

Section 10.1: Obtaining Nutrients

SB13UP

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Feeding Mechanisms

There are 4 main types of feeding mechanisms used by organisms:

1. Filter feeding
2. Substrate feeding
3. Fluid feeding
4. Bulk feeding



1) Filter Feeders

Aquatic animals (e.g. sponges, clams) tend to be **filter feeders**. They use a filter-like structure to siphon water into their mouth and filter food.



*Consume protists,
bacteria, and larvae*

2) Substrate Feeders

Substrate feeders tend to live in or on their food source.



Earthworms

Substrate feeders tend to eat through the food source (e.g. caterpillars, earthworms)

3) Fluid Feeders

Fluid feeders consume their food by sucking or licking nutrient rich fluids. Their mouths can pierce or rip skin/leaf tissue.



E.g. Mosquitoes



E.g. Hummingbirds

4) Bulk Feeders

Bulk feeders tend to ingest large pieces of food.



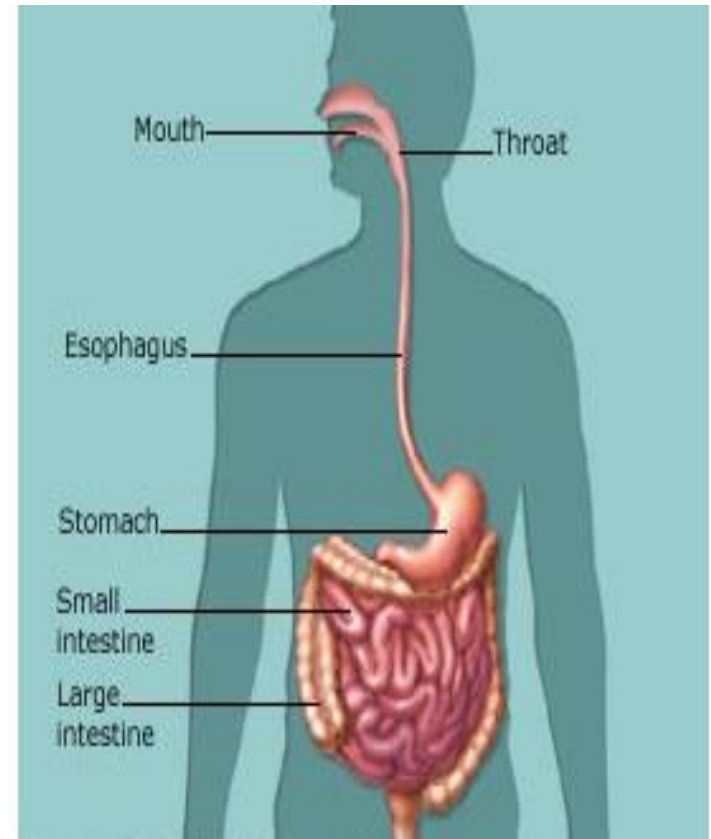
Some swallow food whole
(e.g. **Great Blue Heron**)



Others use tentacles, pincers, fangs, jaws or teeth. They kill prey or break off pieces of meat or vegetation.
(e.g. **Humans, cats, rabbits**)

Stages of Food Processing

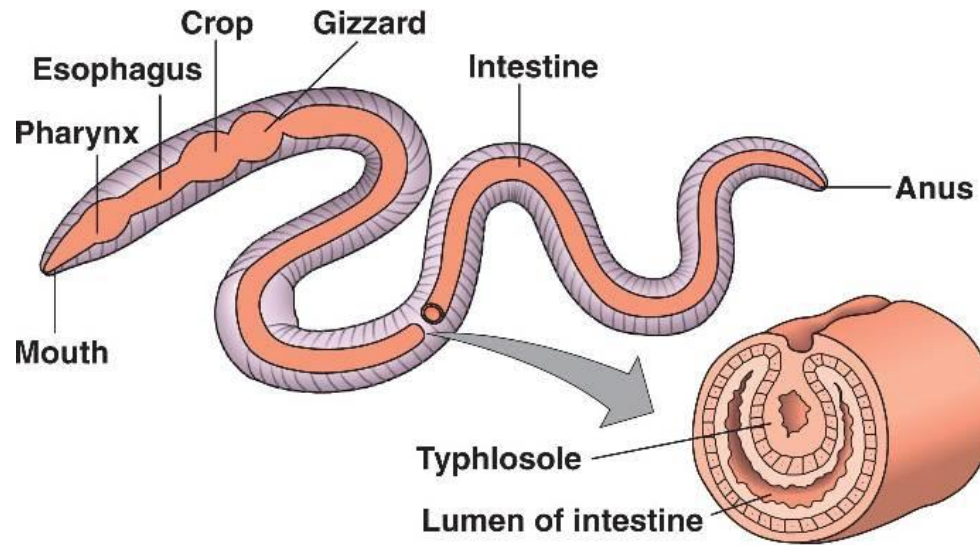
1. Ingestion :
2. Digestion :
3. Absorption :
4. Elimination :



