



The Digestive System

Functions of the Digestive System

1- Ingestion

2- Digestion

- Mechanical digestion – muscular movement of the digestive tract (mainly in the oral cavity and stomach) physically break down food into smaller particles.
- Chemical digestion – hydrolysis reactions aided by enzymes (mainly in the stomach and small intestine) chemically break down food particles into nutrient molecules, small enough to be absorbed.

3- Secretion

4- Absorption

5- Elimination

The **human digestive system** consists of the

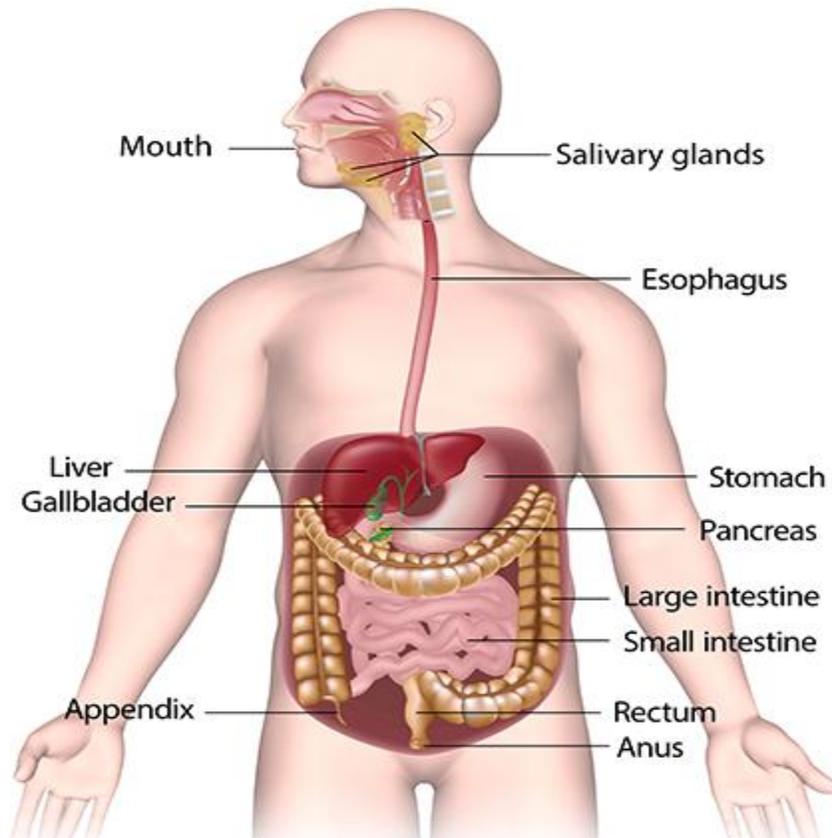
1- Gastrointestinal tract also called the GI tract or digestive tract

2- The accessory organs of digestion (the tongue, salivary glands, teeth, pancreas, liver, and gallbladder).

❖ **GI tract** is a continuous tube extending through the ventral cavity from the mouth to the anus – it consists of the mouth, oral cavity, oropharynx, esophagus, stomach, small intestine, large intestine, rectum, and anus.

❖ **Accessory structures** include the teeth, tongue (in oral cavity), salivary glands, liver, gallbladder, and pancreas.

The Digestive System



Muscular movement of the GI tract

- **Peristalsis** – wavelike movement that occurs from the oropharynx to the rectum,

allowing GI tract to push food particles toward the anus.

- **Mixing**—mixing motion in the oral cavity and stomach that allows the GI tract

to repeatedly break down food into smaller particles, using mechanical digestion.

