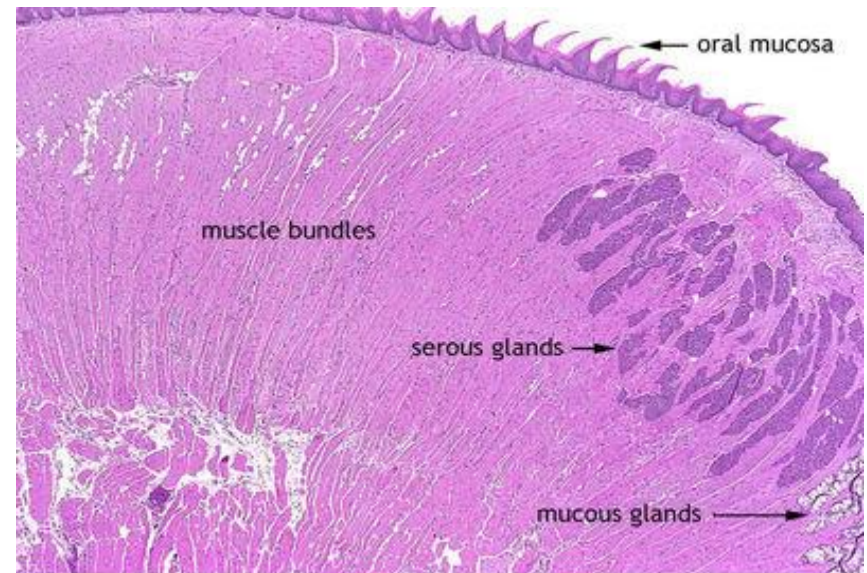
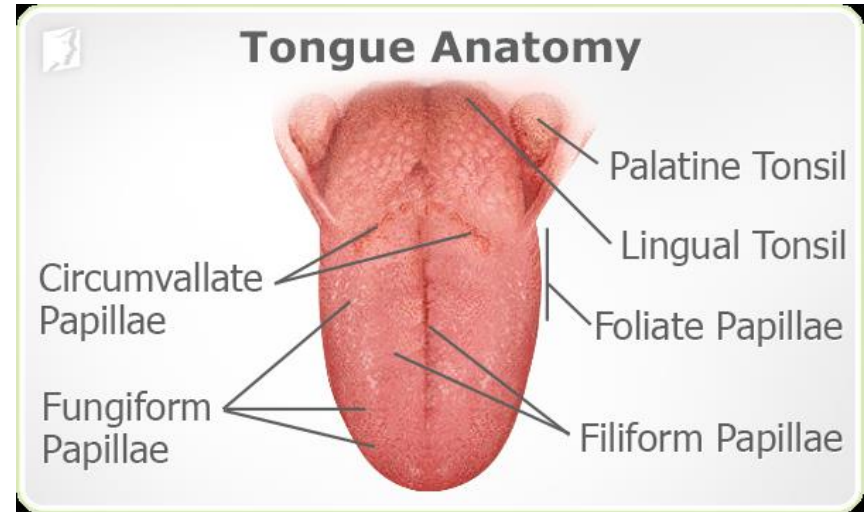
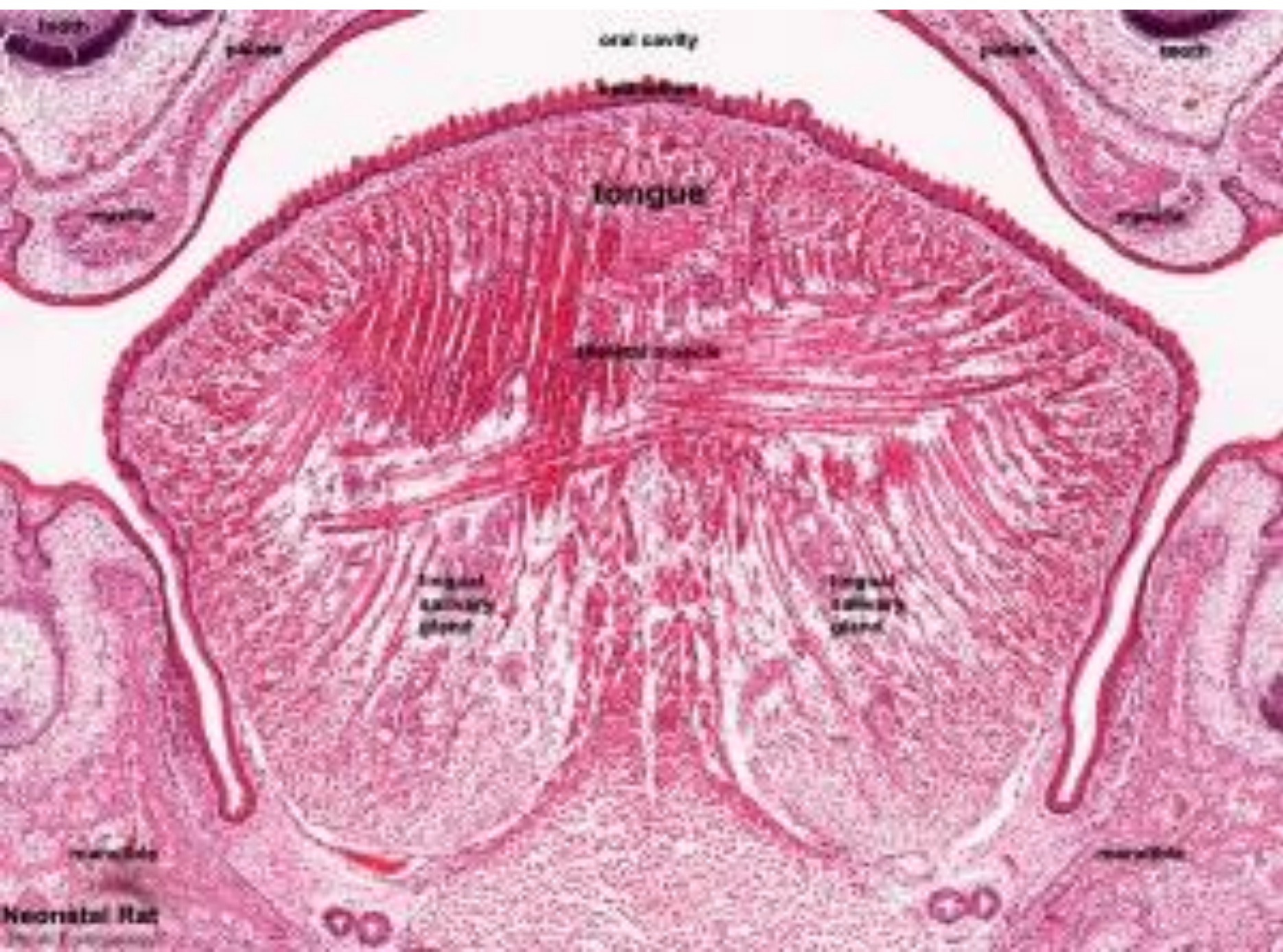


Histology of Tongue and Salivary Glands

Tongue

- An accessory digestive organ.
- Composed of skeletal muscle covered with mucous membrane.
- **Mucosa:**
- **Stratified squamous epithelium & lamina propria.**
- Sulcus terminalis divides the dorsal aspect of tongue into anterior 2/3rd and posterior 1/3rd part.

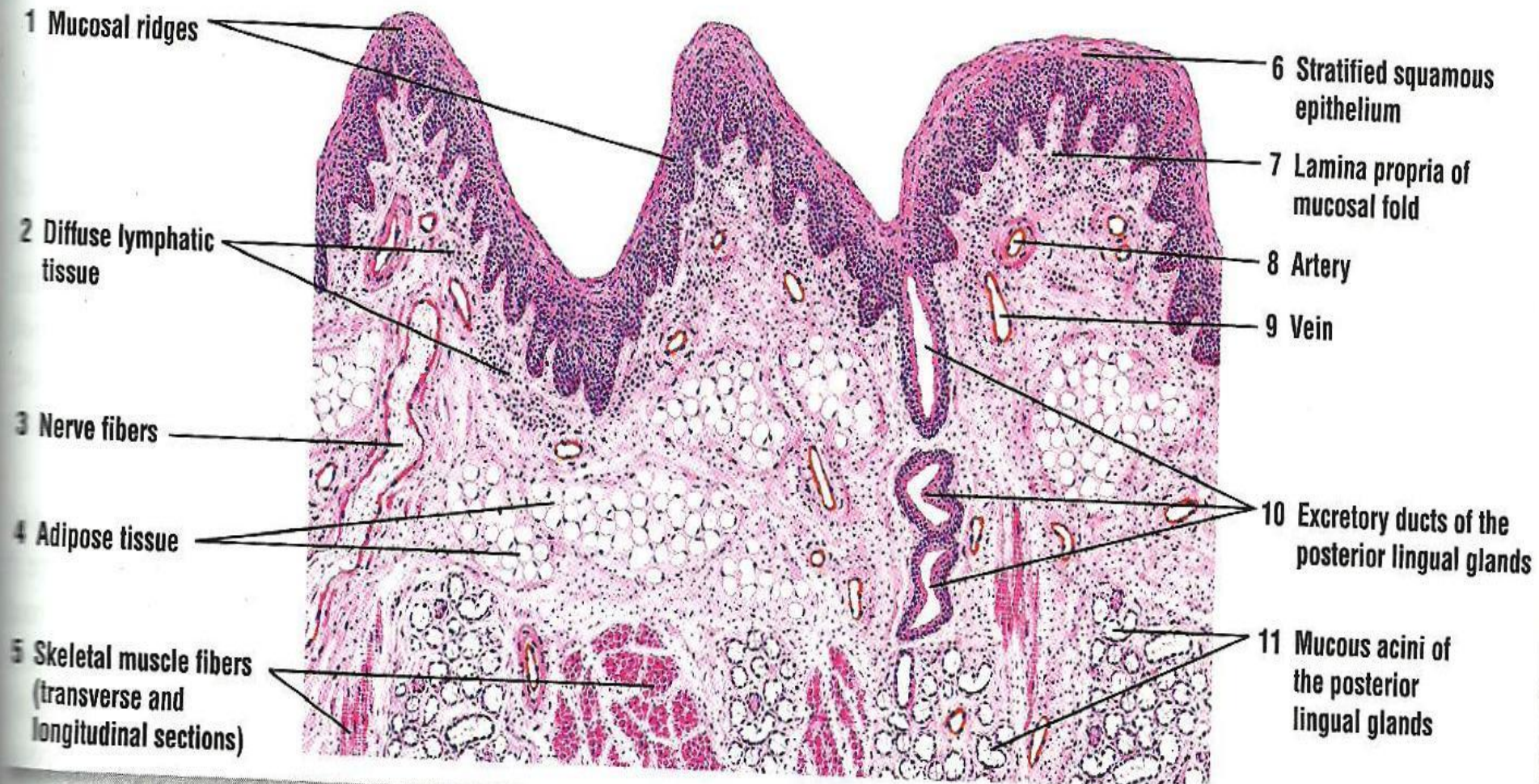




Tongue (Posterior Part)

