

The digestive system (Digestive tract)

Consists :-

1- Oral cavity -

2- Esophagus 3- Stomach 4- small and large intestines 5- -
Rectum 6- Associates glands such as salivary glands , liver
and pancrease



- Functions :-

Obtains from ingested food molecules necessary for
maintenace and growth of the body .

Quiz:-

What is digestion ? and what is the type of tissue lining the
inner surface of digestive system ?

General structure

- Digestive system is a hollow tube with a lumen of variable diameter

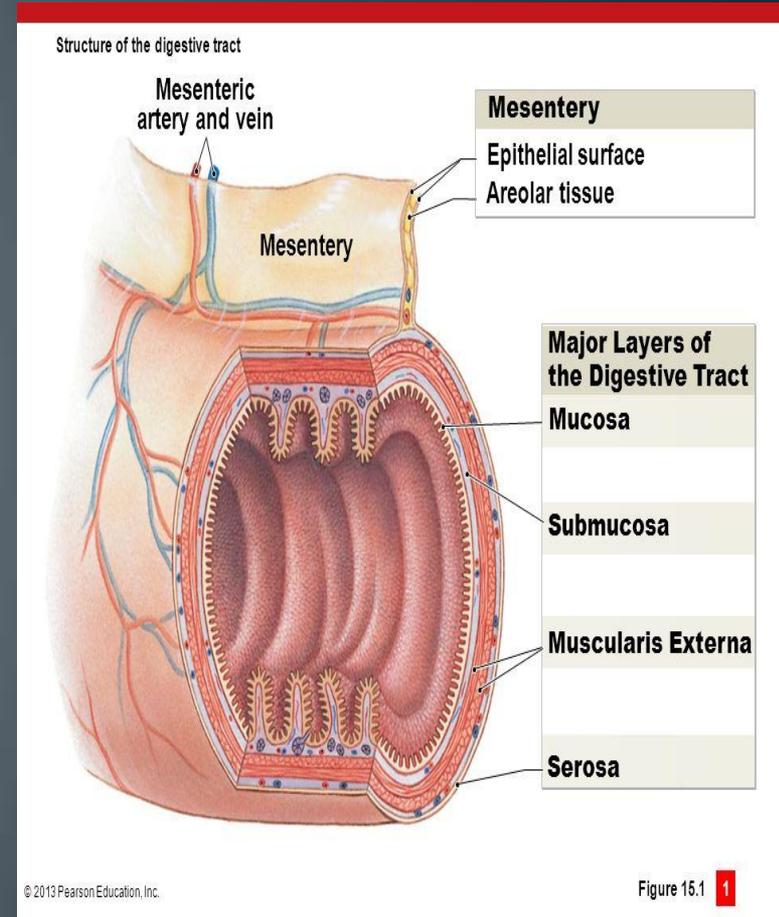
- The wall of any organ made up of four layers :-

a- Mucosa

b- Submucosa

c- Muscularis

d- Serosa



The mucosa

- epithelial lining of the digestive tract

Consist of

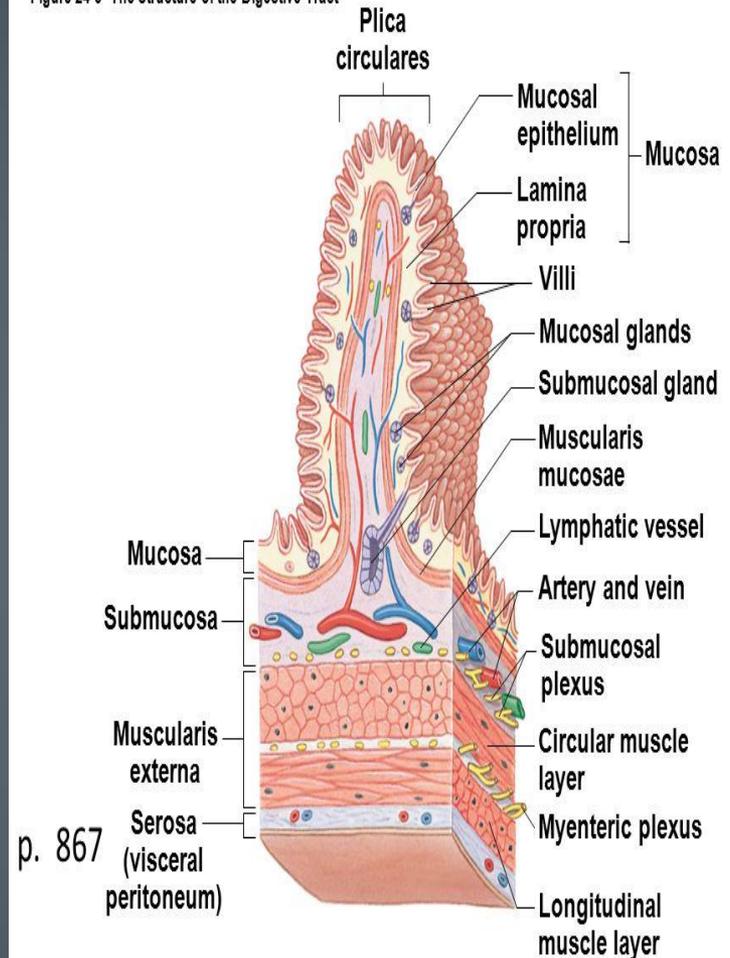
- mucosal epithelium :- moistened by glandular secretions

