

# Digestive System

## Functions

- Ingest
  - food intake
- Digest
  - food break down
- Absorb

## Accessory Organs

- liver
- pancreas
- gall bladder

## sugar metabolism

- insulin from pancreas to liver, tissues & blood to store glucose as glycogen
- glucagon from pancreas to liver, tissues & blood to unstore sugar from glycogen

## chylomicronic activites

- chylomicron carries fat to the liver
- (VLDL & LDL) very low and low density lipoprotein carries fat from liver to tissues for storage
- (HDL) high density lipoprotein carries fat from tissues to liver to be converted to energy

## Path

- Mouth (ingest)
- Oral Cavity (digest)
  - Physical break down
    - Mastication
      - Teeth (32)
        - Incisors
          - cut
        - Canines
          - rip
        - Molars
          - grind
      - Muscles
        - close jaw
          - Masseter
          - Temporalis
        - push food back
          - Buccinator
          - Tongue
    - Chemical break down
      - Saliva
        - ph
        - enzymes
          - amylase
            - carb break down
          - lipase
            - fat break down
      - Biological break down
        - flora
          - Streptococcus Mutans
            - tooth decae
    - Chewed up food called a bolus
  - Esophagus
    - upper esophageal sphincter closes

Bolus moves down by peristalsis

lower (aka cardiac) esophageal sphincter opens to stomach

(Oro- & Laringeo-) Pharynx

Deglutition (Swallowing)

Step 1 - Voluntary - Tongue passes bolus to back of throat

Step 2 - Involuntary - Epiglottis covers glottis - bolus slides down Epiglottis

Step 3 - Involuntary - Esophageal Sphincter opens - bolus enters esophagus

Stomach

Bolus now called chyme

releases Gastrin hormone to itself to release

pepsin

protein breaks down

hydrochloric acid

keeps ph low for pepsin

denatures proteins

parts

cardia

fundus

pylorus

chyme leaves via pyloric sphincter

Small Intestines (absorption)

releases gastric inhibitory peptide to stomach to stop releasing gastrin

releases secretin to pancreas send neutralizing juices to raise ph

cholecystokinin tells gall bladder to send bile to eliminate saturated fat

enzymes

Trypsin

protein

Amylase

carbohydrates

Lipase

lipids

parts

duodenum

jejunum

ileum

chyme leaves through ileocecal sphincter

Large Intestine

Store and compact feces

Absorb water and electrolytes

parts

cecum

appendix

ascending colon

transverse colon

descending colon

sigmoid colon

rectum

internal anal sphincter

external anal sphincter