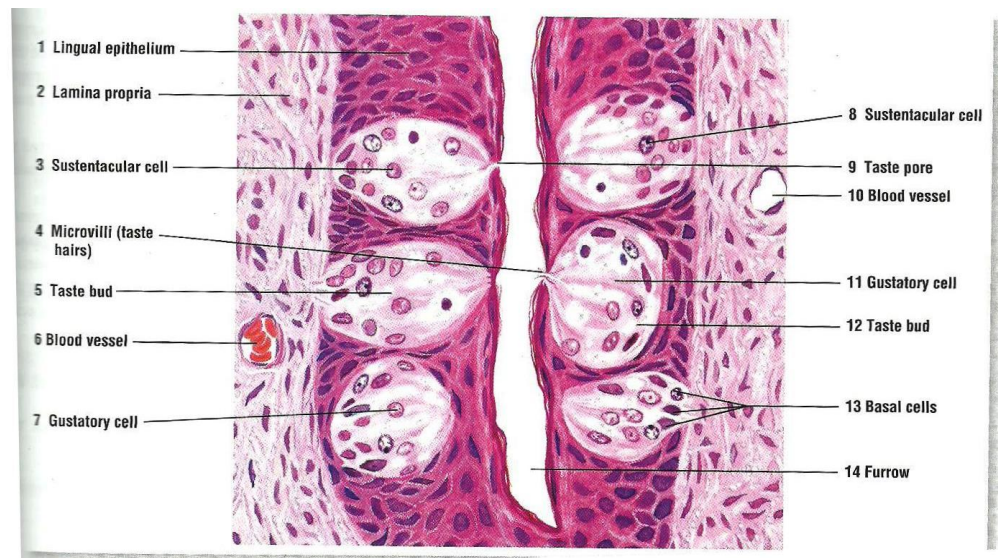
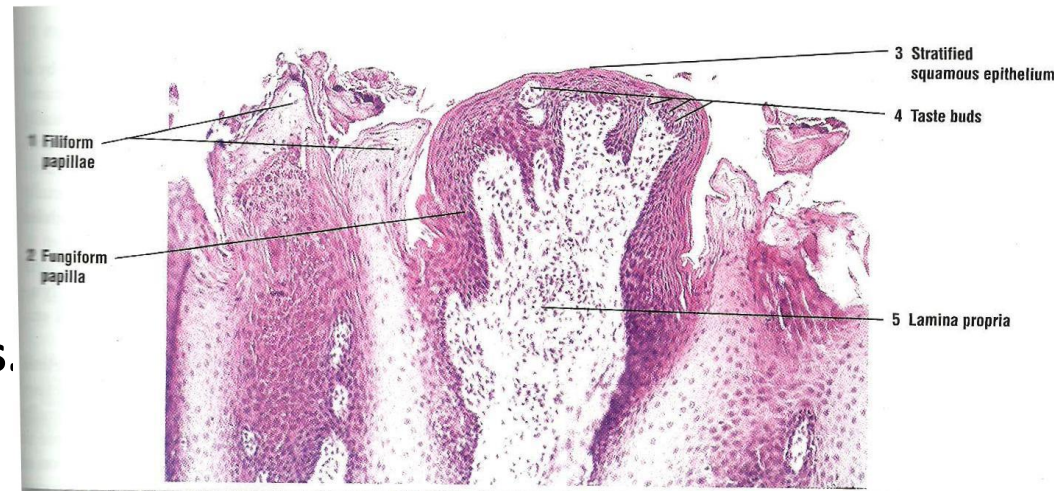
- No Filiform or fungiform papillae
- Large number of serous and mucinous glands and their ducts are present.
- **Lingual tonsil** – aggregates of lymphocytes and lymphoid follicles within lamina propria.
- Lymphatic follicles in the submucosa are collectively known as the lingual tonsil

Tongue (Posterior Part)



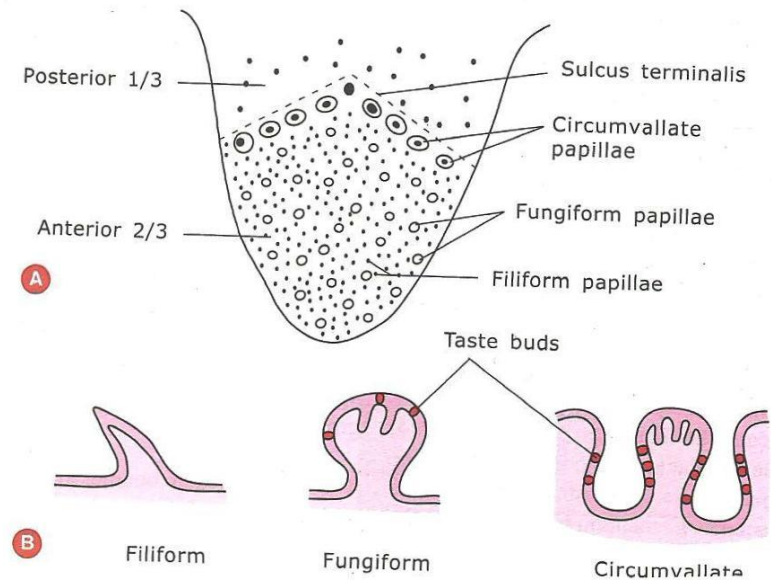
Lingual Papilla

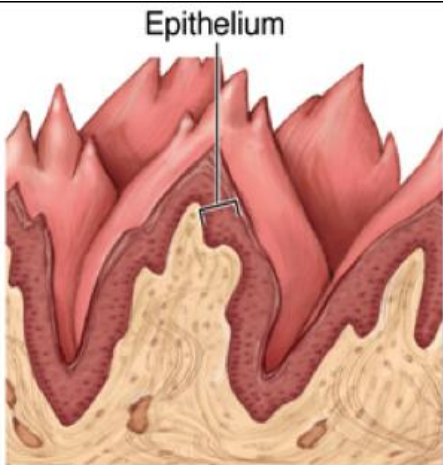
- **Lingual papilla:** projections of lamina propria covered with stratified squamous epithelium.
- May be keratinized.
- Many papillae contain **taste buds**.
- 4 types:
Filiform, fungiform, circumvallate and foliate.



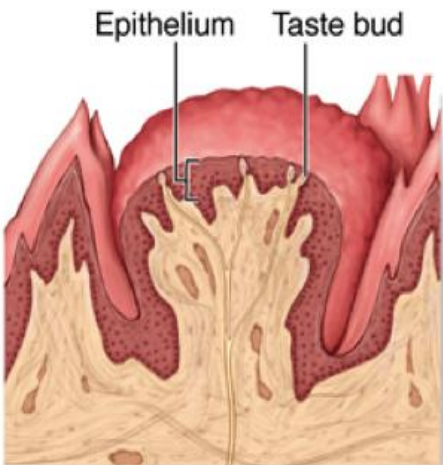
Types of Papillae

- **Filiform papilla:** most numerous, conical with keratinized tips, **no taste buds**.
- **Fungiform papilla:** mushroom shaped, highly vascularized connective tissue core, taste buds present.
- **Circumvallate papilla:** surrounded by a circular groove,
- Ducts of **serous glands of Von Ebner** open to this groove.
- **Foliate papilla:** not well developed in humans.