- Lamina proprial :- underlying layer of loose rich with blood vesseles and lymphocytes .

- Smooth muscle cells with glands
connective tissue



Figure 24-3 The Structure of the Digestive Tract



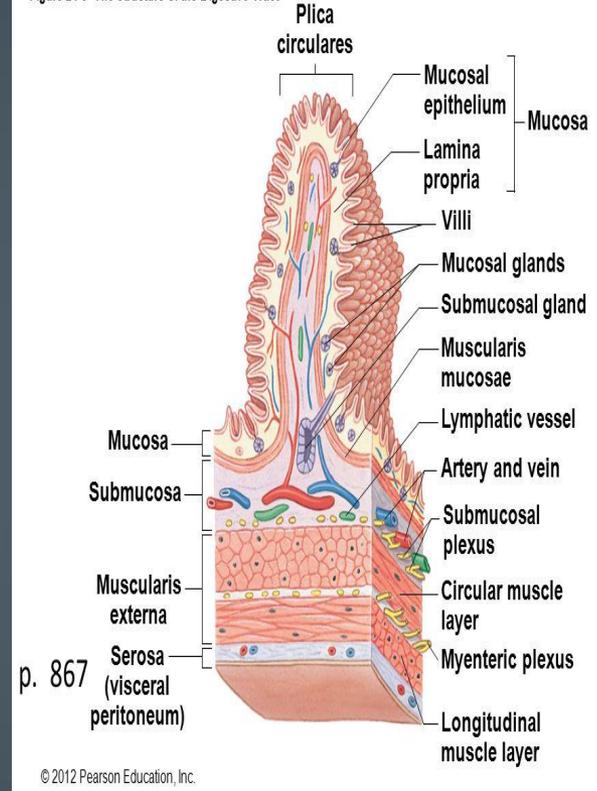
- Submucosa contains :-

1- very dense connective tissue with blood and lymph vessels

2- autonomic nerves

- **Muscularis** is a thick layer composed of
- Spirally oriented smooth muscle usually divided into two sublayers , in the internal sublayer , the orientation is circular but the external layer is longitudinal
- blood vessels , nerves and lymph are in the connective tissue between muscles sublayer

