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Taste buds

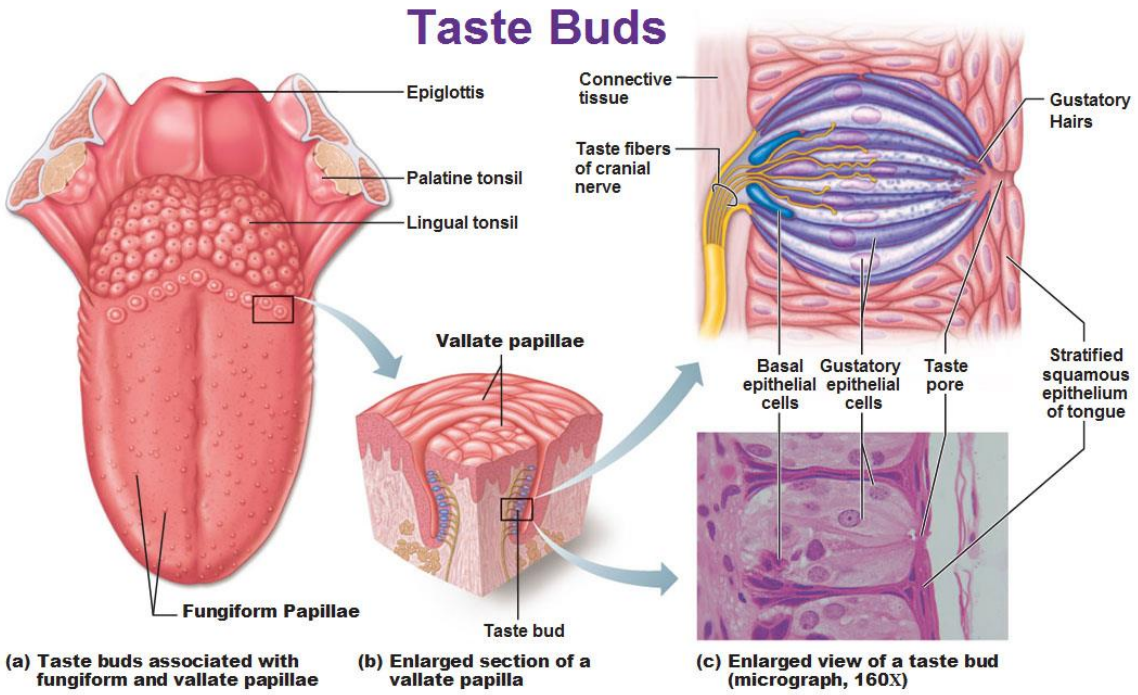
The taste buds are specialized sensory organs embedded within the epithelium of the gustatory papillae. They are also found scattered within the epithelial lining of the throat, soft palate and epiglottis.. With LM, they appear as oval-shaped clusters of pale-stained spindle-shaped cells that occupy the full thickness of the epithelium.

The cells forming the taste buds are of three types: gustatory, sustentacular or supporting and basal cells.

▲ The gustatory, taste or sensory cells are located in the center of the taste buds.. Each cell bears a number of microvilli or taste hairs that project into a small opening within the luminal surface of the epithelium called taste pore .

▲The supporting or sustentacular cells are spindle-shaped with much darker cytoplasm and are found among the taste cells.

▲The basal cells are population of small spherical cells located at the base of each taste bud and act as progenitors for other cell types.



General Structure of Tubular Organs

Esophagus

The esophageal wall is formed of mucosa, submucosa, tunica muscularis and serosa or adventitia.

▲The mucosa is formed of epithelium, lamina propria and lamina muscularis mucosa.

▲The epithelium is stratified squamous non-keratinised (dog, cat)and highly keratinized (ruminants). The lamina propria is a dense irregular connective tissue layer rich in immunocompetent cells, blood vessels and nerves.

▲The lamina muscularis is formed of longitudinally arranged smooth muscles.
In cat, horse and ruminants, it is formed of isolated bundles at the cranial end and increase in number in the caudal part.

▲The submucosa is a loose connective tissue layer contains blood vessels, lymphatic, nerves and seromucoid esophageal glands. In dog, the glands extend throughout the entire length. In cat, horse and ruminants, they occur at the pharyngeo-esophageal Junction.