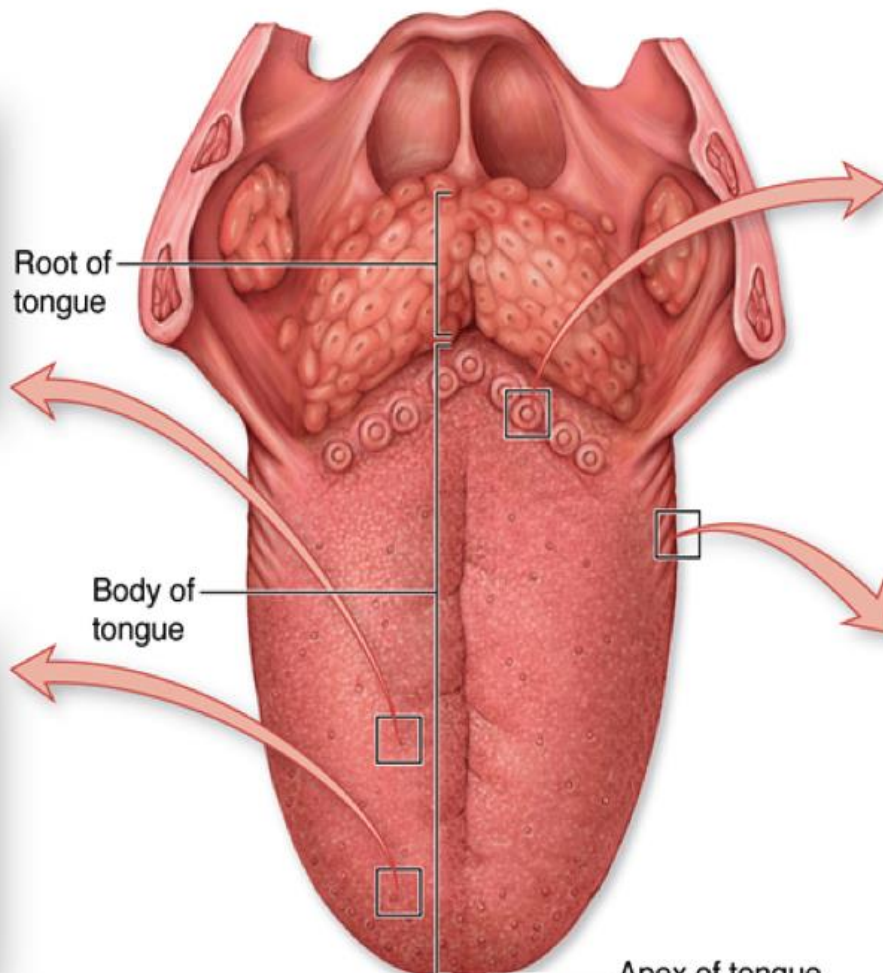




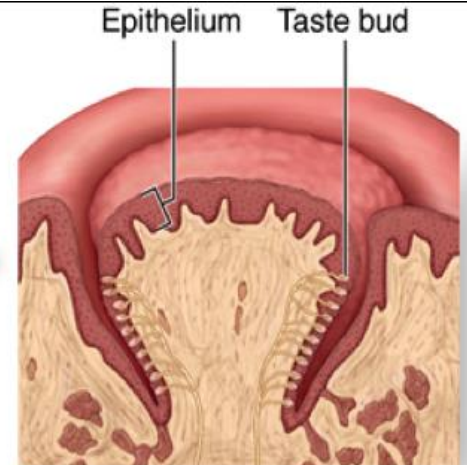
Filiform papilla



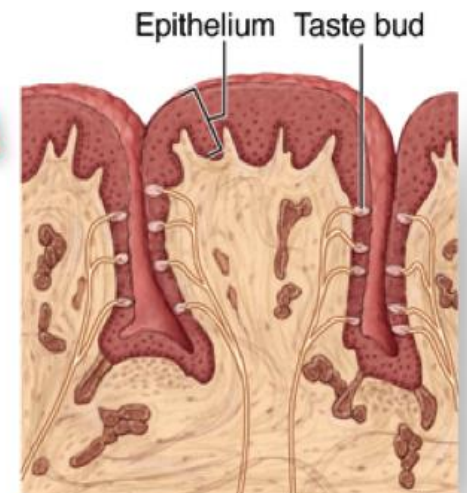
Fungiform papilla



Dorsal surface of tongue



Vallate papilla

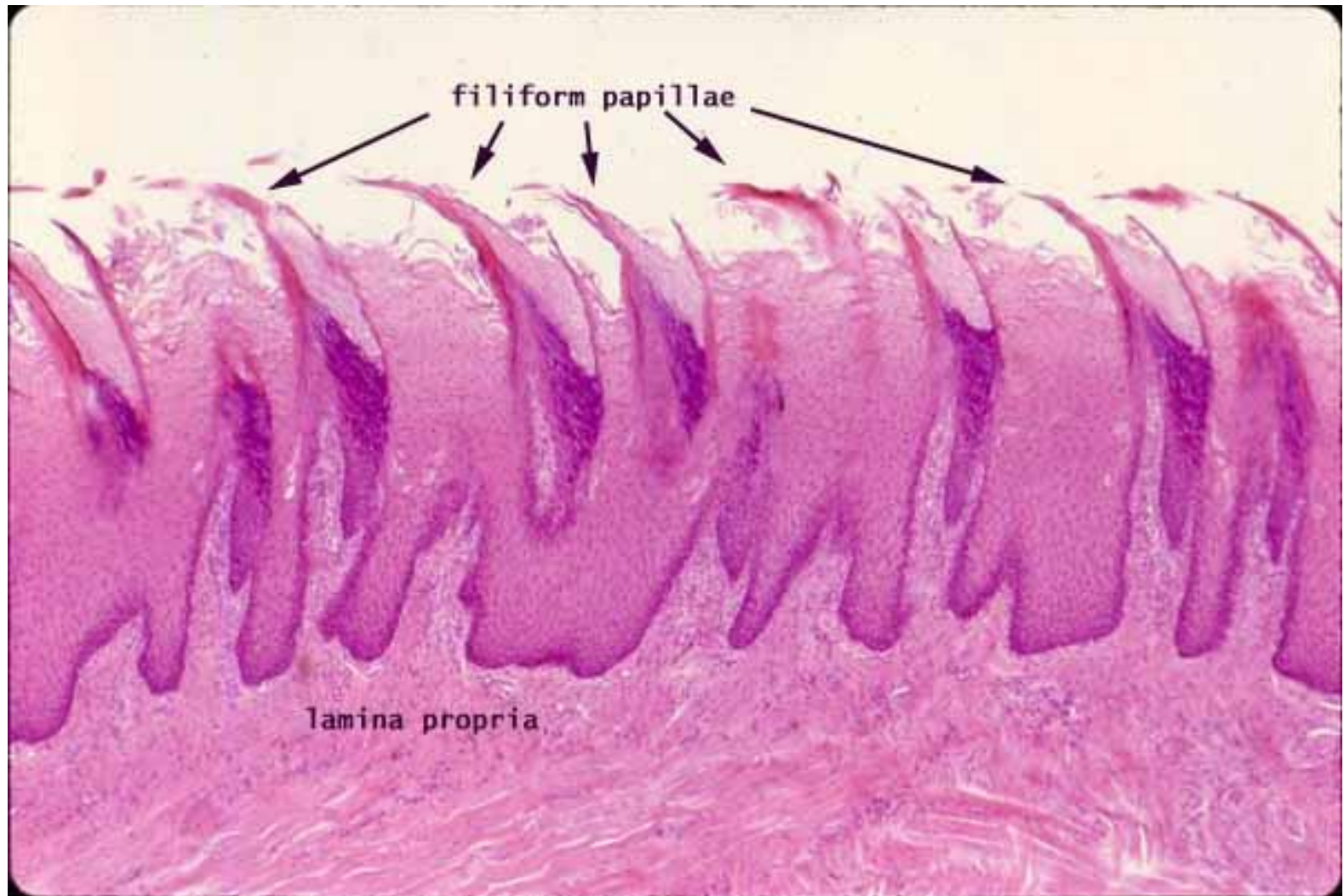


Foliate papilla

Filiform papilla

- Projections covered by an epithelium with a thick Keratin
- Composed of dense connective tissue core.
- Tapering structures- covered by keratin.
- **No taste buds**

Filiform papilla



Fungiform Papilla

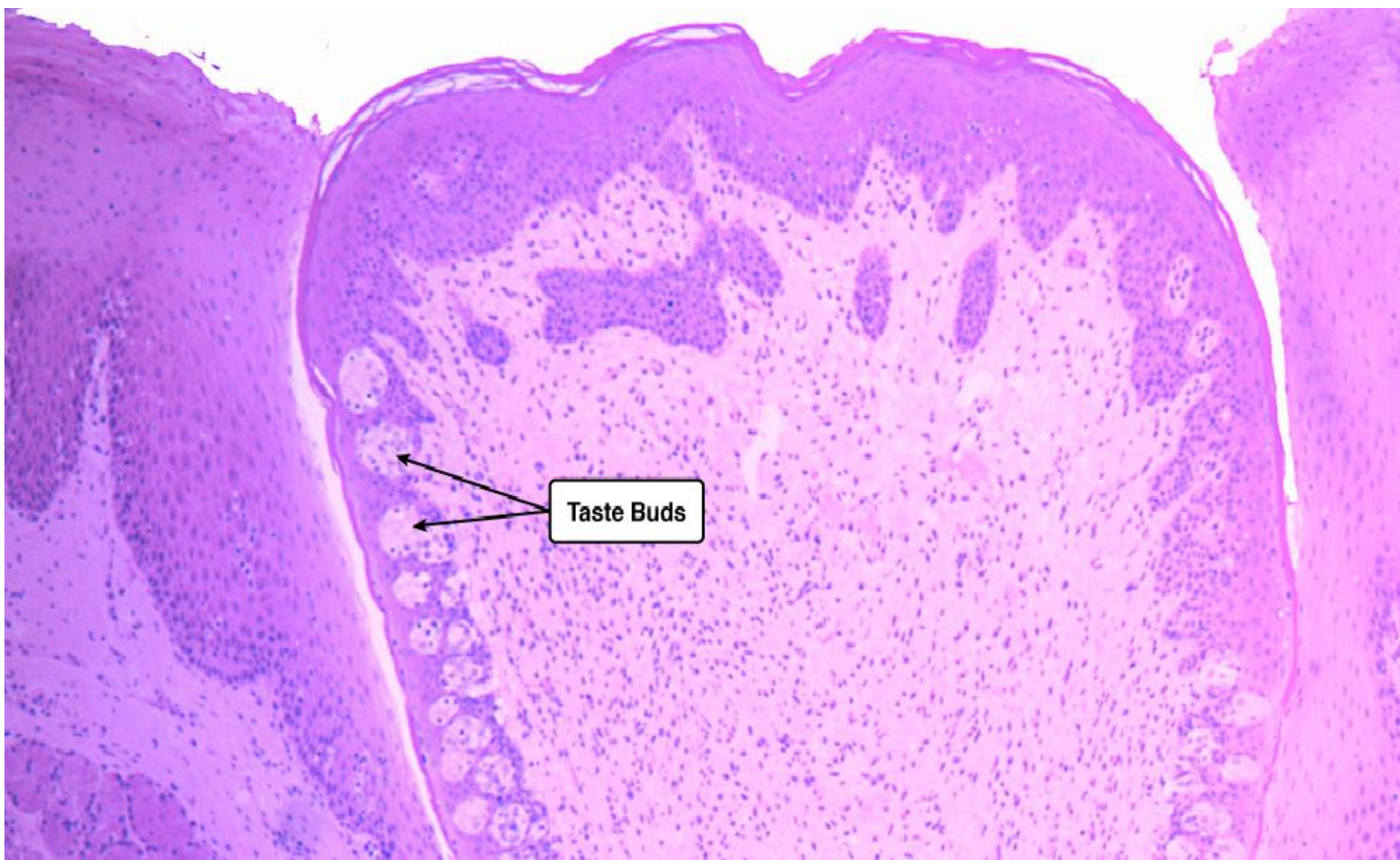
- Broader than Filiform
- Connecting tissue core inside.
- Covered by Non keratinized stratified squamous epithelium.
- Below epithelium dense lamina propria.
- Taste buds present.
- No mucus glands.

