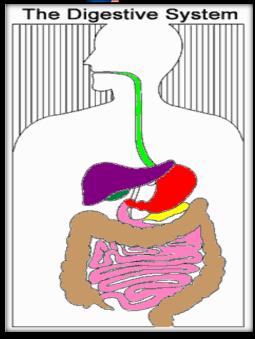
The Human Digestive System The Digestive System



Digestion

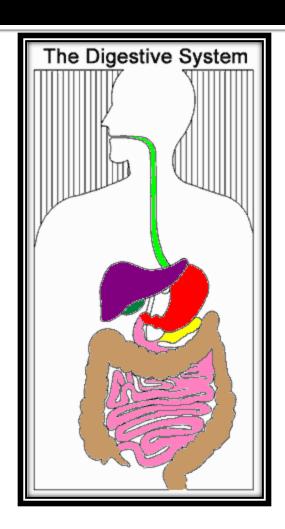
- Phases Include
 - Ingestion
 - Movement
 - 3. Mechanical and Chemical Digestion
 - 4. Absorption
 - 5. Elimination

Digestion

- Types
 - Mechanical (physical)
 - Chew
 - Tear
 - Grind
 - Mash
 - Mix
 - Chemical
 - Enzymatic reactions to improve digestion of
 - Carbohydrates
 - Proteins
 - Lipids

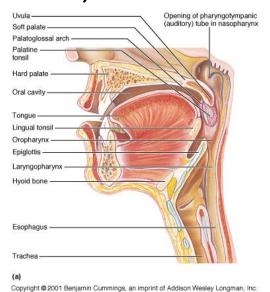
Digestive System Organization

- Gastrointestinal (GI) tract
 - Tube within a tube
 - Direct link/path between organs
 - Structures
 - Mouth
 - Pharynx
 - Esophagus
 - Stomach
 - Small intestine
 - Large Intestine
 - Rectum

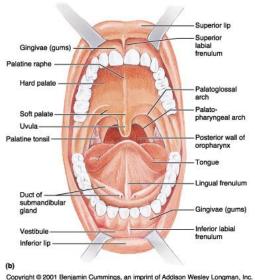


Mouth

Teeth mechanically break down food into small pieces. Tongue mixes food with saliva (contains amylase, which helps break down starch).



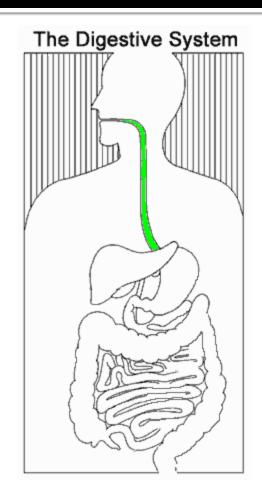
Epiglottis is a flap-like structure at the back of the throat that closes over the trachea preventing food from entering it.



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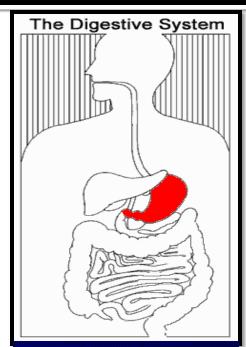
Esophagus

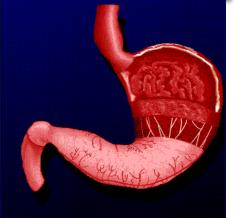
- Approximately 10" long
- Functions include:
- Secrete mucus
- Moves food from the throat to the stomach using muscle movement called peristalsis
- If acid from the stomach gets in here that's heartburn.



Stomach

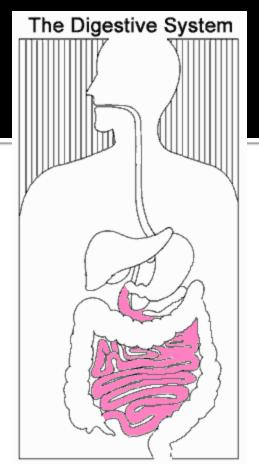
- J-shaped muscular bag that stores the food you eat, breaks it down into tiny pieces.
- Mixes food with digestive juices that contain enzymes to break down proteins and lipids.
- Acid in the stomach kills bacteria.
- Food found in the stomach is called chyme.

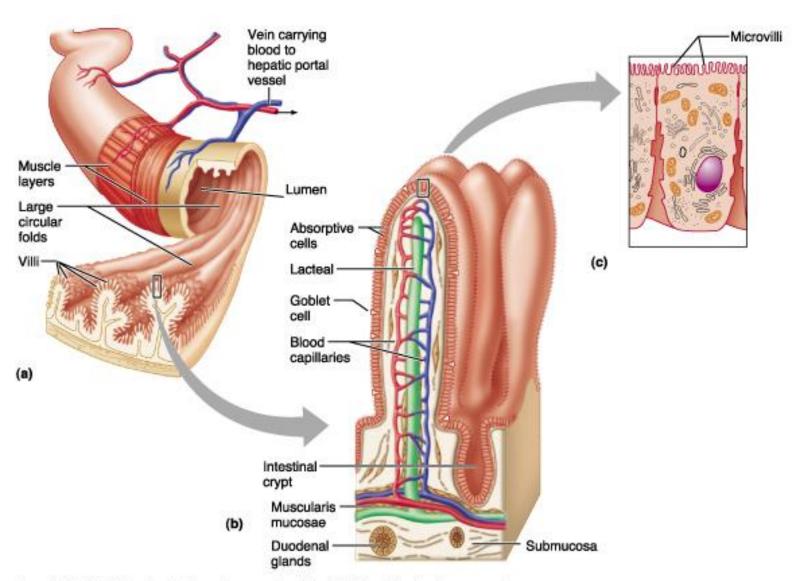




Small Intestine

- Small intestines are roughly 7 meters long
- Lining of intestine walls has finger-like projections called villi, to increase surface area.
- The villi are covered in microvilli which further increases surface area for absorption.