- **Segmentation** – regions of the small intestine contracting and relaxing

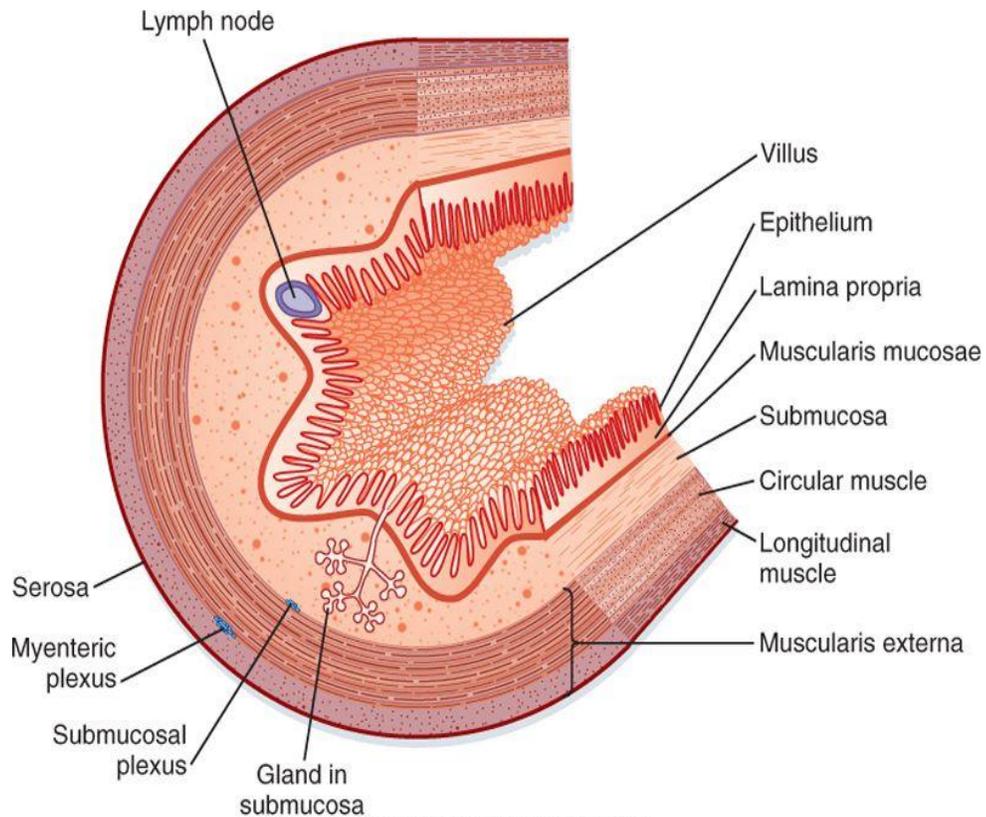
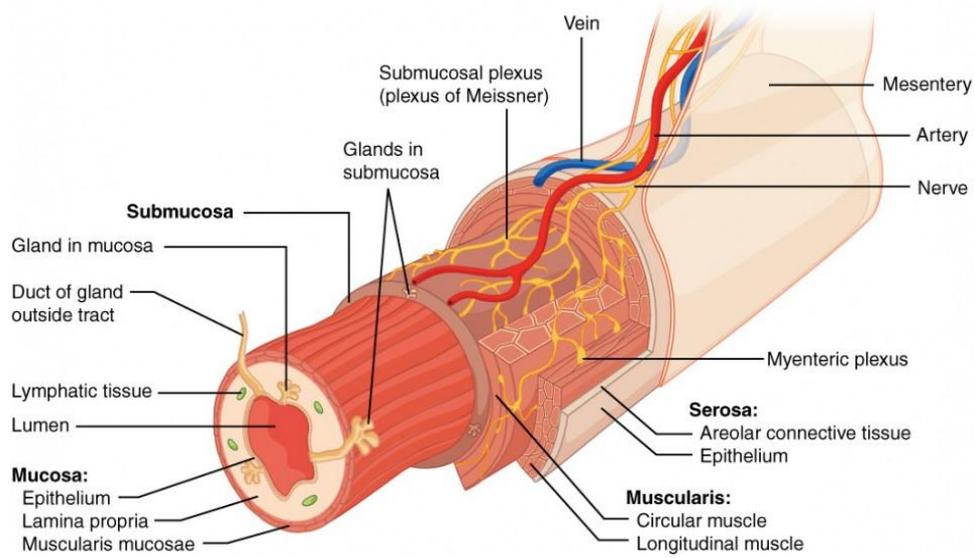


independently, allowing the small intestine to digestive and absorb more efficiently.

General Structure Of The Digestive Tract

All regions of the GI tract have certain structural features in common

- The **mucosa** consists of an **epithelial lining**; an underlying **lamina propria** of loose connective tissue rich in blood vessels, lymphatics, lymphocytes, smooth muscle cells, and often containing small glands; and a thin layer of smooth muscle called the **muscularis mucosae** separating mucosa from sub mucosa
- The **submucosa** contains denser connective tissue with larger blood and lymph vessels and the **submucosal plexus** of autonomic nerves. It may also contain glands and significant lymphoid tissue.
- The thick **muscularis** (or muscularis externa) is composed of smooth muscle cells organized as two or more sublayers.
- The **serosa**, a thin sheet of loose connective tissue, rich in blood vessels, lymphatics, and adipose tissue, and covered with a simple squamous covering epithelium or **mesothelium**, is the outermost layer of the digestive tract located within the abdominal cavity.



Koepfen & Stanton: Berne and Levy Physiology, 6th Edition.
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