Fungiform Papilla



Circumvallate papillae

- 7–12
- Distributed in the V region
- Extremely large circular papillae
- Flattened surfaces
- Extend above the other papillae.
- Numerous serous (von Ebner's) glands drain their contents into the deep groove
- Great number(250) of **taste buds present** along the sides of these papillae



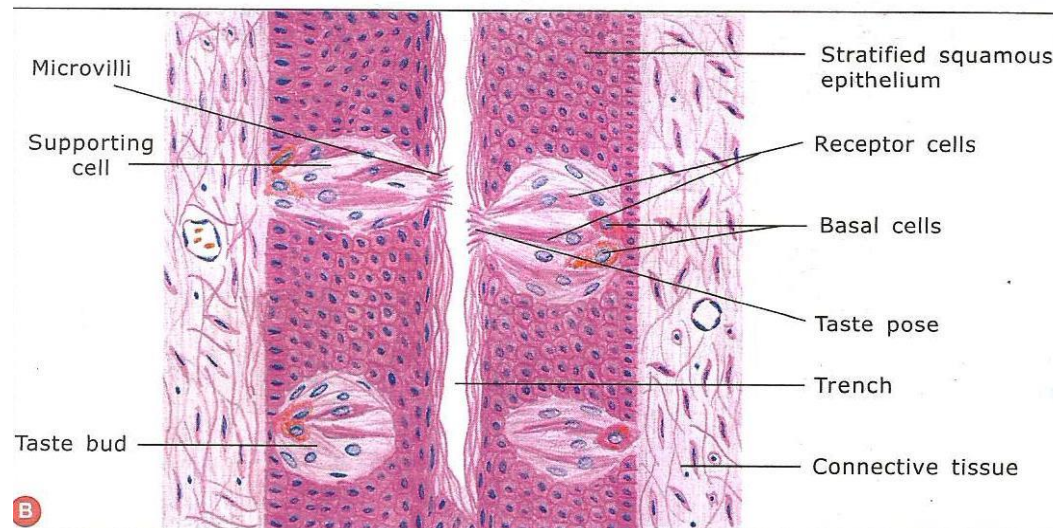
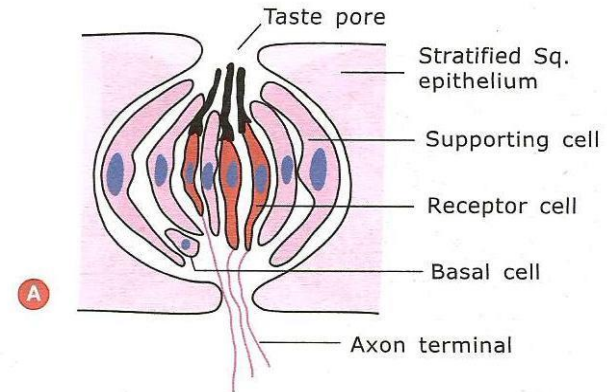
Taste Buds

