

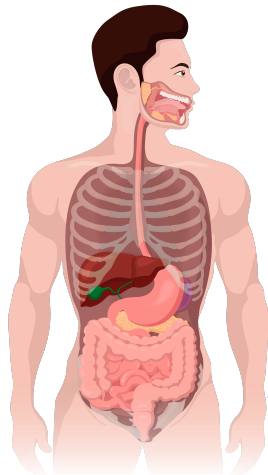
CONCEPT: OVERVIEW OF THE DIGESTIVE SYSTEM

Organs of the Digestive System

- ◆ The three main functions of the digestive system are:
 - Breakdown of food.
 - Absorption of nutrients.
 - Elimination of solid waste.
- ◆ The organs of the digestive system can be divided into _____ groups.
 1. **Alimentary Canal / Gastrointestinal (GI) Tract:** Muscular _____ from mouth to anus.
 2. **Accessory Organs:** Not part of the alimentary canal but ____ in digestion.

1. Alimentary Canal

- **Oral Cavity** ▸ **Pharynx** ▸ **Esophagus**
- **Stomach:** Acidic & enzymatic digestion.
- **Small Intestine:** Enzymatic digestion & _____ absorption.
- **Large Intestine:** Water re-absorption & _____ elimination.



2. Accessory Organs

- **Teeth** ▸ **Tongue**
- **Salivary Glands:** Moistens & _____ food.
- **Liver:** Produces _____.
- **Gallbladder:** Stores & concentrates bile.
- **Pancreas:** Secretes buffers & enzymes.

EXAMPLE

Which of the following statements about the digestive system is incorrect?

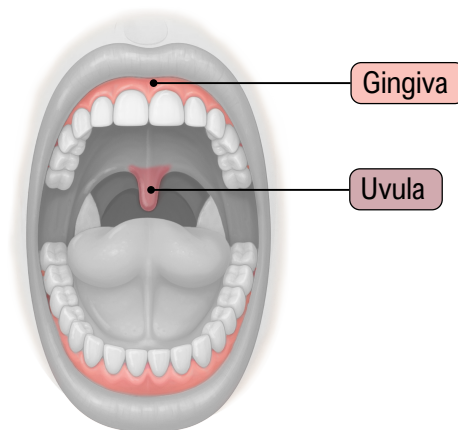
- a) The alimentary canal is a muscular tube that extends from the mouth to the anus.
- b) The liver produces buffers and enzymes which aid in digestion.
- c) The large intestine is responsible for water re-absorption and waste elimination.
- d) The gallbladder is a hollow organ that stores and concentrates bile.

CONCEPT: OVERVIEW OF THE DIGESTIVE SYSTEM

Oral Cavity

Oral Cavity

- ◆ Formed by palate (top), tongue (bottom), and cheeks (lateral walls/sides).
- ◆ **Gingiva (Gums):** Specialized part of the oral _____ membrane, seals off teeth in their sockets.
- ◆ **Uvula:** Hangs down the posterior edge of soft palate, location of _____ reflex.
- ◆ **Mastication:** Mechanical breakdown of food by _____ and mixing it with saliva.
- ◆ **Deglutition:** _____ of food, facilitated by the lubrication provided by saliva.



EXAMPLE

Which of the following statements is correct?

- Uvula is a structure that hangs down the posterior wall of the hard palate.
- The tongue is a muscular organ in the center of the oral cavity.
- Deglutition is the process of chewing food and mixing it with saliva.
- The gingiva is a specialized part of the oral mucous membrane and protects teeth sockets.

CONCEPT: OVERVIEW OF THE DIGESTIVE SYSTEM

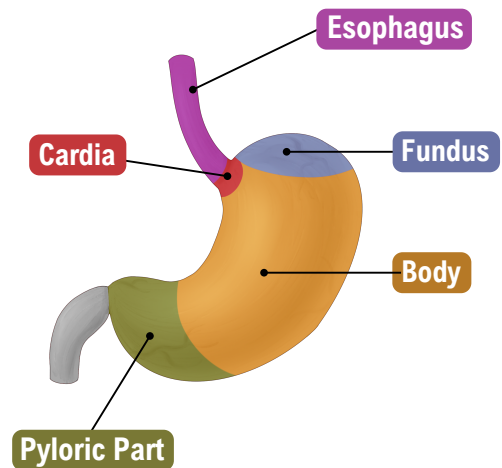
Esophagus & Stomach

Esophagus & Stomach

- ◆ **Esophagus:** Muscular tube that connects pharynx to _____.
- ◆ **Stomach:** ___-shaped muscular hollow organ, collects and churns food with digestive juices.
- ◆ Composed of ___ parts:
 - ▶ **Cardia:** Where esophagus attaches.
 - ▶ **Fundus:** Upper part.
 - ▶ **Body:** Largest central part.
 - ▶ **Pyloric Part:** Lower part, connects to the small intestine.

