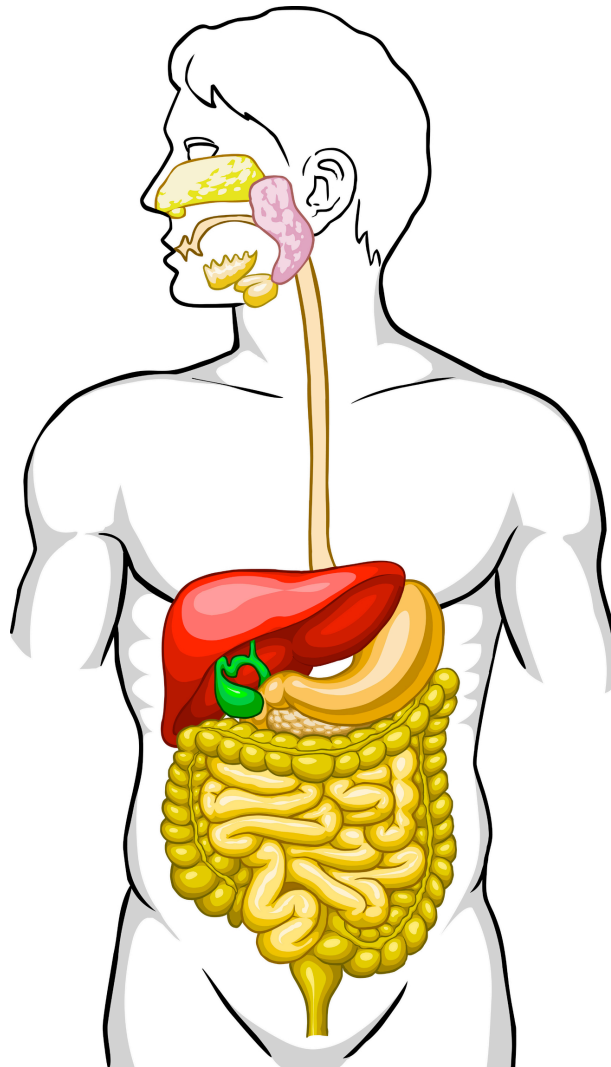


## Digestive System

- \_\_\_\_\_: food enters the system
  - Physical and \_\_\_\_\_ breakdown begins
- \_\_\_\_\_: Further breakdown, chemical/enzymatic
- \_\_\_\_\_: Nutrients enter \_\_\_\_\_ system, delivered to tissues of the body
- Elimination of Waste ( \_\_\_\_\_ ): Removal of wastes from body

### Labeling the Digestive System:



## Gastrointestinal Tract

- Tube within a tube
- Direct link/path between organs

GI Tract:	Accessory Organs
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### PART 1: Digestion

#### **Mouth**

- Salvia produced by \_\_\_\_\_.
- Lubricates food so it can be \_\_\_\_\_.
- Dissolves food particles so food can be tasted, food must be dissolved to be tasted
- On average we produce .75 to 1.5L of saliva per day
- Most of it is water which moistens the food into a ball or \_\_\_\_\_
- **Chemical Digestion:**
  - Salvia contains the enzyme \_\_\_\_\_ which begins to break down \_\_\_\_\_.
- **Physical Digestion:**
  - Teeth: Incisors (\_\_\_\_\_), canines (\_\_\_\_\_), premolars (\_\_\_\_\_), molars (\_\_\_\_\_), wisdom teeth (annoying)
  - Tongue: Mixes food with saliva

## Epiglottis

- A flap of soft tissue covers the entrance to the \_\_\_\_\_ to prevent food from entering the \_\_\_\_\_

## Esophagus

- Connects mouth to stomach
- Composed of \_\_\_\_\_ (contracts in rhythmic wavelike fashion = \_\_\_\_\_)
- Peristalsis (not gravity!) moves bolus down esophagus

## Stomach

- \_\_\_\_\_ muscular bag that stores the food you eat, breaks it down into tiny pieces.
- **Chemical Digestion:**
  - Gastric Juices: - \_\_\_\_\_ provides a protective coating.
    - \_\_\_\_\_ kills many harmful substances that are ingested with food.
    - \_\_\_\_\_ is a \_\_\_\_\_-digesting enzyme.
- **Mechanical Digestion:**
  - Stomach \_\_\_\_\_ helps to mix food.