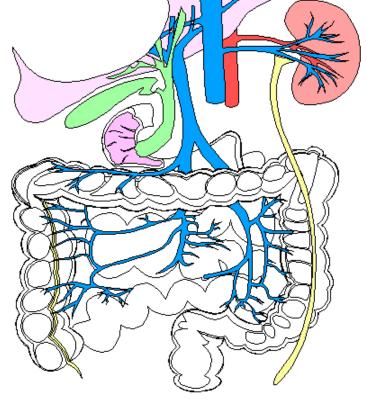


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Small Intestine

 Nutrients from the food pass into the bloodstream through the small intestine walls.

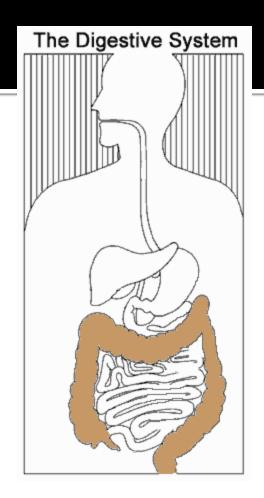
- Absorbs:
 - 80% ingested water
 - Vitamins
 - Minerals
 - Carbohydrates
 - Proteins
 - Lipids



Secretes digestive enzymes

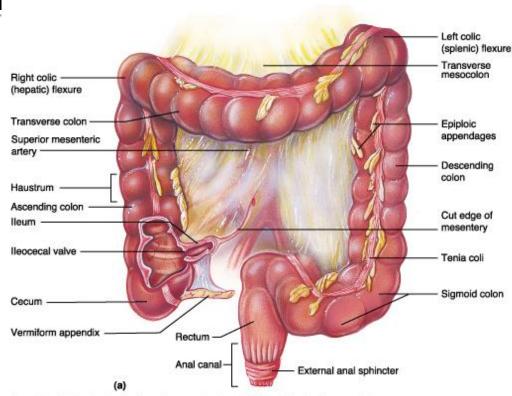
Large Intestine

- About 5 feet long
- Accepts what small intestines don't absorb
- Rectum (short term storage which holds feces before it is expelled).



Large Intestine

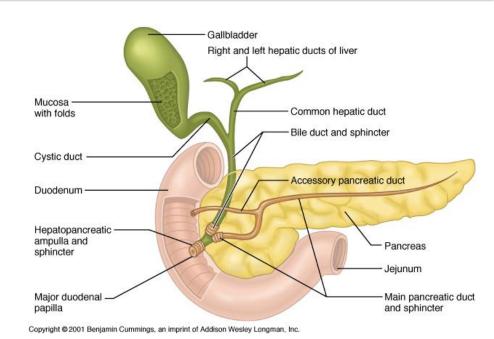
- Functions
 - Bacterial digestion
 - Ferment carbohydrates
 - Protein breakdown
 - Absorbs more water
 - Concentrate wastes



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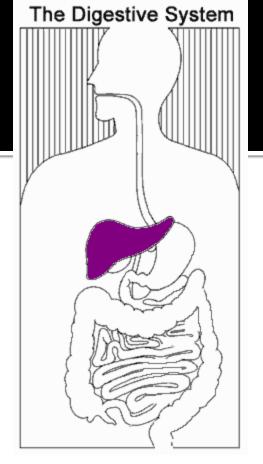
Accessory Organs

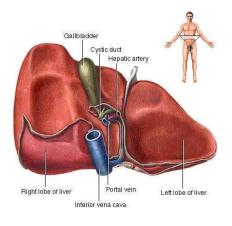
- Not part of the path of food, but play a critical role.
- Include: Liver, gall bladder, and pancreas



Liver

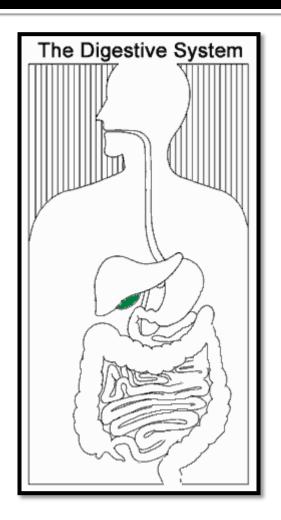
- Directly affects digestion by producing bile
 - Bile helps digest fat
 - filters out toxins and waste including drugs and alcohol





Gall Bladder

- Stores bile from the liver, releases it into the small intestine.
- Fatty diets can cause gallstones



Pancreas

- Produces digestive enzymes to digest fats, carbohydrates and proteins
- Regulates blood sugar by producing insulin