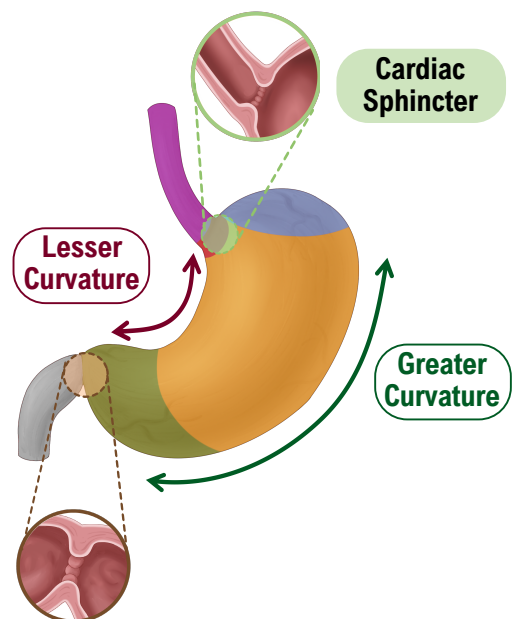
Memory Tool

My **CAR** is **FUN**,
but the **BODY** is
a **PYL** of junk.



Esophagus & Stomach

- ◆ **Curvatures:** **Greater** and **lesser** curvatures define the _____ of the stomach.
- ◆ **Sphincter:** Muscular valve.
 - ▶ **Cardiac Sphincter:** Keeps food from flowing back into the esophagus.
 - ▶ **Pyloric Sphincter:** Regulates the food as it passes into small intestine.



EXAMPLE

Use the words in the word-bank to fill in the blanks and complete the sentences.

Word-Bank: Pylorus Cardiac Esophagus Solid Body Pyloric Duodenum Hollow

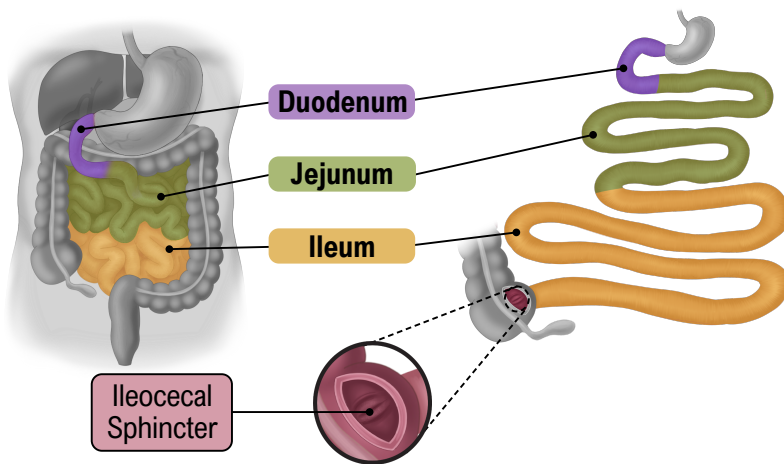
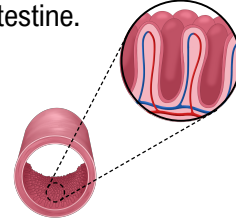
The stomach is a muscular _____ organ that mixes food with acid and digestive juices to reduce it to a digestible state. Out of the four regions of the stomach, the _____ is the largest region. The movement of food into and out of the stomach is controlled by sphincters. The _____ sphincter ensures that the food that enters the stomach does not flow back into the _____.

CONCEPT: OVERVIEW OF THE DIGESTIVE SYSTEM

Small Intestine

Small Intestine

- ◆ Long narrow muscular tube extending from pyloric sphincter to the _____ intestine.
 - Major site of digestion and absorption of nutrients.
- ◆ **Villi:** Tiny finger-like projections on the internal walls, increase surface area.
- ◆ Has 3 sections:
 - **Duodenum:** First ___-shaped section, starts from pyloric sphincter.
 - **Jejunum:** Central part, site for most of the nutrient absorption.
 - **Ileum:** Last & longest part, connects to the colon with the _____ sphincter.



