Digestive system

Is made up of series of tubular organ and associated glands

- ***Oral cavity:***
- *Anatomically consist of lips, cheek, tongue, gingiva, teeth, palates. The oral cavity is lined by oral mucosa which composed of stratified squamous keratinized or non keratinized epithelium. The region which exposed to considerable friction force (gingiva, dorsal surface of tongue and hard palate) are covered with keratinized epithelium, reminder of the oral cavity is covered by non keratinized epithelium.*

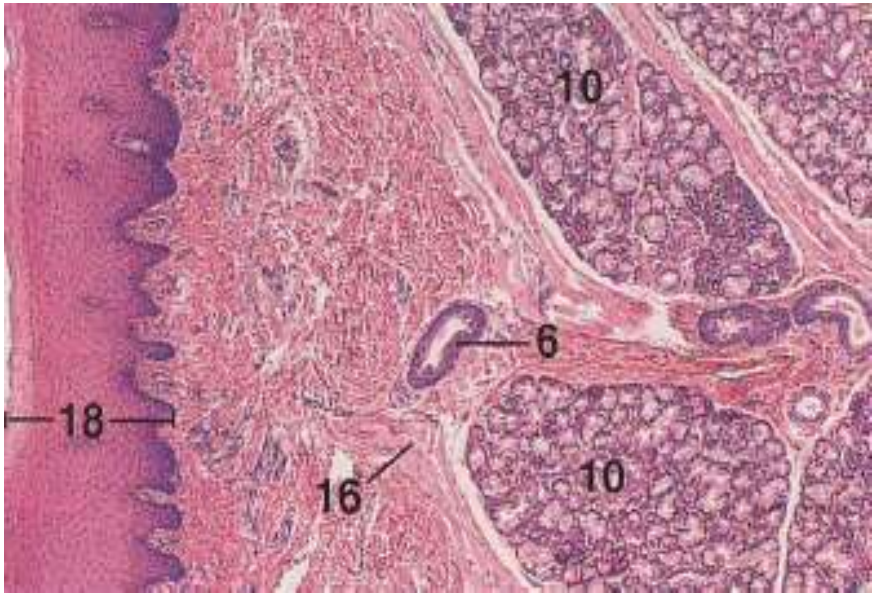
Lips :

- *The junction between integument and digestive system occurs on the lips :*
- ** They covered on the outside by skin .*
- **The external aspect of the lip is covered with thin skin and is associated with sweat glands , hair follicles and sebaceous glands , the lamina propria and sub mucosa blend together , serous or seromucous minor salivary gland are distributed in the sub mucosa .*
- ** Lined on the inside by mucous membrane (stratified squamous epithelium keratinized in the ruminant and horse , and non keratinized in the dog and pig .*
- **The transitional zone (vermilion zone) pink region of lips which also covered by thin skin and devoid of sweat gland and hair follicles occasional non functional sebaceous gland are present, this region derives its color from the richly vascular dermis . Also can be heavily melanized.*
- *The core of lip is composed of striated skeletal muscle fibers (orbicularis oris muscle), that are responsible for lip motility .*

lips

The external aspect and the transitional zone

Internal aspect

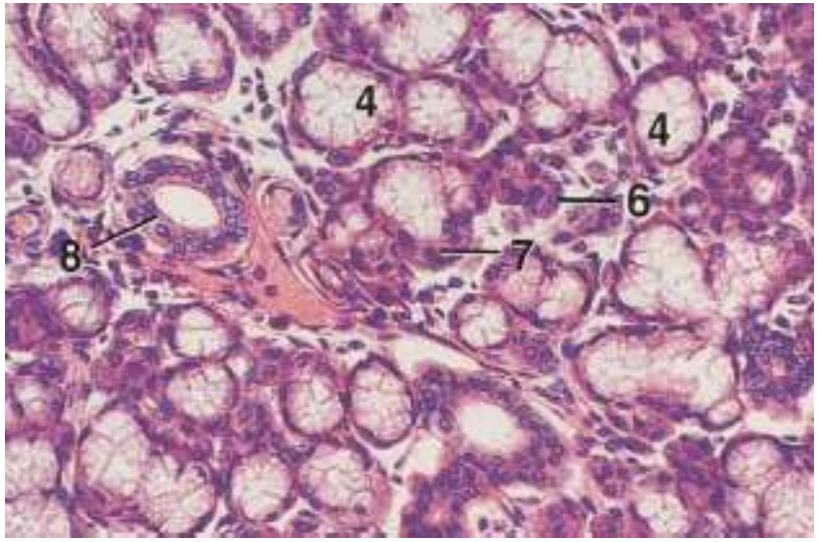


Salivary glands :