## Small Intestine

- 2.5cm diameter, \_\_\_\_\_ in length
- \_\_\_\_\_ in the first portions, \_\_\_\_\_ in the latter portions
- Food entering the small intestine from the stomach is a liquid known as \_\_\_\_\_

- Small intestine broken into three sections:
  - \_\_\_\_\_: Most \_\_\_\_\_ happens here
  - \_\_\_\_\_: Most nutrient \_\_\_\_\_ happens here
  - \_\_\_\_\_: Absorbs mostly \_\_\_\_\_ and bile salts
- **Chemical Digestion:**
  - Digestive \_\_\_\_\_ line the cells of the small intestine and breakdown small food particles.
    - \_\_\_\_\_: Broken down by sucrase, maltase, and lactase.
    - \_\_\_\_\_ Broken down by peptidase.
    - \_\_\_\_\_: Broken down by lipase.
- **Mechanical Digestion:**
  - \_\_\_\_\_ helps break food into smaller particles.

## Pancreas

- Secretes \_\_\_\_\_ for digestion and \_\_\_\_\_ that regulate absorption and storage of glucose.
- Food entering small intestine is very acidic therefore the pancreas releases \_\_\_\_\_ ions to \_\_\_\_\_ the acid.
- Pancreatic Juice: A mixture of enzymes that break down
  - \_\_\_\_\_: amylase
  - \_\_\_\_\_: trypsin, chymotrypsin, carboxypeptidase
  - \_\_\_\_\_: lipase
  - \_\_\_\_\_: nuclease
- Regulates blood sugar by producing insulin

## Liver

- Involved in the removal and breakdown of \_\_\_\_\_ (such as alcohol)
- Liver produces and secretes \_\_\_\_\_
  - Bile: a substance that emulsifies \_\_\_\_\_ for faster breakdown

## Gallbladder

- Stores bile until food enters the \_\_\_\_\_
- Fatty diets can cause \_\_\_\_\_

## Part 2: Absorption

### Small Intestine

- Long \_\_\_\_\_ folds/tubes  
(\_\_\_\_\_, singular: villus) project from the lining of the small intestine to increase the surface area for absorption
- \_\_\_\_\_ project from the cell membranes of the villi to increase the \_\_\_\_\_ even more
- Capillaries (tiny blood vessels) line the inside of villi to absorb nutrients into the circulatory system.
- Villi/microvilli increase the surface area of the small intestine 10-30x
- More surface area = \_\_\_\_\_
- All of these folds give the small intestine a surface area close to that of a tennis court

Use this space to draw a picture of a villi and it's capillary

## Large Intestine

- 7.6cm diameter, \_\_\_\_\_ in length
- Colon: largest part of the large intestine.
- Water, salts, minerals are absorbed here, Nearly 8 L of fluid enters the large intestine  
– only about 0.1 L or so comes out as solid waste.
- Contains \_\_\_\_\_ that help further breakdown food.
- Further absorbs \_\_\_\_\_, B12, and other vitamins.
- Absorbs \_\_\_\_\_.

## Rectum

- The lower 20cm of the large intestine where \_\_\_\_\_ are stored.
- It may take 4 to 72 hours for the undigested material to pass through the large intestine, depending on the types and volume of food eaten.

Portion of GI Tract	What's broken down here?	What's absorbed here?
Mouth		
Esophagus		
Stomach		
Small Intestine		
Large Intestine		

SBI 3C  
J. Kropac