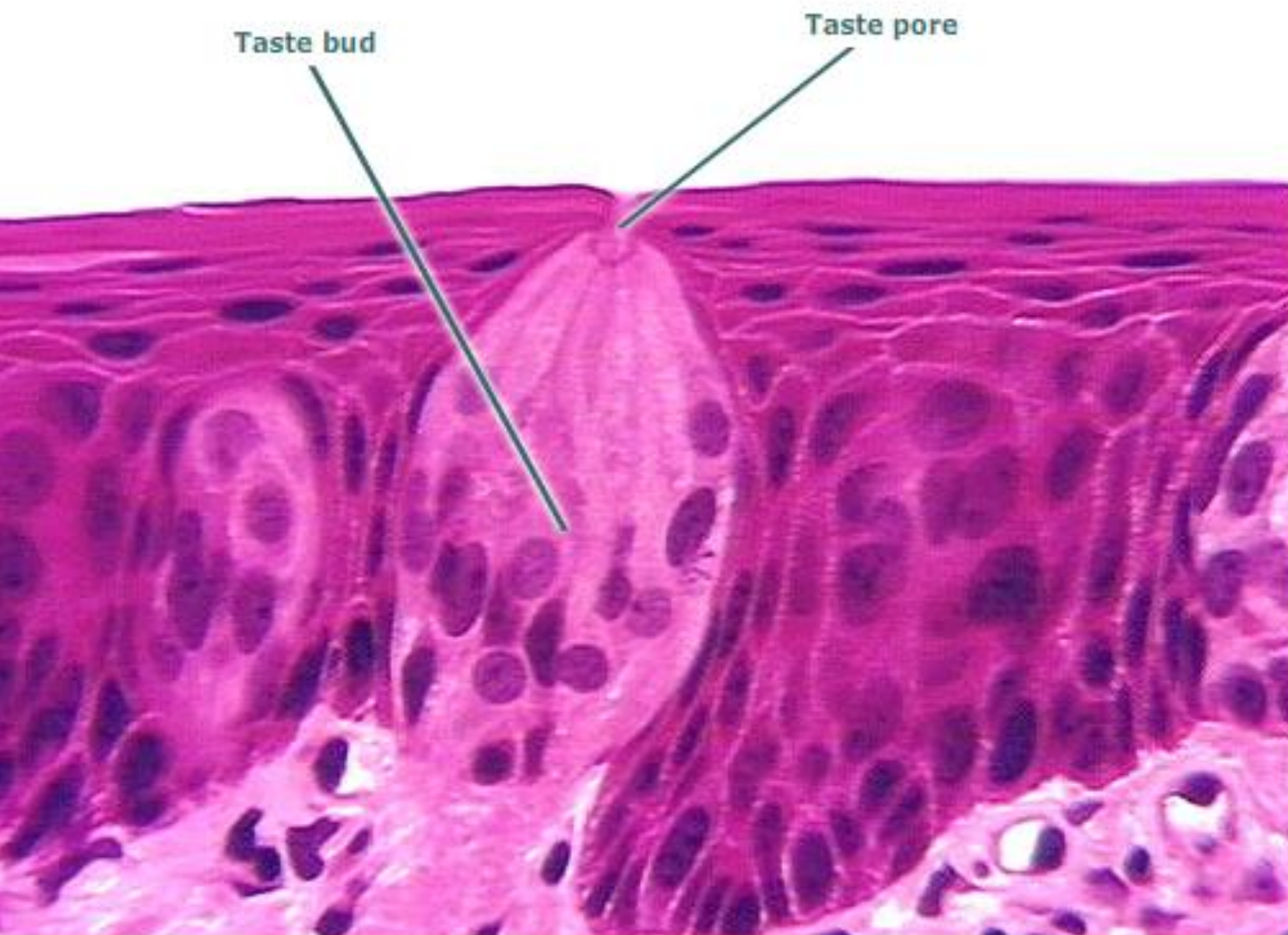
Circumvallate papilla

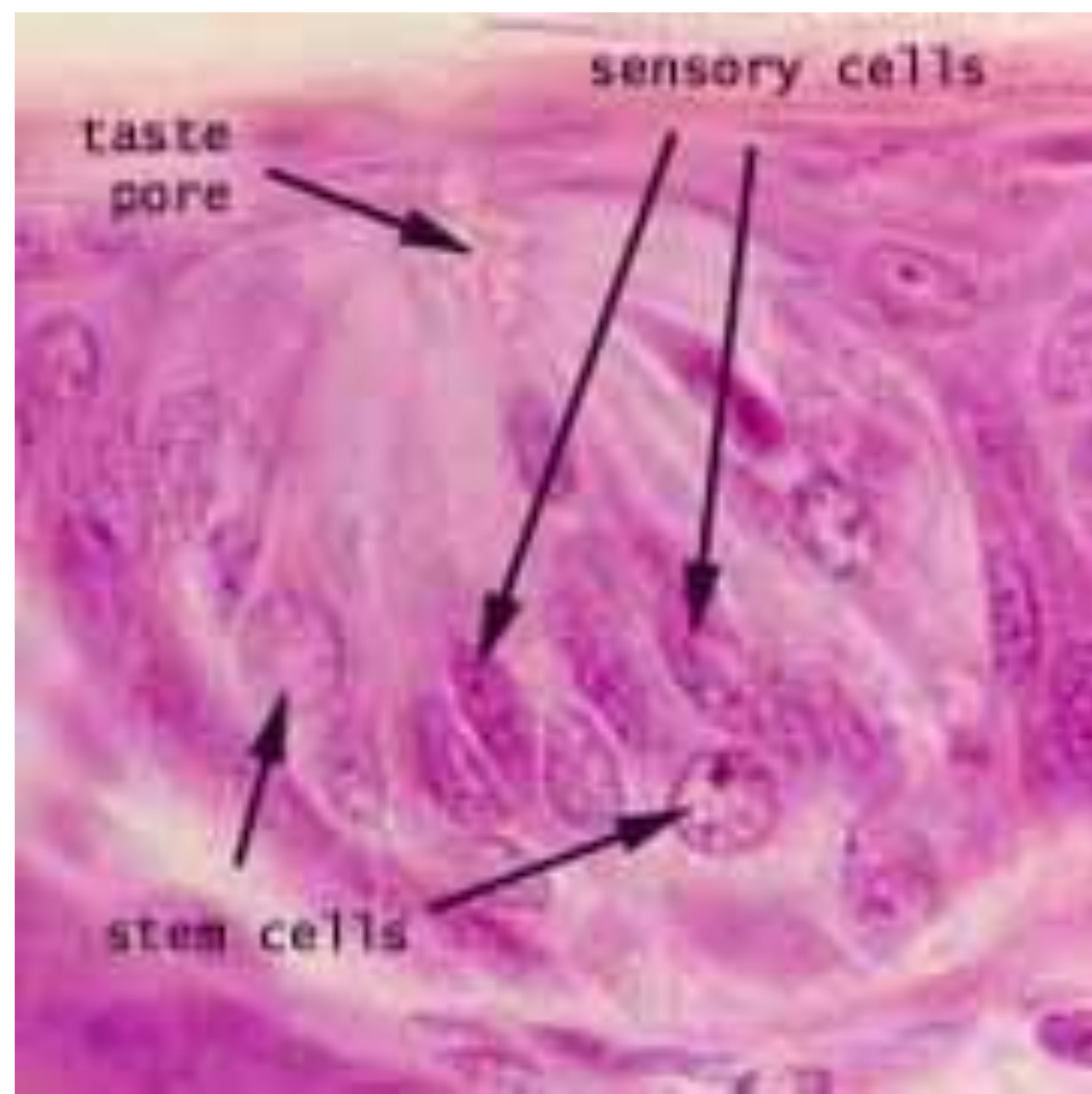


Taste Buds

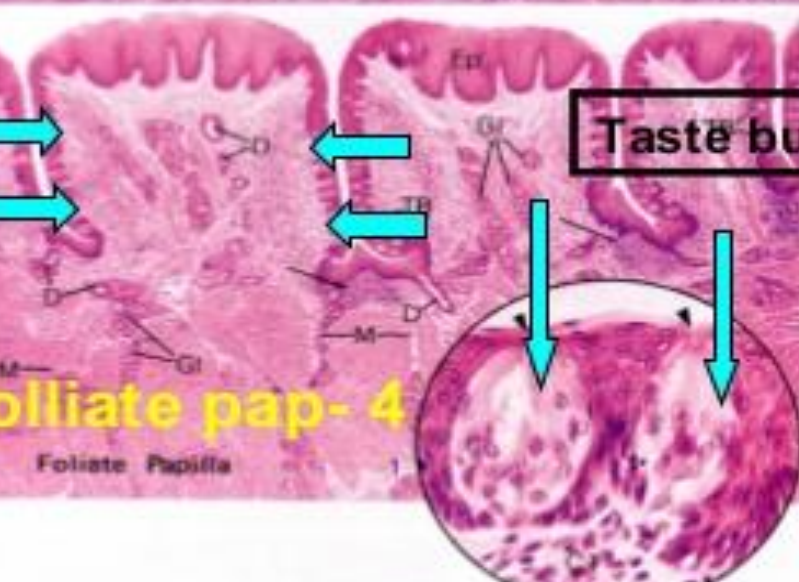
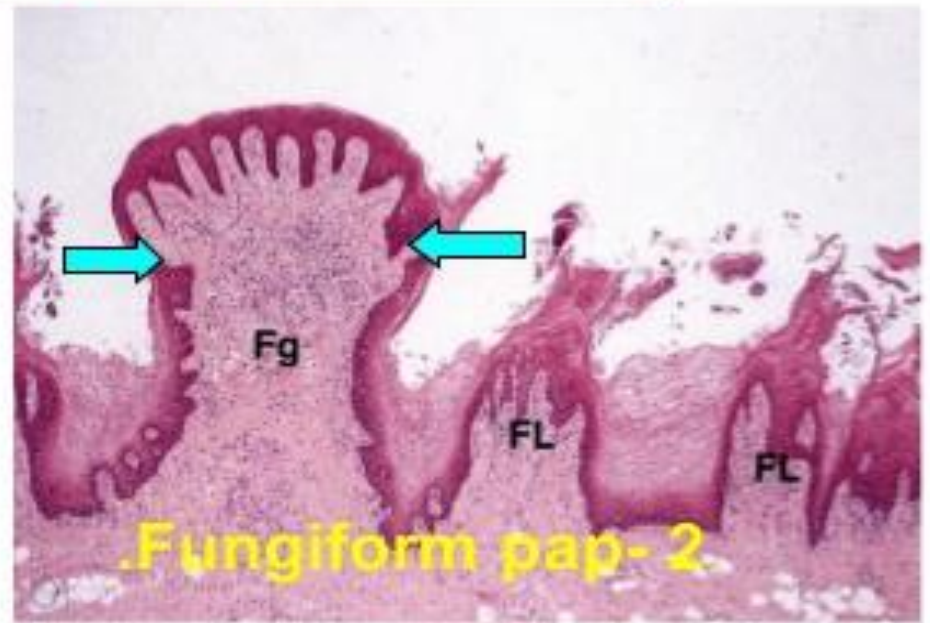
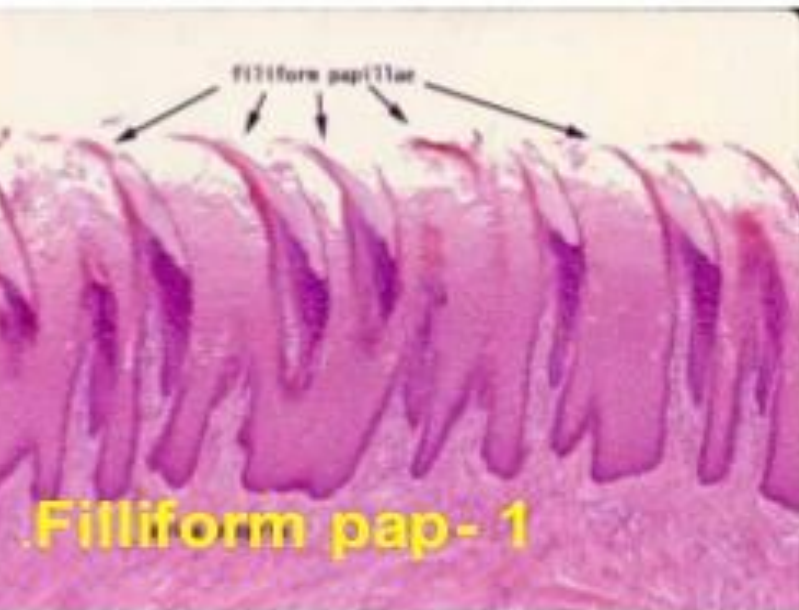
- Neurosensory epithelial structures embedded in the surface epithelium of fungiform and circumvallate papilla.
- Appear as onion-like, oval, pale staining structures.
- Extends through the full thickness of epithelium.
- Opens on the surface through **taste pore**.
- **3 types cells:** Receptor cells, supporting cells and basal cells.