Alimentary Canal

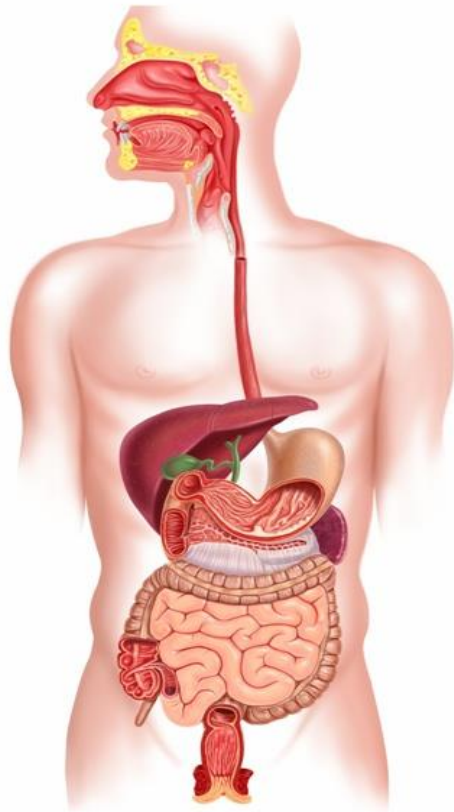
Alimentary Canal: the digestive tract beginning at the mouth and ending at the anus

- As food moves along it, the digestive system processes it in different ways (like a factory)



Digestive tract of Earthworm

Mechanical Digestion



Food is physically broken down by the teeth and muscular contractions in the digestive tract.

Chemical Digestion

Food is broken down by enzymes (proteins). The fluid releasing glands in the mouth and digestive tract release the enzymes which breakdown macromolecules into monomer subunits.



Length of the Digestive Tract

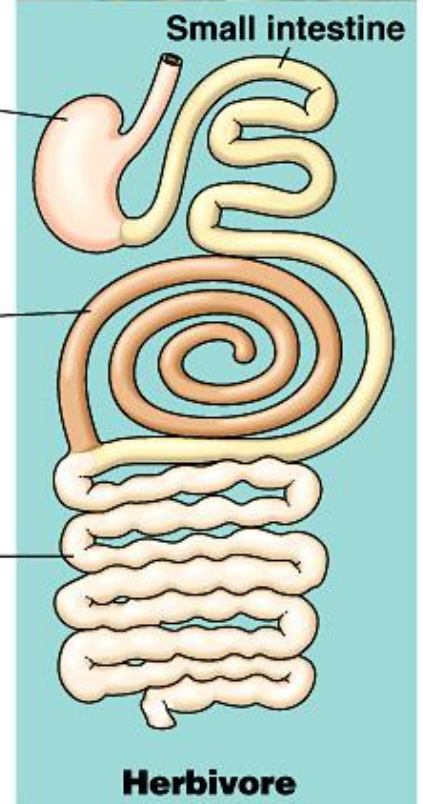
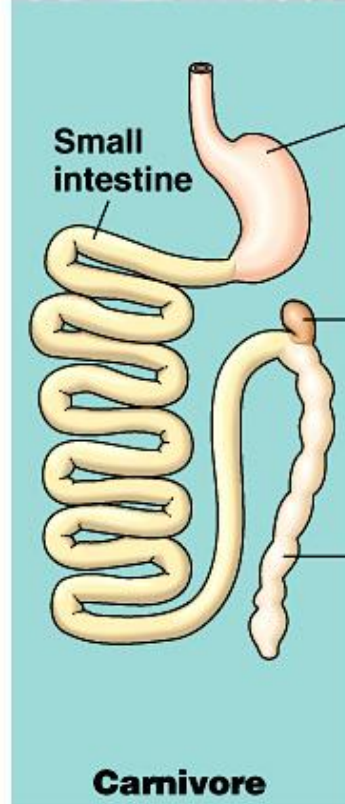
The length of digestive tract varies depending on the feeding habits of the organism.

Herbivores and omnivores = longer relative to body size

Carnivores = shorter relative to body size

Why?

Cecum: pouch at the beginning of the large intestine that receives undigested food from the small intestine



Homework

Textbook: pg 410 # 1-2, 6-13