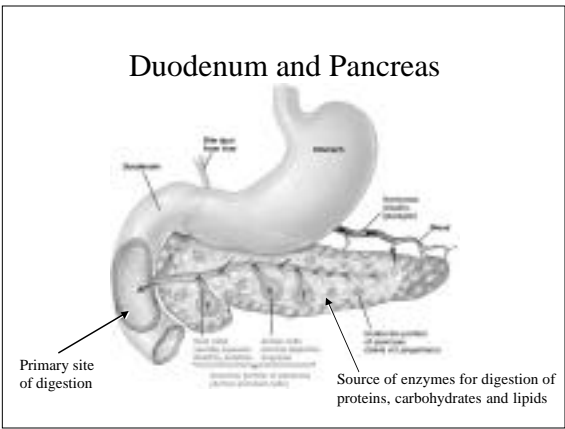


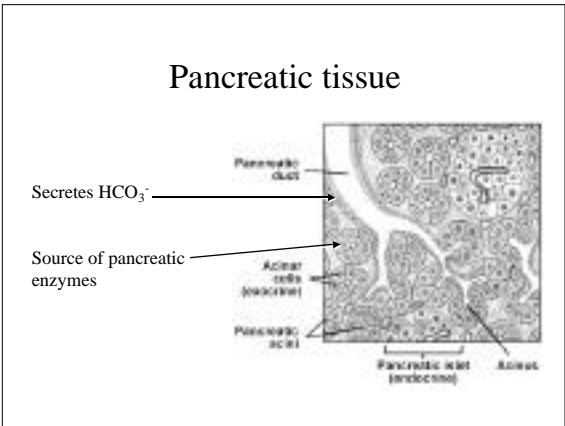
Glands of gastric mucosa



*Precursor of pepsin, a proteolytic enzyme







Pancreatic fluid components

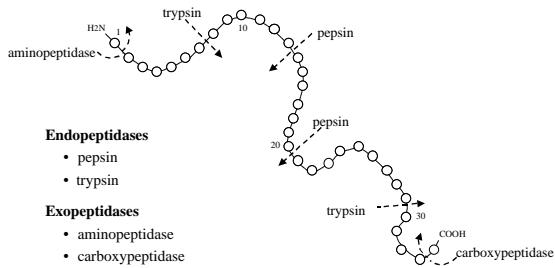
Ductule secretion

- Bicarbonate-rich fluid

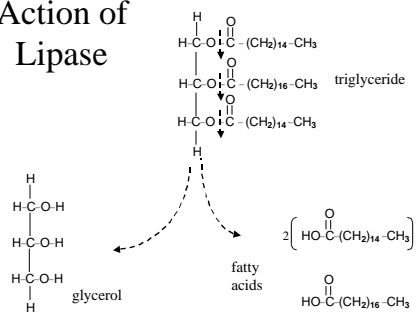
Acinar cell secretion

- Trypsinogen (trypsin precursor)
- Carboxypeptidase
- Amylase
- Lipase

Action of peptidases (proteolytic enzymes)



Action of Lipase

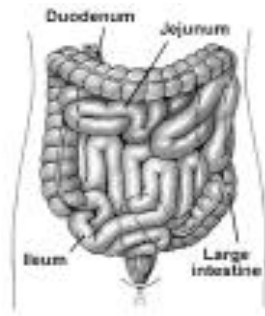


Intestinal tract

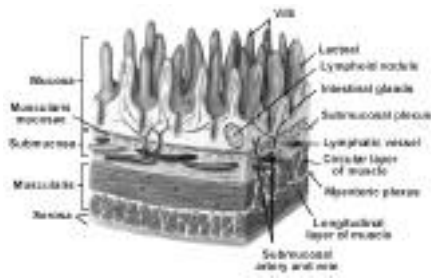
Small intestine

- Duodenum
- Jejunum
- Ileum

Large intestine



Intestinal villi



Secretions into Small Intestine

Duodenal mucosal secretions

- Aminopeptidase
- Maltase
- Sucrase
- Lactase

Liver secretions

- Bile salts (not enzymes)