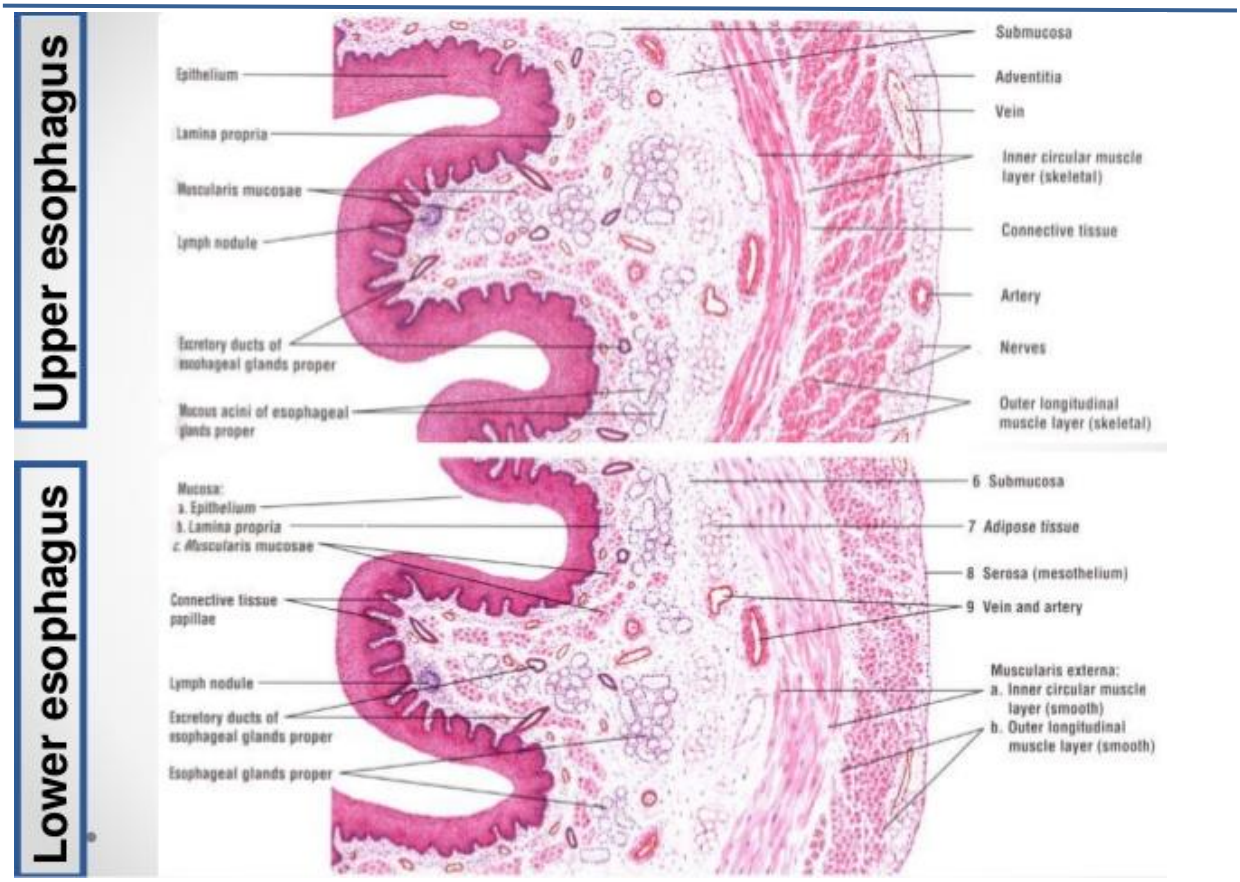
▲The tunica muscularis is formed of smooth and /or striated muscle fibers.

In dog and ruminants, it is entirely striated muscle. In horse, it is striated in the cranial 2/3 and smooth in the caudal third.

In cat, it is striated in the cranial 4/5 and smooth in the caudal 1/5.

The cervical esophagus is covered by adventitia that is a loose connective tissue layer contains blood & lymph vessels and nerves. The thoracic esophagus is covered by serosa that is a loose connective tissue layer with an outer mesothelial covering.

The abdominal esophagus (beyond the diaphragm) is about 2.5 cm in horse and short- wedge-shaped in carnivores is covered by serosa.



Stomach :

The stomach is an enlarged part of the digestive tube connect the esophagus with small intestine , stomach have many enzyme that break down the food .

The stomach is lined exclusively by a glandular mucosa in carnivores, whereas herbivorous animals have, in addition to a glandular region, a non glandular region of the mucosa lined with stratified squamous epithelium.

Stomach either simple (unilocur) in human and carnivorous and compound stomach in ruminant. consist of 3champered (rumen , reticulum , omasum).

Glandular Stomach

Wall of the glandular stomach:

1- Tunica mucosa in the empty the Tunica mucosa have deep longitudinal fold called (ruge) that extend from muscularis mucosa to the rumen.

When the stomach full the ruge is reduced in size depended on the distention of the stomach.

2- Tunica submucosa: have loose c.t. contain parasympathetic ganglia located in the submucosa called meissners plexus.

3- Tunica muscularis maybe smooth consist of inner circular and outer longitudinal and contain parasympathetic ganglia (myenteric or aurbach plexuses)

4- Tunica serosa : loose c.t. lined with simple squamous epithelium.

The glandular region of the mucosa of the stomach is divided into three distinct smaller regions named according to the various glandular types present: cardiac, proper gastric (fundic) ,and pyloric.