

DIGESTIVE SYSTEM

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INTRODUCTION

- Digestion is defined as the process by which food is **broken** down into **simple chemical substances** that can be **absorbed** and used as **nutrients** by the body.
- Digestive system plays the major role in the **digestion** and **absorption** of food substances.

FUNCTIONS OF DIGESTIVE SYSTEM

1. **Ingestion** or **consumption** of food substances
2. **Breaking** them into small particles
3. **Transport** of small particles to different areas of the digestive tract
4. **Secretion** of necessary enzymes and other substances for digestion.
5. **Digestion** of the food particles.
6. **Absorption** of the digestive products (nutrients).
7. **Removal** of unwanted substances from the body.

FUNCTIONAL ANATOMY OF DIGESTIVE SYSTEM

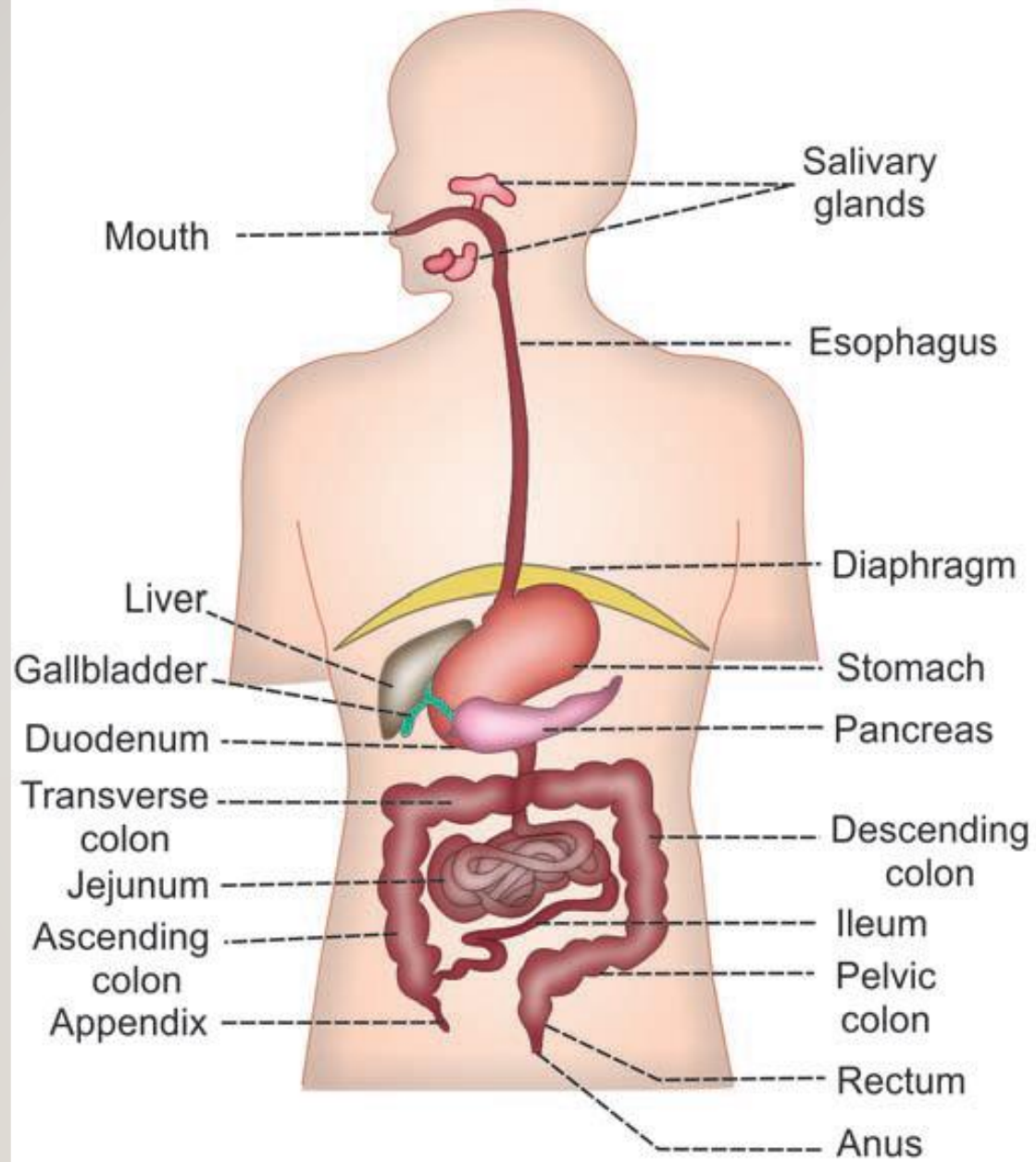
- Digestive system is made up of **GI tract or alimentary canal** and **accessory organs**, which help in the process of **digestion** and **absorption**.
- GI tract is a tubular structure extending from the **mouth** up to **anus**, with a length of about **30 feet**.
- It opens to the external environment on both ends.
- GI tract is formed by two types of organs:
 - 1. Primary digestive organs.**
 - 2. Accessory digestive organs.**

1. PRIMARY DIGESTIVE ORGANS

- Primary digestive organs are the organs where **actual digestion** takes place.
- Primary digestive organs are:
 - i. Mouth
 - ii. Pharynx
 - iii. Esophagus
 - iv. Stomach
 - v. Small intestine
 - vi. Large intestine

2. ACCESSORY DIGESTIVE ORGANS

- Accessory digestive organs are those which **help** primary digestive organs in the process of digestion.
- Accessory digestive organs are:
 - i. Teeth
 - ii. Tongue
 - iii. Salivary glands
 - iv. Exocrine part of pancreas
 - v. Liver
 - vi. Gallbladder



WALL OF GASTROINTESTINAL TRACT

In general, wall of the GI tract is formed by **four layers** which are from inside out:

- 1. Mucus layer**
- 2. Submucous layer**
- 3. Muscular layer**
- 4. Serous or fibrous layer**

1. MUCUS LAYER

- Mucus layer is the **innermost** layer of the wall of GI tract.
- It is also called **gastrointestinal mucosa** or **mucus membrane**.
- It faces the cavity of GI tract.

2. SUBMUCUS LAYER

- Submucous layer is also present in all parts of GI tract, **except the mouth and pharynx.**
- It contains loose collagen fibers, elastic fibers, reticular fibers and few cells of connective tissue.
- Blood vessels, lymphatic vessels and nerve plexus are present in this layer.

3. MUSCULAR LAYER

- Muscular layer in lips, cheeks and wall of pharynx contains skeletal muscle fibers.
- The esophagus has both **skeletal** and **smooth** muscle fibers.
- Wall of the stomach and intestine is formed by smooth muscle fibers.

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- Smooth muscle fibers in stomach are arranged in three layers:
 - i. Inner oblique layer**
 - ii. Middle circular layer**
 - iii. Outer longitudinal layer.**
 - Smooth muscle fibers in the intestine are arranged in two layers:
 - i. Inner circular layer**
 - ii. Outer longitudinal layer.**

4. SEROUS OR FIBROUS LAYER

- **Outermost** layer of the wall of GI tract is either serous or fibrous in nature.
- The serous layer is also called **serosa** or **serous membrane** and it is formed by connective tissue and mesoepithelial cells.
- It covers stomach, small intestine and large intestine.

THANK YOU