Memory Tool

DJ Ileum grooves with food.



EXAMPLE

Which of the following statements about the small intestine is incorrect?

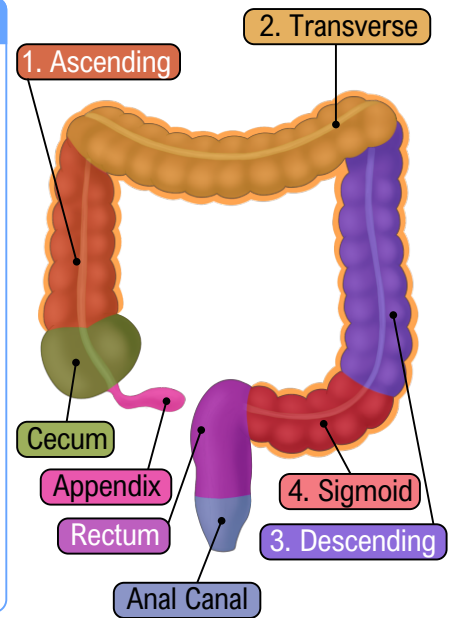
- Most of the nutrient absorption takes place in the central part of the small intestine.
- Villi are tiny finger-like projections on the internal walls of the small intestine.
- The small intestine extends from the pyloric sphincter to the ileocecal sphincter.
- The duodenum is the smallest while the jejunum is the largest section of the small intestine.

CONCEPT: OVERVIEW OF THE DIGESTIVE SYSTEM

Large Intestine

Large Intestine

- ◆ Muscular tube extending from ileocecal valve to the anus.
 - Absorbs _____ from the fluid that remains after digestion & absorption in small intestine.
- ◆ Has ___ sections:
 - **Cecum:** _____-like portion at the beginning.
 - **Appendix:** Finger-like pouch, projects out from _____.
 - **Colon:** Makes up most of the large intestine, divided into ___ sections.
 - 1. Ascending 2. Transverse 3. Descending 4. Sigmoid
 - **Rectum:** Stores feces and leads into anal canal.
 - **Anal Canal:** Passageway between rectum and anus.



EXAMPLE

Use the words in the word-bank to fill in the blanks and complete the sentences.

Word-Bank: Largest Alimentary Anal Cecum Colon Smallest Rectum Food Water

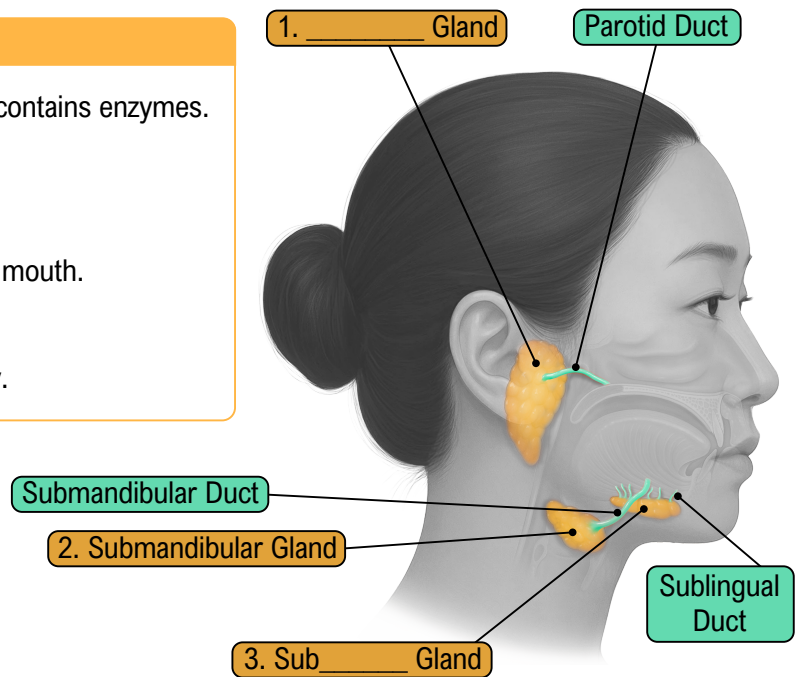
The large intestine is responsible for absorbing _____ from the fluid that remains after digestion and nutrient absorption in the small intestine is complete. The _____ is the foremost section that resembles a pouch. The colon is the _____ section subdivided into four regions. The solid waste from the digestion process is stored in the _____ from where it is eliminated through the _____ canal.