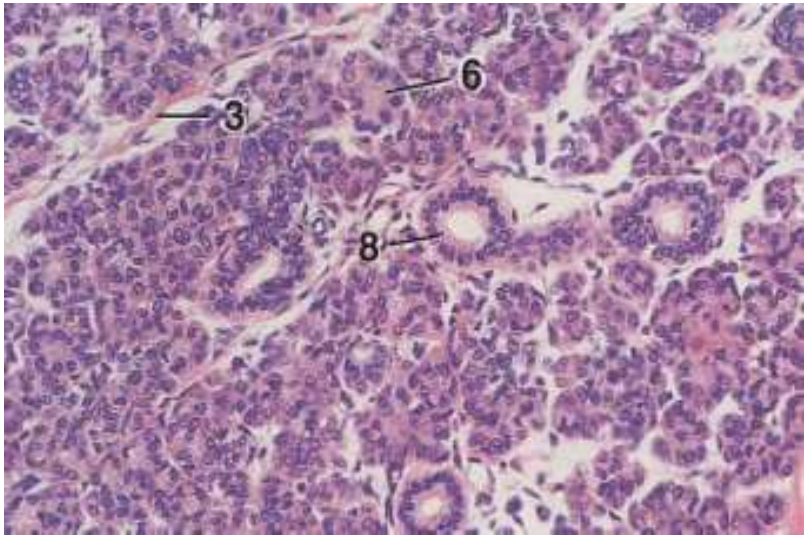
- *Are compound tubuloacinar exocrine glands . They secrete enzyme or mucous or seromucous (mixed glands) .*
- *The secretary component of each gland is the parenchyma and the supporting connective tissue is the stroma.*
- *In mixed salivary gland the serous and mucous units may be separate or the serous cell may form distinctive cap on one side of mucous unite as a serous demilune .*
- *The serous cell is columnar with central nucleus and basal basophilic caused by presence of rough endoplasmic reticulum .*
- *The mucous cell is triangular with basal flattened nucleus and pale staining vacuolated cytoplasm.*
- *Specialized epithelial cells , the myoepithelial or basket cells are capable of contracting these lie between the secretary cells and basement membrane .*

Salivary glands

mixed

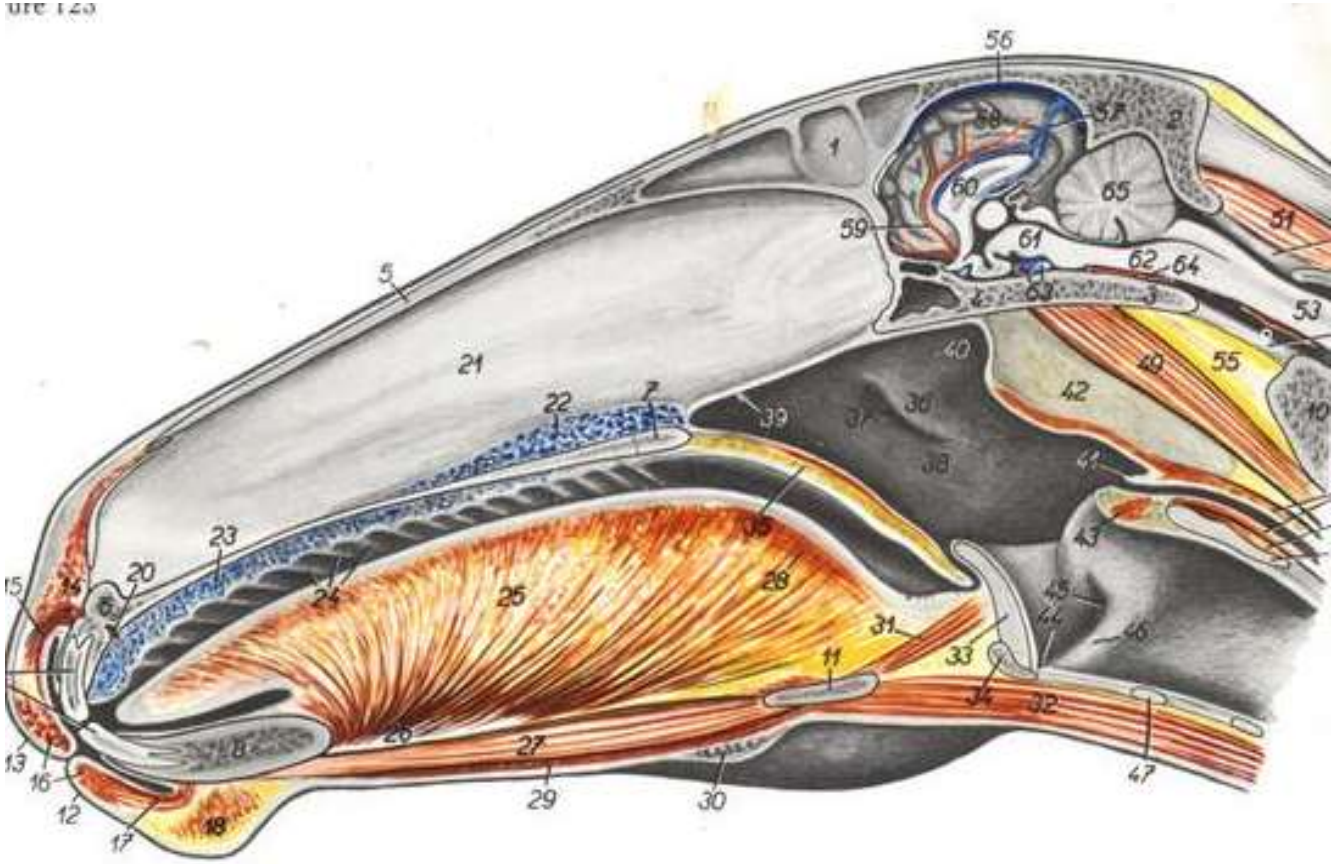


serous



Palate:

