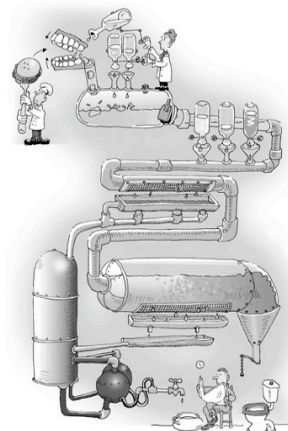


Digestive Systems

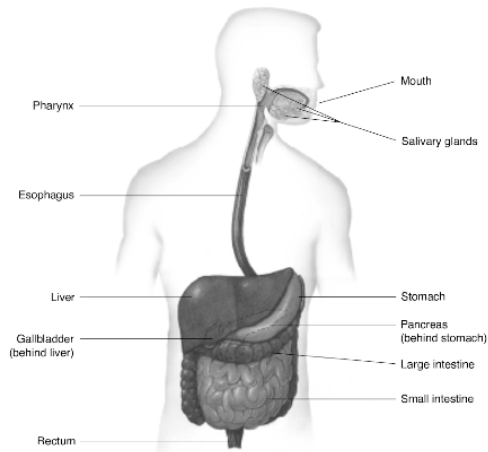
Functions of the Digestive System

- Receive food
- Digestion
 - Break down foods using:
 - Chemical
 - Enzymes
 - Hydrochloric acid
 - Bile (for fats)
 - Physical
- Absorption
 - Increased surface area
 - Ruggae (stomach)
 - Villi and Microvilli (sm int)
- Eliminate waste



The Human Digestive System

- Parts
 - mouth,
 - pharynx,
 - esophagus,
 - stomach,
 - small intestine,
 - large intestine
 - Rectum
 - anus.
- Major accessory structures,
 - salivary glands,
 - pancreas,
 - liver.

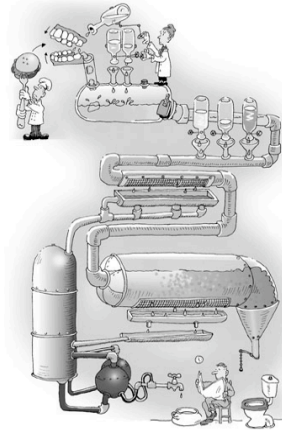


Digestion

- Mouth
 - Chewing – physical
 - Salivary glands – amylase chemically breaks down starch
- Pharynx, Esophagus (peristalsis)
- Stomach
 - Churning (physical)
 - Hydrochloric Acid – chemical
 - Pepsin – chemical breakdown of protein
- Small intestine - Duodenum
 - Pancreas – amylase (starch), trypsin (protein), lipase (lipid)
 - Other enzymes – maltase, sucrase, lactase; pepsidase (dipeptides)
Monomers ONLY can be absorbed, NOT polymers or dimers
 - Liver – bile (detergent-like, breaking up globs of fat)

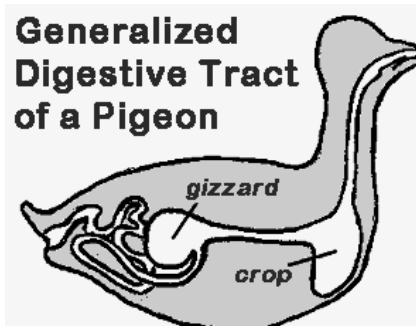
Absorption

- Absorption: moving materials into the blood (via capillaries)
- Small intestine – jejunem & ileum
 - Absorption of nutrients
 - Monosaccharides & amino acids
 - Fatty acids & water & electrolytes
- Large intestines
 - Absorb water



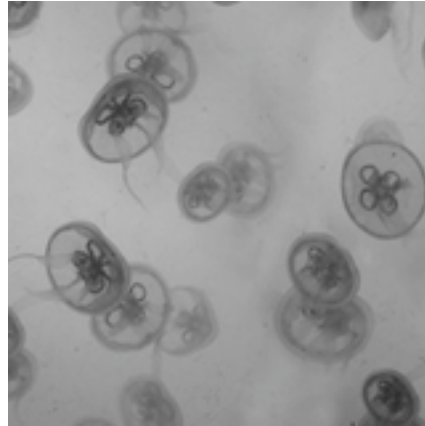
Bird

- Crop – holding area for food
- Stomach
 - Proventriculus – for acid breakdown
 - Gizzard – for physical breakdown (muscle & grit)
- Intestines - absorption
- Ceaca – water absorption
- Rectum
- Cloaca – one exit
 - Digestive waste
 - Excretory waste
 - Reproduction



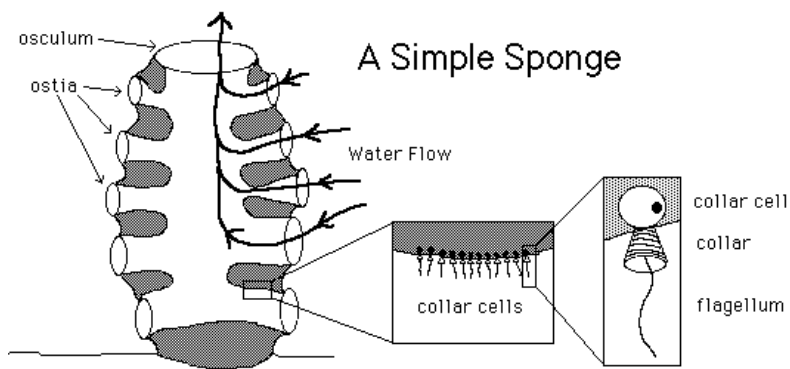
Jellyfish

- Mouth opening (no anus!)
 - Food comes in
 - Waste goes out
- Gastrovascular cavity
 - Extracellular digestion
 - Food broken down into monomers (absorbed)
 - Or feces (expelled)
- Gastroderm



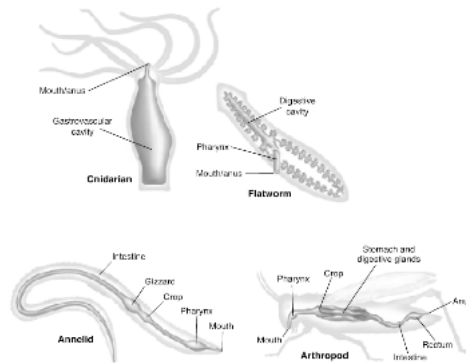
Sponges

- Intracellular digestion



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Invertebrates



Vertebrates