Figure 24-3 The Structure of the Digestive Tract



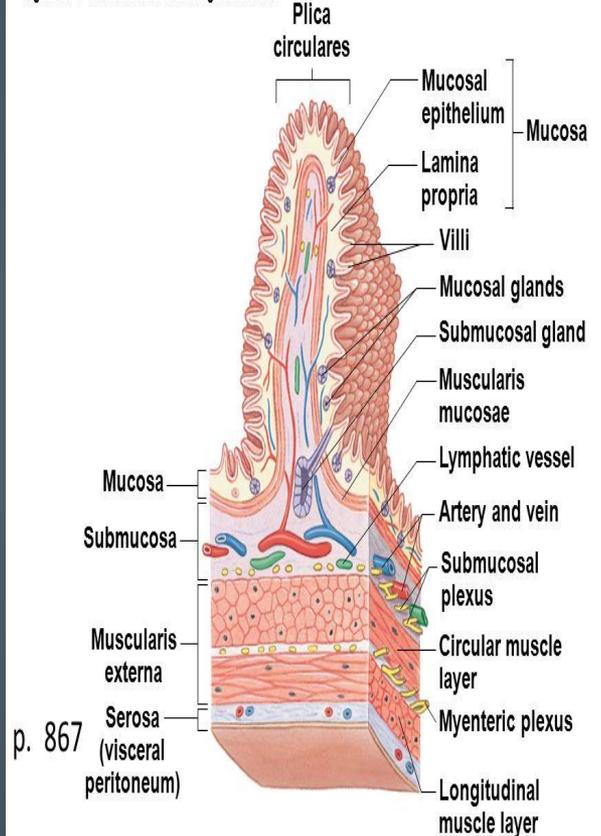
The Serosa consists of

1- A thin layers of loose connective tissue (rich in blood vessels , lymphs and adipose tissue

2- a simple squamous epithelium covering (mesothelium)

Note :- in some structures like esophagus , the serosa is replaced by adentitia , that consisting of connective tissue with blood vessels and nerves .

Figure 24-3 The Structure of the Digestive Tract



Main functions of the epithelial lining are :-

- 1- provide a selectively permeable barrier between the contents and the tract and the other tissues .**
- 2- facilitate the transport and digestion of food .**
- 3- promote the absorption of the products of digestion .**
- 4- produce the hormones that affect the activity of digestive system .**
- 5- produce mucus for lubrication protection**
- 6- the presence of lymphoids in that tissue protect the system from the bacterial infection .**



oral cavity .

The Oral Cavity

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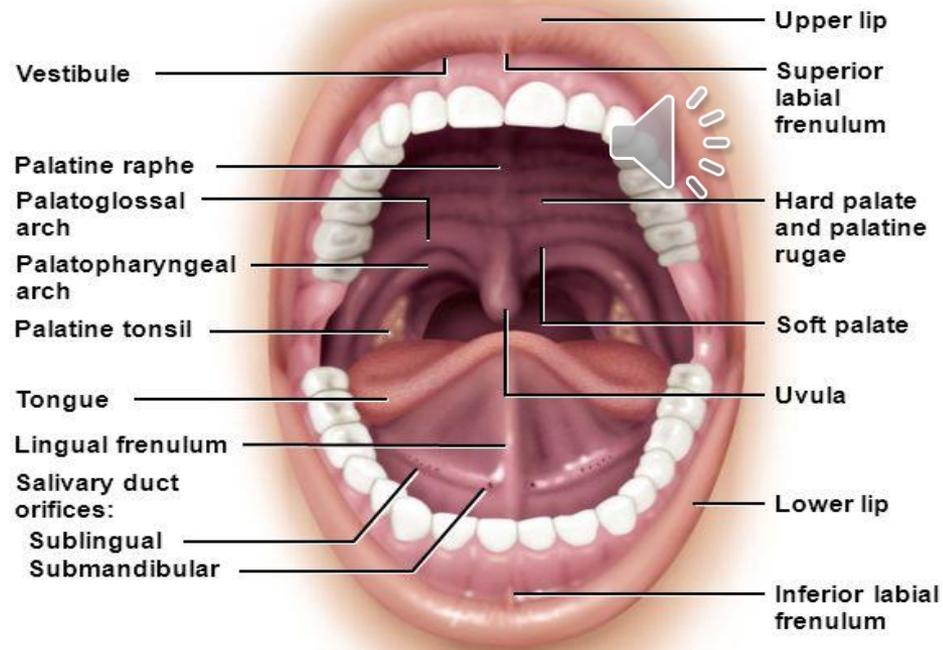


Figure 25.4

Histology structure of oral cavity

-
- oral cavity is lined with stratified squamous epithelium
- That epithelium is keratinized or Non – keratinized
- The lamina propria has many papillae rests on bone
- There are many salivary glands .