- *The hard palate is lined with stratified squamous epithelium ,the lamina propria continuous with the underlying Periosteum .*
- *The oral surface of the soft palate is also lined with stratified squamous epithelium ,but the lamina propria has mucous secreting gland and lymphatic nodules*
- *The nasal surface is covered by respiratory epithelium (pseudo stratified columnar epithelium).*



Sagitale section of equin head

Tongue:

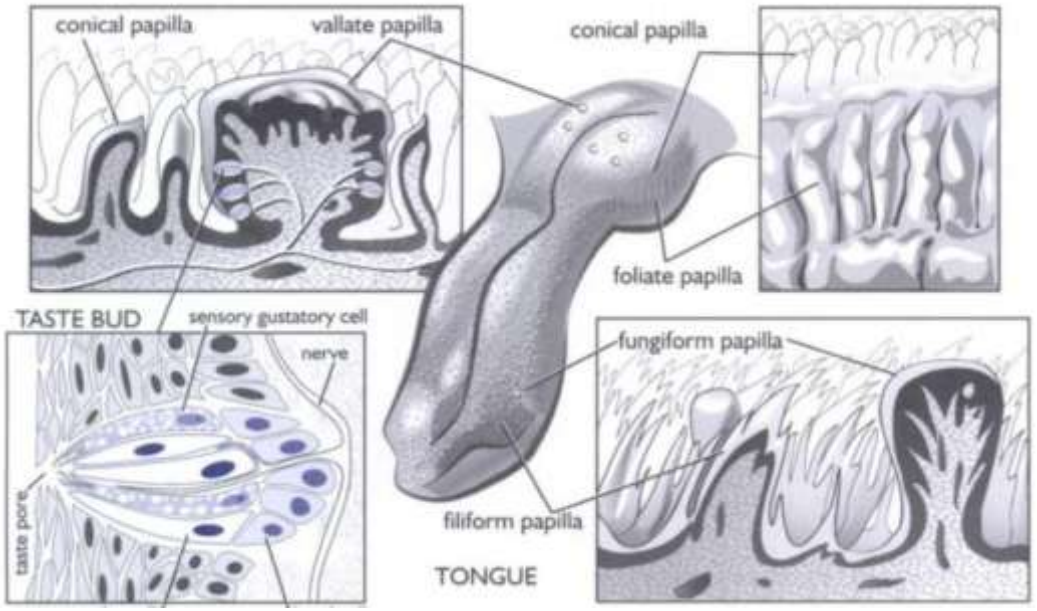
- *The bulk of the tongue is made up of interlacing bundles of skeletal muscle fibers and loose connective tissue , the mucous membrane on The ventral surface consist of non keratinized stratified squamous epithelium with lamina propria.*
- *The dorsal surface of the anterior part of the tongue , where the epithelium is keratinized is rough , the lamina propria is raised in small projection which called lingual papillae .*

The tongue papillae :

- *The filiform , conical , lenticular , papillae are non sensory and are heavily keratinized . The circumvallate , fungi form and foliate papillae are sensory and are associated with small salivary glands in the lamina propria , the taste buds can be found in the lateral walls , the circumvallate papilla is surrounded by a vallum and his level with the surface of tongue .*
- *The fungi form papilla is as the term suggests mushroom shaped with narrow base is partly or non keratinized and project above the surface of tongue .*
- *The foliate papilla is large , non keratinized and leaf like and is crossed by transverse furrows and appears in section as a row of fungi form .*

Taste bud:

Its epithelial structures associated with the terminal fibers of facial and glossopharangeal nerves , within each bud is a taste pore which opens onto the surface of the tongue and a taste chamber lined with a taste receptor and sustenticular cells . food dissolved in the salivary gland secretion passes into the reservoir of the taste chamber . The lingual tonsil is a localized mass of lymphoid tissue that is often present in the base of tongue .



Lyssa of the tongue :

Is a cord like structure enclosed in dense collagenous sheath and extends near the ventral surface of the center of tongue . the lyssa of the dog and pig are filled with adipose tissue , striated muscle , blood vessels and nerves ,in cat filled with fat , while in horse consist of fibro elastic cord with hyaline cartilage , striated muscle and fat . And is middorsal orientation .