CONCEPT: OVERVIEW OF THE DIGESTIVE SYSTEM

Salivary Glands

Salivary Glands

- ◆ Produce saliva that moistens, lubricates food & contains enzymes.
- ◆ ___ pairs of **salivary glands**:
 - ▶ **1. Parotid Glands:** In front of the _____.
 - ▶ **2. Submandibular Glands:** In the floor of the mouth.
 - ▶ **3. Sublingual Glands:** Below the _____.
- ◆ **Salivary Ducts:** Transport saliva to the oral cavity.



EXAMPLE

Which of the following statements about the salivary glands is correct?

- The parotid glands are located below the tongue and secrete saliva directly into the submandibular duct.
- The submandibular glands are found in front of the ears.
- The sublingual glands are the largest salivary glands and are located in the floor of the mouth.
- There are 3 pairs of salivary glands in the body with each pair named after its anatomical location.

CONCEPT: OVERVIEW OF THE DIGESTIVE SYSTEM

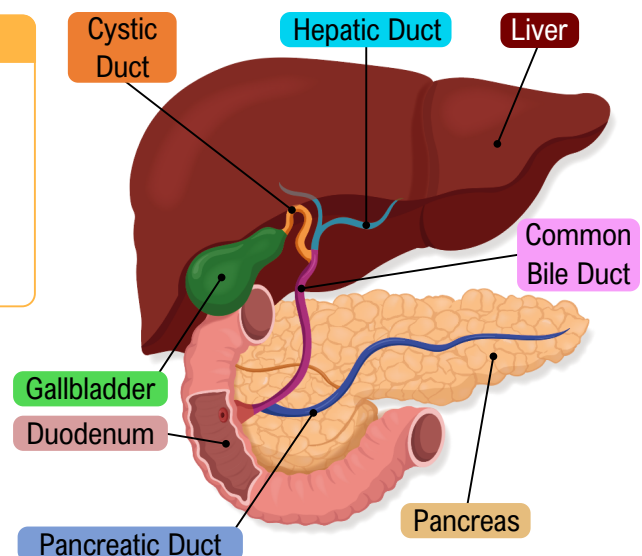
Liver, Gallbladder, and Pancreas

Liver, Gallbladder, and Pancreas

- ◆ **Liver:** Large organ located in the right upper quadrant (RUQ) of abdomen.
 - Produces bile, processes absorbed nutrients, detoxifies harmful substances.
 - **Bile:** Important for ___ digestion; breaks large fat globules into smaller droplets (emulsification).
 - Bile travels to the gallbladder through **hepatic** and **cystic** ducts.
- ◆ **Gallbladder:** Small pear-shaped organ beneath liver, _____ & concentrates bile.
 - Contracts and sends bile through cystic duct to **common bile duct** which drains into _____.
- ◆ **Pancreas:** Large gland behind the stomach, produces _____ & pancreatic enzymes.
 - Pancreatic secretions drain into duodenum through the _____ duct.

Duct System Review

- ◆ **Hepatic Duct:** Carries bile _____ of the liver.
- ◆ **Cystic Duct:** Carries bile into & out of the gallbladder.
- ◆ **Common Bile Duct:** _____ of hepatic & cystic ducts.
- ◆ **Pancreatic Duct:** Carries pancreatic secretions to duodenum.



EXAMPLE

Use the words in the word-bank to fill in the blanks and complete the sentences.

Word-Bank: Ducts Proteins Fats Pancreatic Sublingual Common Cystic

Liver, gallbladder, and pancreas are accessory organs of the digestive system. Bile is important for the digestion of _____ because it helps break larger fat globules into smaller droplets. The secretions from the liver and pancreas are taken to the duodenum through a system of _____. The gallbladder uses the _____ duct to receive bile and release it when needed. Bile travels to the duodenum through the _____ bile duct while the buffers and enzymes from the pancreas are carried through the _____ duct.

CONCEPT: OVERVIEW OF THE DIGESTIVE SYSTEM

PRACTICE

Use the given terms to label the anatomical features in the diagram below.

- a) Liver
- b) Esophagus
- c) Gallbladder
- d) Parotid glands
- e) Transverse colon
- f) Pancreas
- g) Rectum
- h) Duodenum