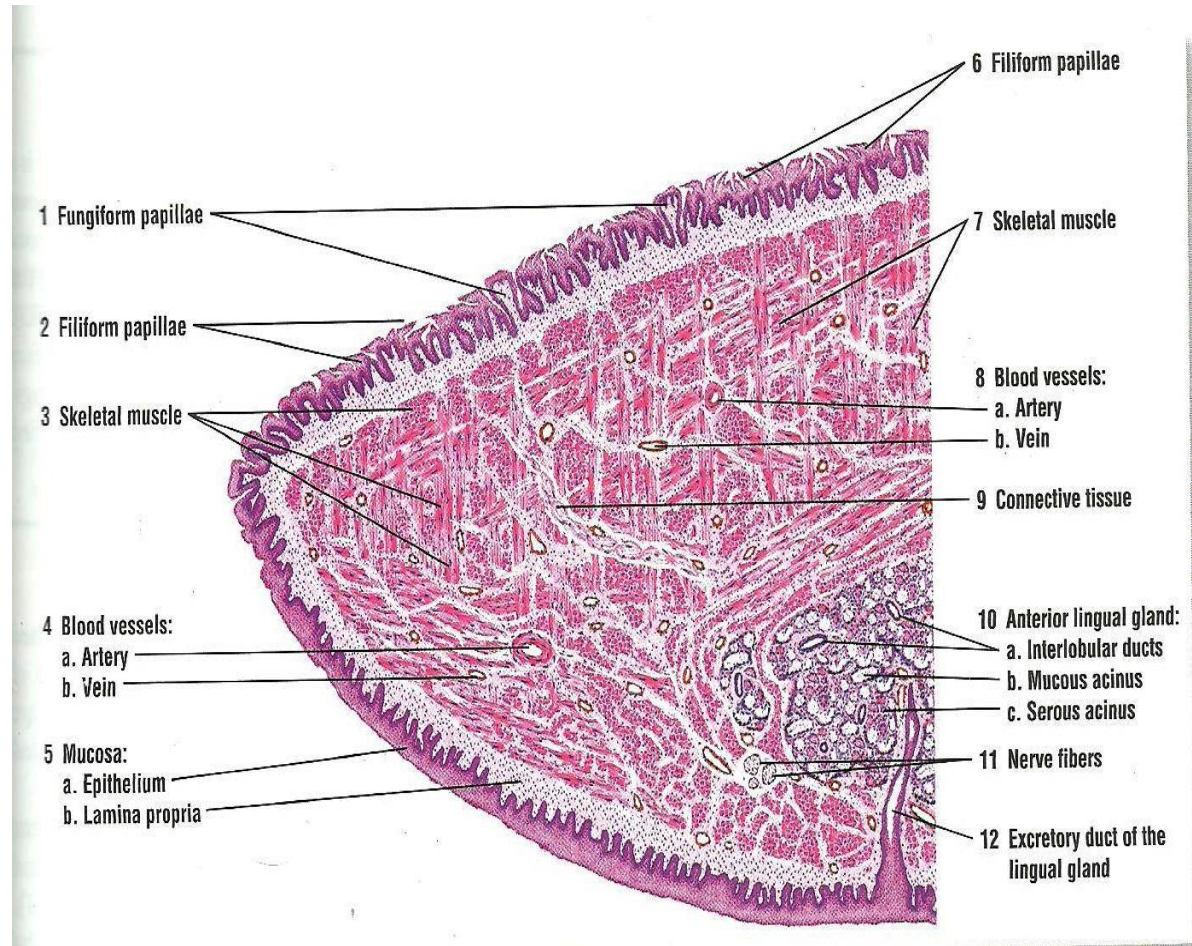


Tongue papillae



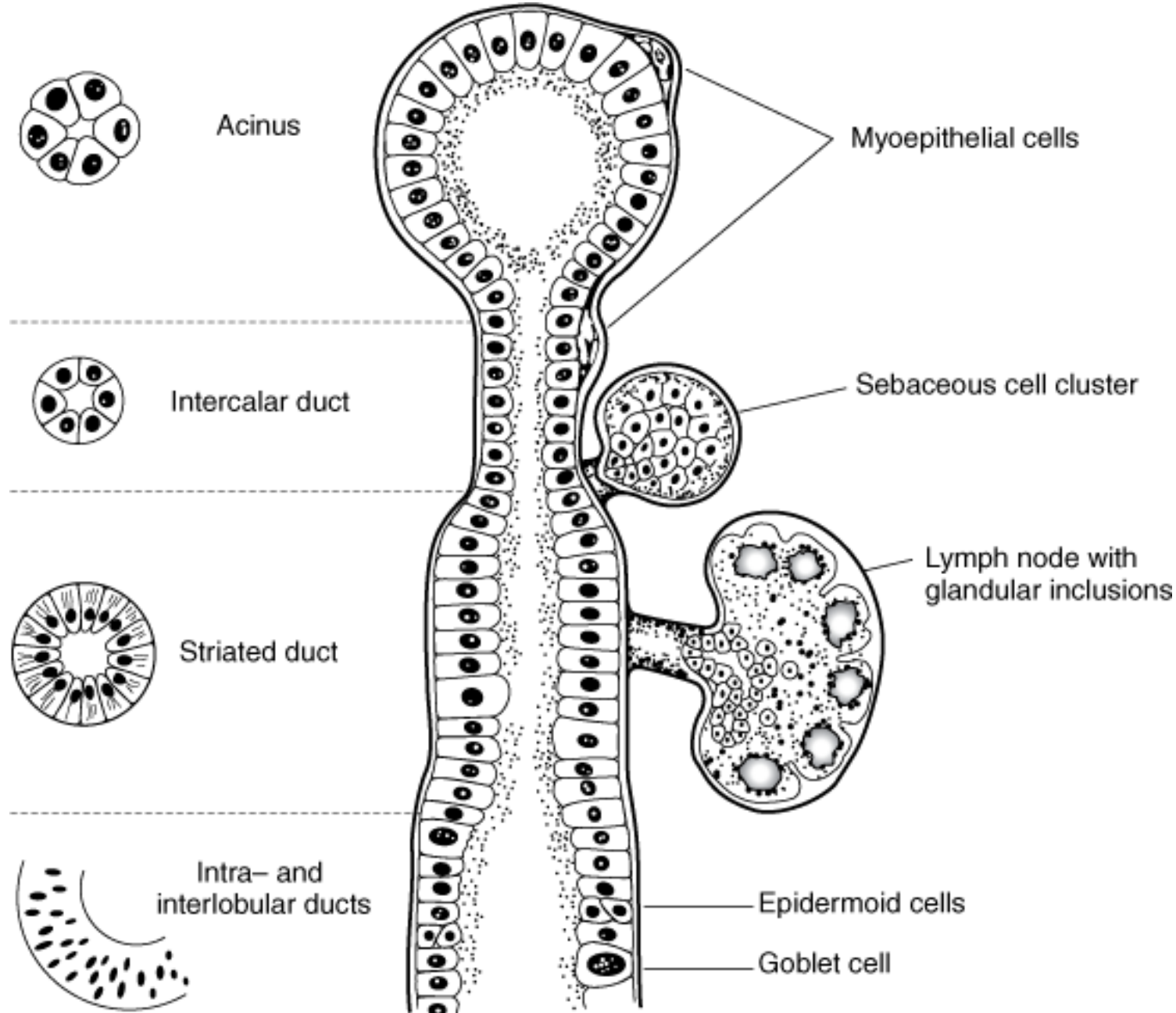
Muscles of the tongue

- Contains striated muscle.
- Muscle fibres are arranged in transverse, longitudinal and vertical bundles.
- Loose connective tissue, adipose tissue and lingual glands are present in between the muscle bundles.



Parotid gland

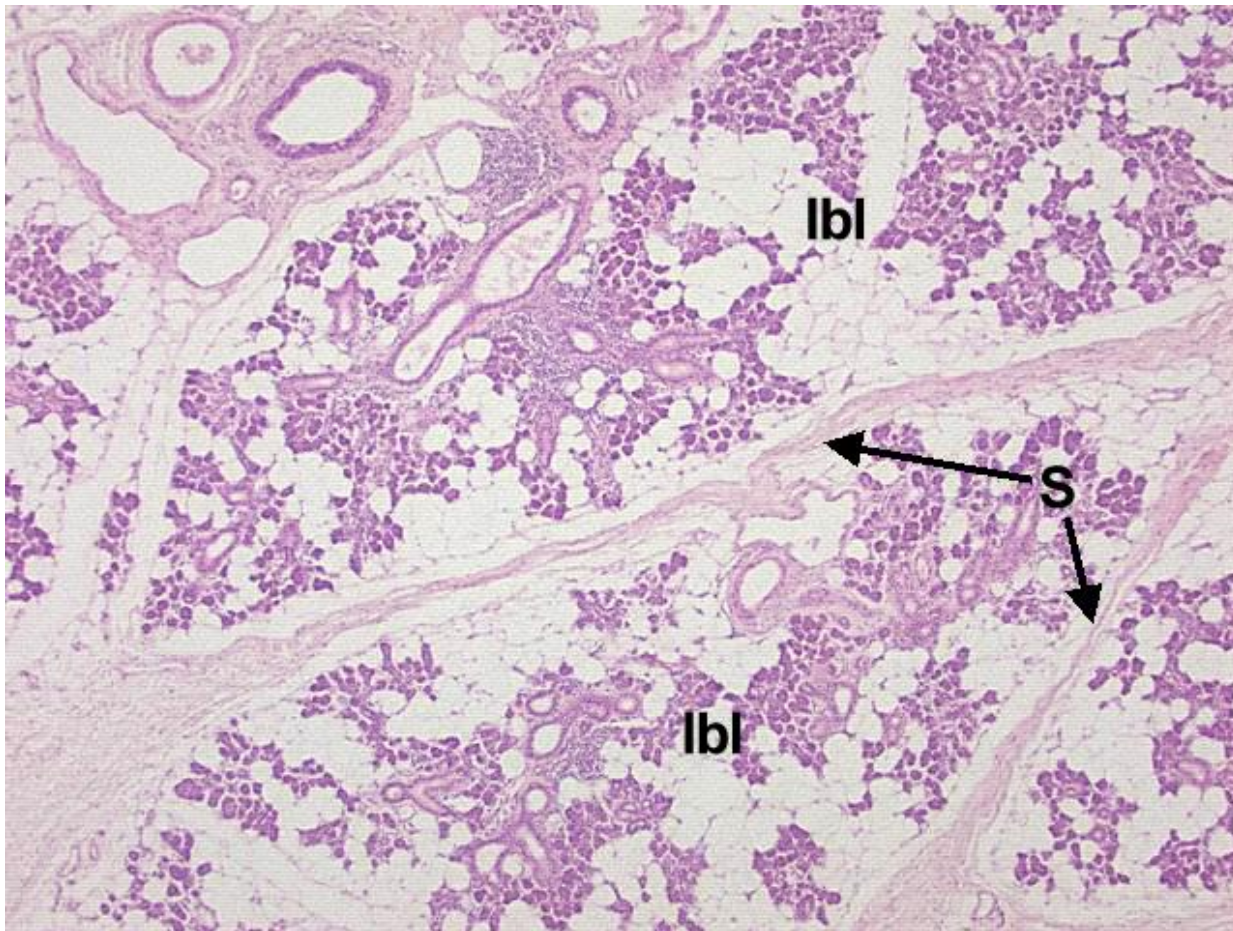
- In histological section following can be seen.
- Surrounding connective tissue capsule
- Multiple interlobular septa ,arising from capsule and divide gland into lobules.
- **Intralobular ducts** are located in **between the secretory acini within the lobules**
- Within interlobular septa ,**interlobular ducts** may be seen
- Interlobular ducts have large lumen, lined with cuboidal or columnar epithelium.