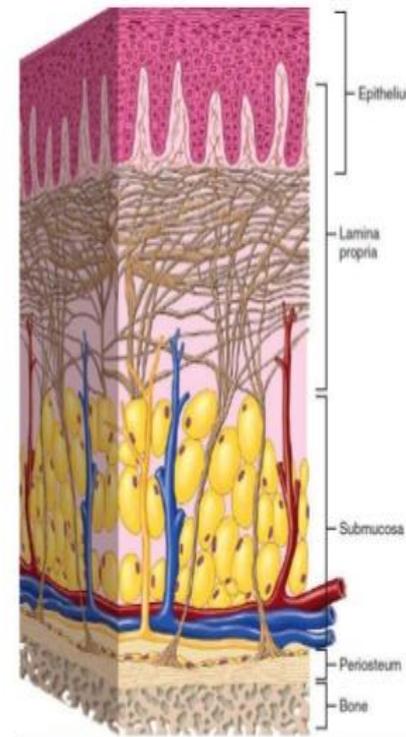
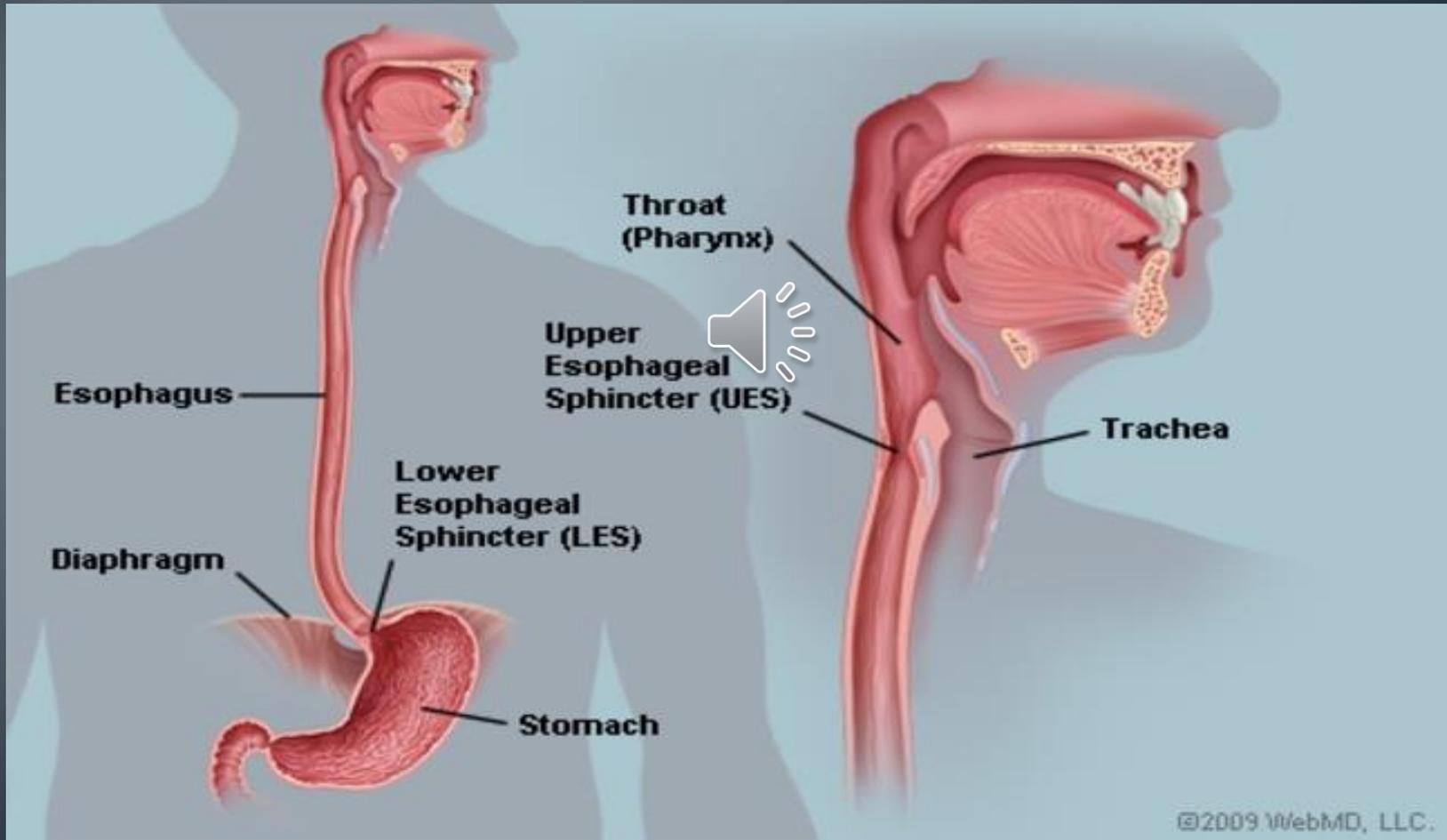