Source: Lalwani AK: *Current Diagnosis & Treatment in Otolaryngology — Head & Neck Surgery*, 2nd Edition: <http://www.accessmedicine.com>

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Parotid Gland



- Parotid Gland, (H & E).
- •lbl, lobule.
- •s, septa.

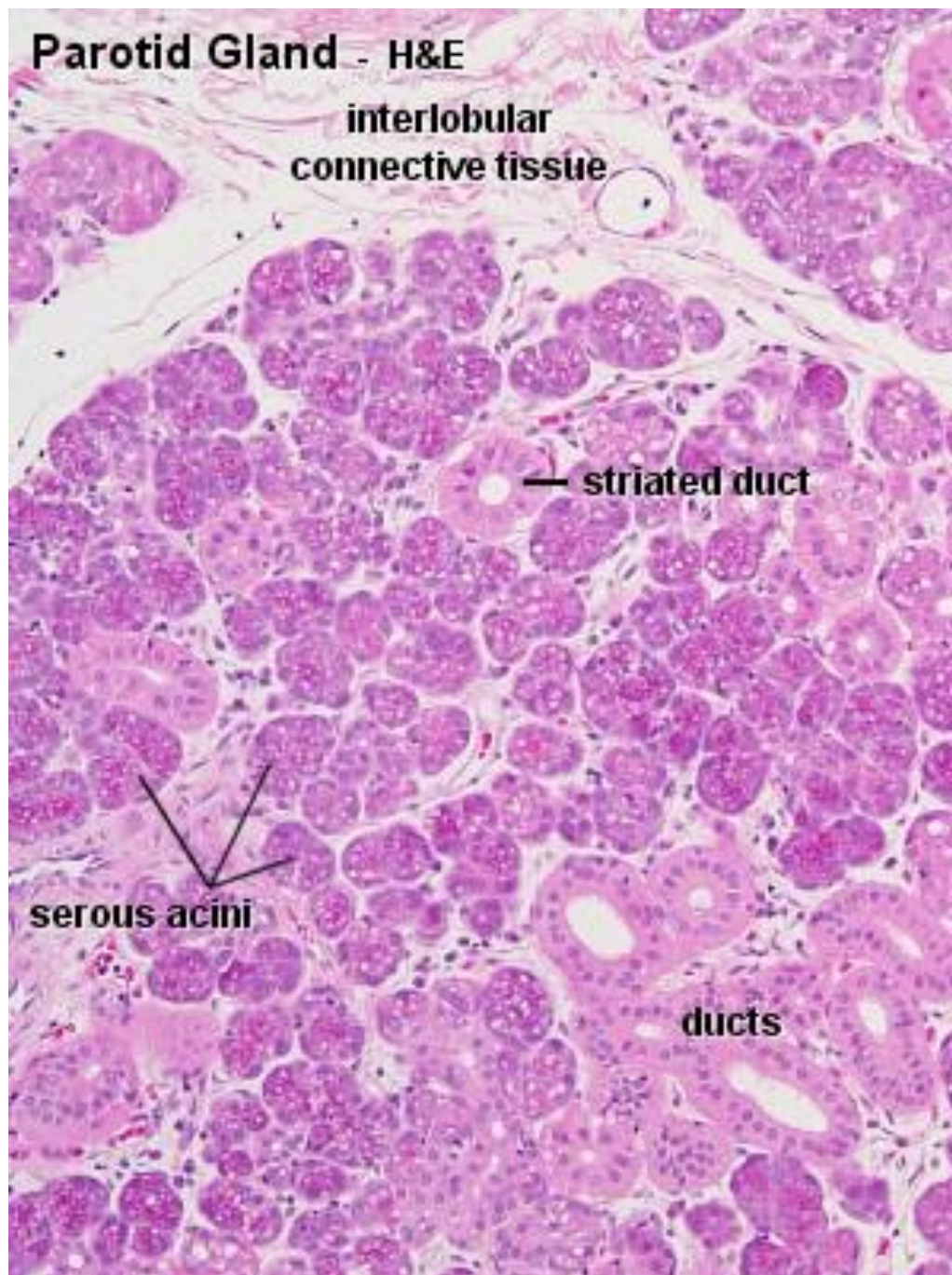
Parotid Gland - H&E

interlobular
connective tissue

— striated duct

serous acini

ducts



Parotid Gland

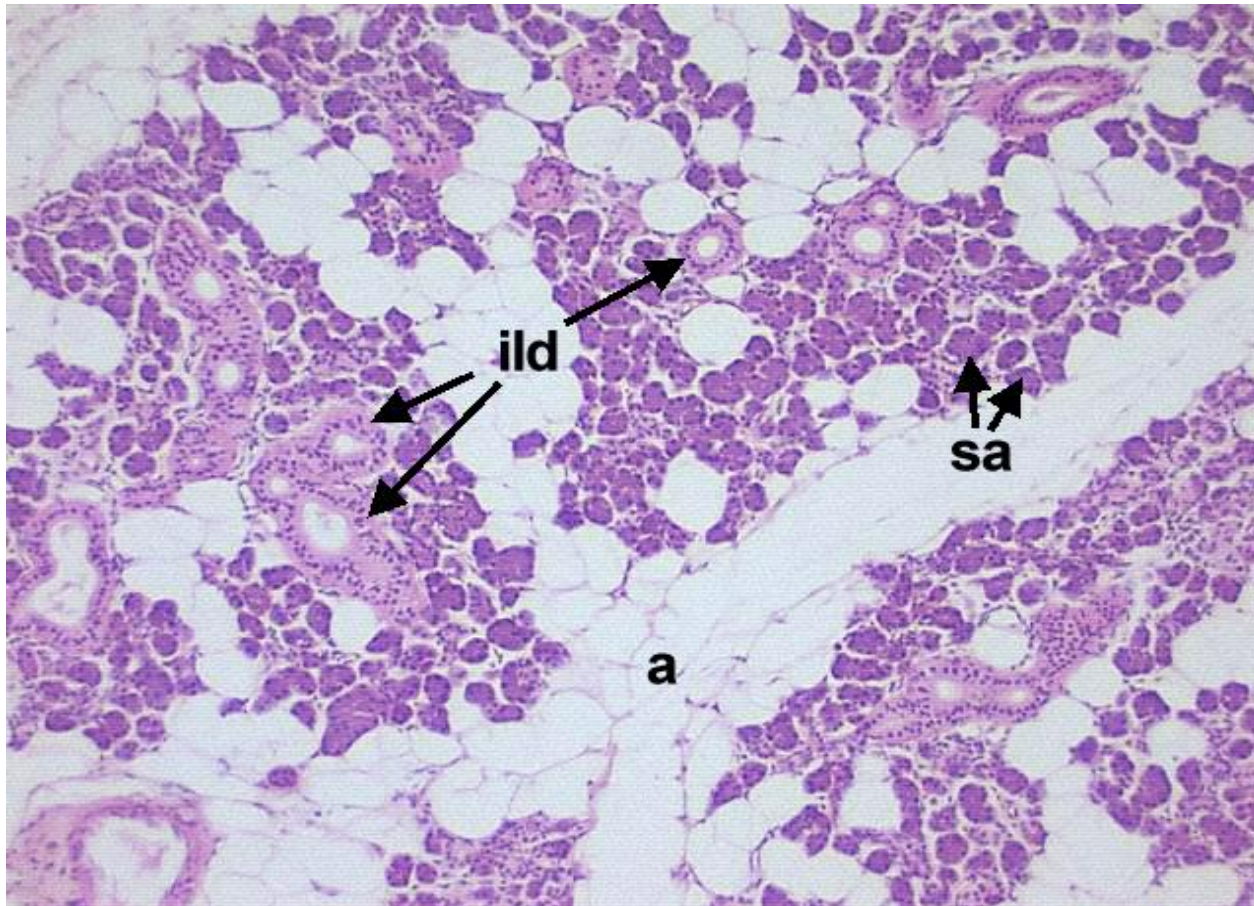
- **Serous acini**

- Lined by Basophilic cells
- Basophilic cytoplasm
- Rounded nucleus at base of the cell.