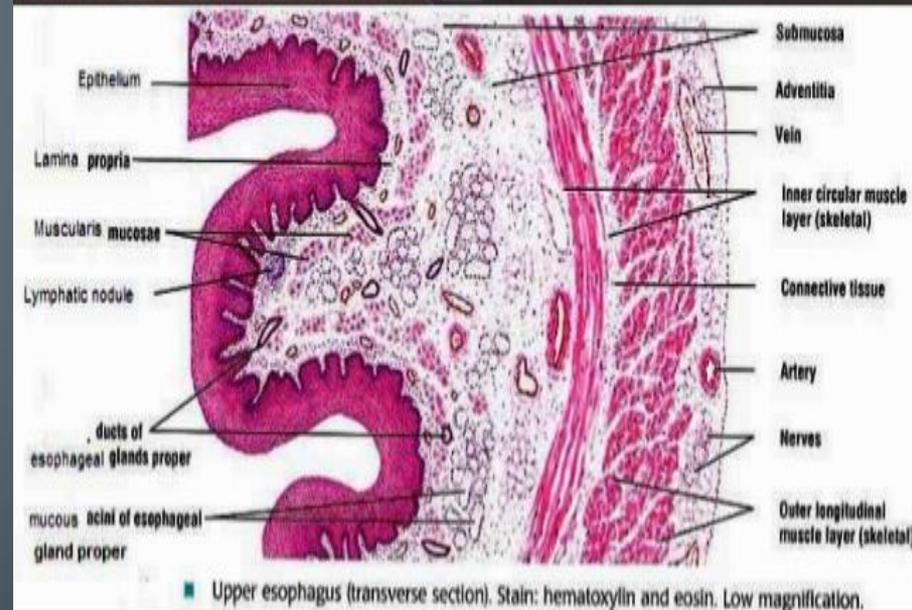
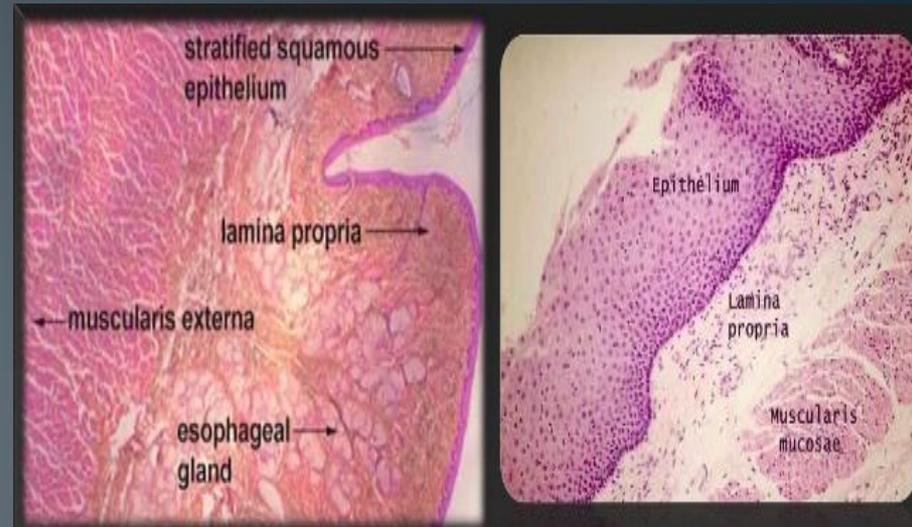
FIGURE 12-4 Main tissue components of the oral mucosa.

Eseophagus Histology



Eseophagus Histology

- function ;- Transport food from the mouth to stomach.
- lined by nonkeratinized stratified squamous epithelium
- The submucosa with group of mucus – secreting glands facilitate the transport of food and protect mucosa .
- The muscularis is exclusively Skeletal muscles
- serosa is covering the distal part
- Adventitia is one layer of loose connective tissue .



■ Upper esophagus (transverse section). Stain: hematoxylin and eosin. Low magnification.

Stomach Histology

- functions :- continue Digestion (mostly chemical digestion) by several enzymes

- composed of four regions : Cardia , fundus , body , pylorus with four histological layers .



1- Mucosa consists of simple columnar epithelium with glands and stem cell .

2- submucosa is consisted of connective with blood and lymph vessels .

3- muscularis composed of smooth muscles fibers function for rythmic contractions .