- **Intralobular ducts-**

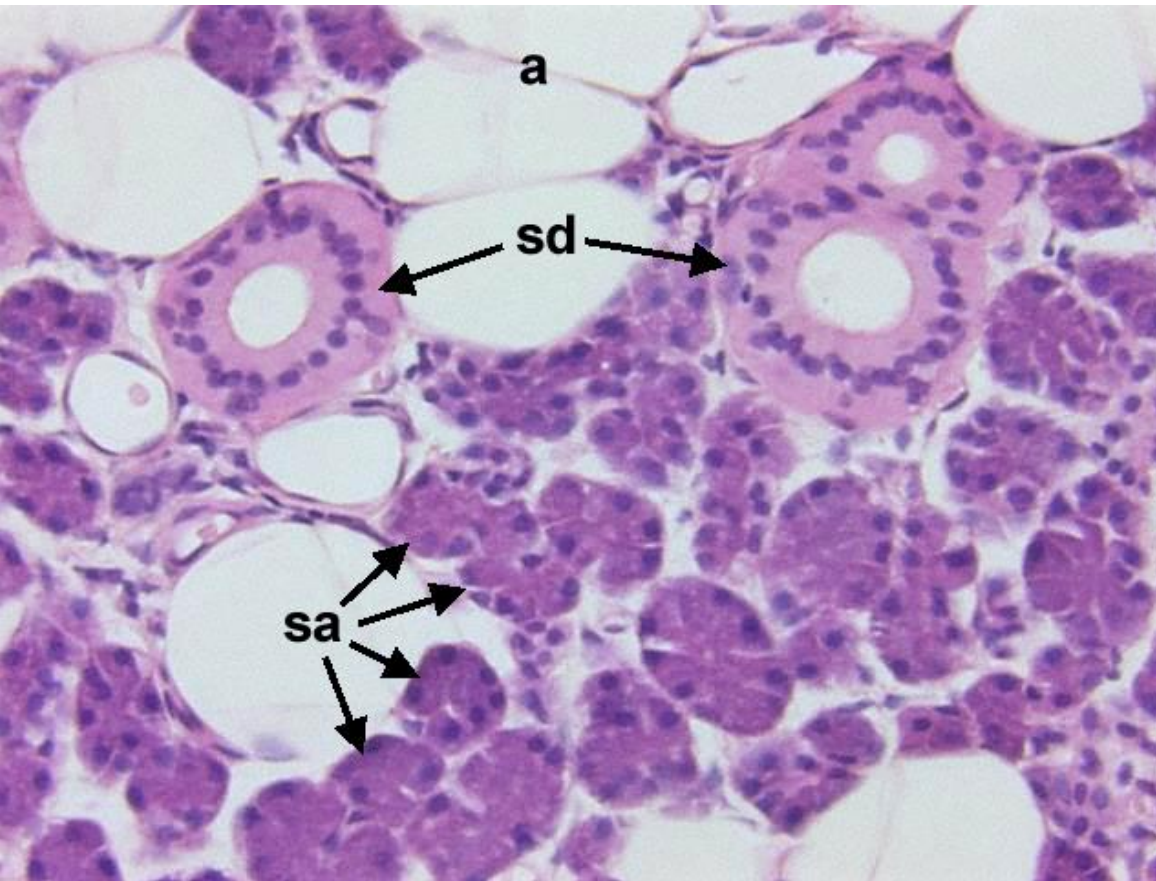
- Small
- Thin walled
- Lined by simple cuboidal epithelium

Parotid Gland



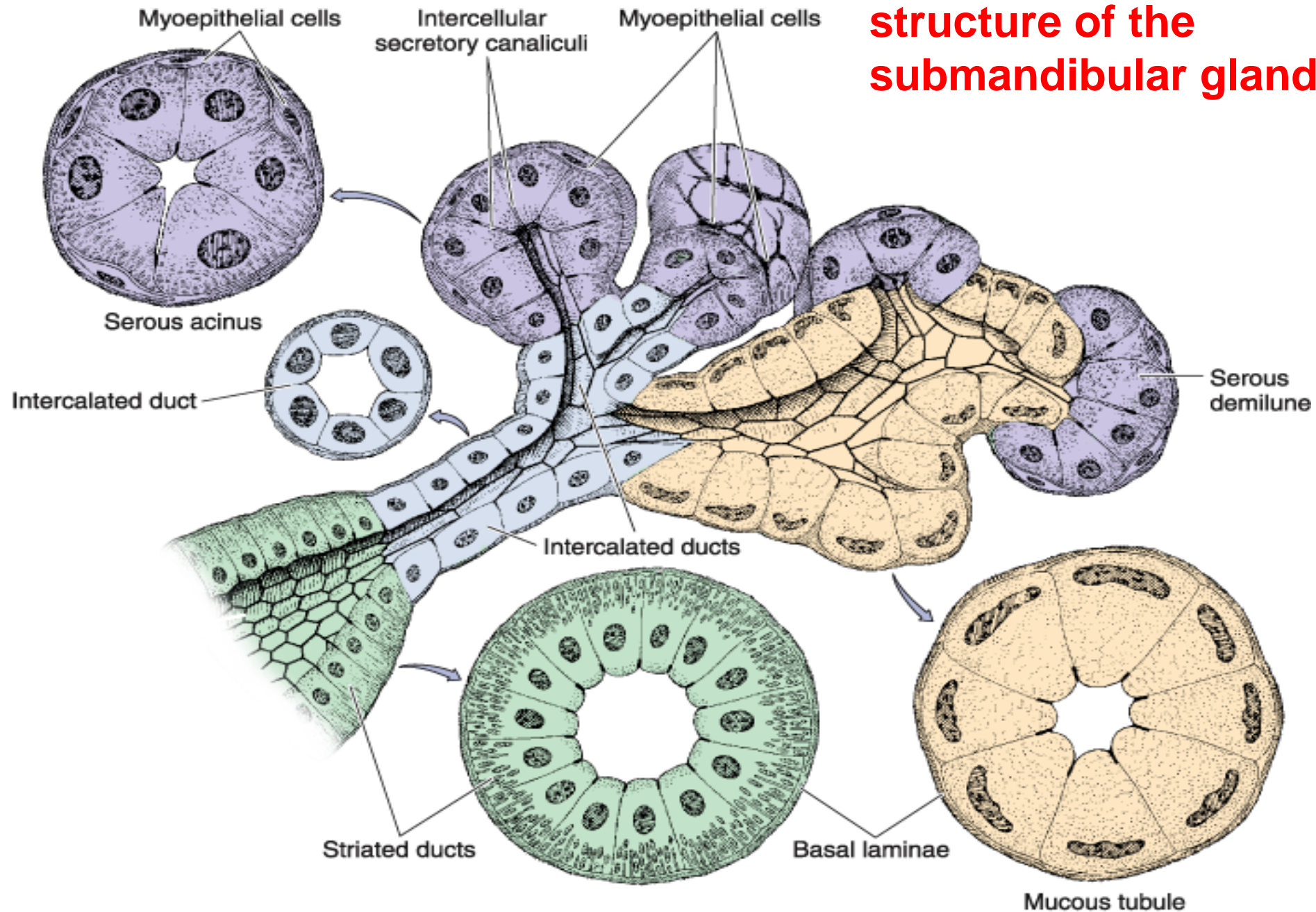
- Parotid Gland, (H & E).
- sa, serous acini.
- ild, intralobular duct
- a, adipose tissue

Parotid Gland



- Parotid Gland, (H & E).
- sa, serous acini.
- sd, striated duct.
- a, adipose tissue

structure of the submandibular gland



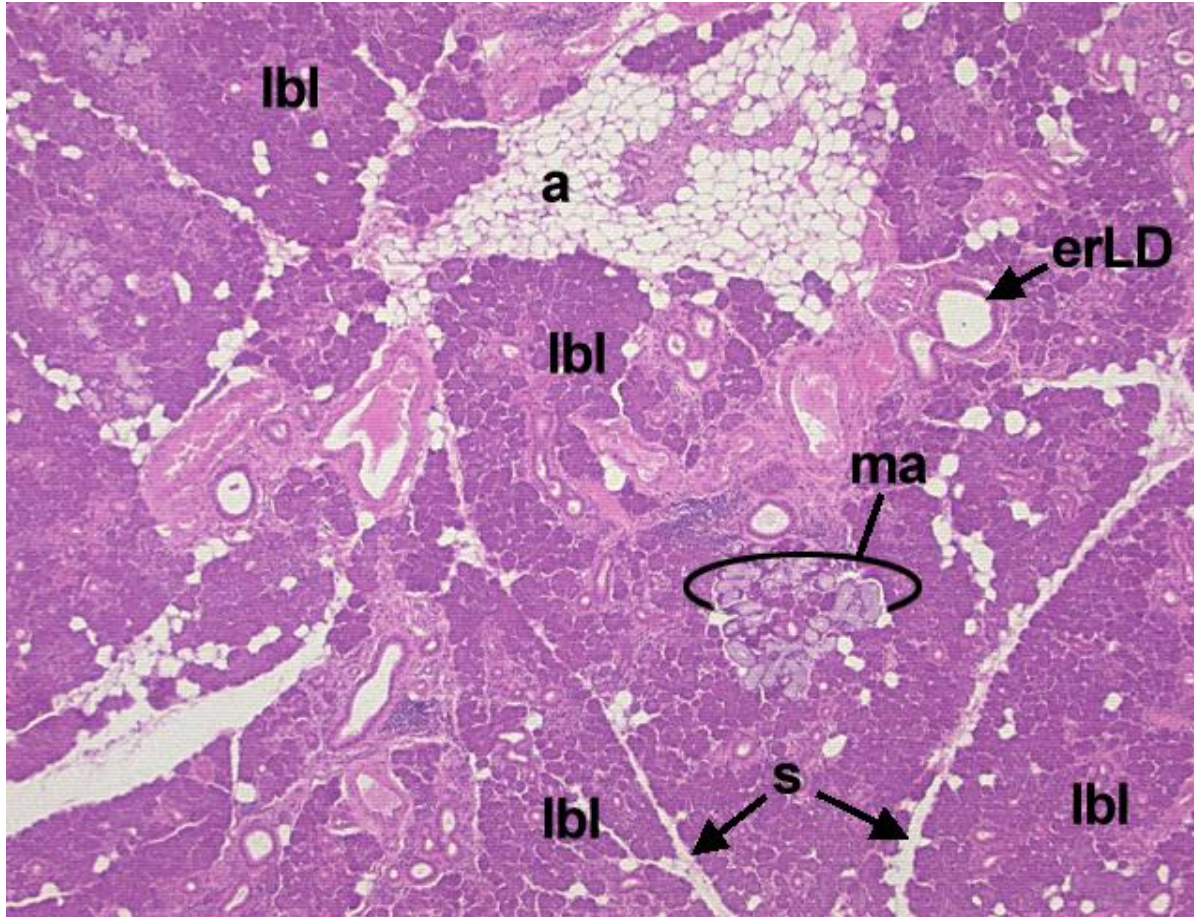
- **Serous cells**

- pyramidal in shape
- typical protein-secreting cells
rounded nuclei
- accumulation of rough
endoplasmic reticulum in the
basal third,
- apex filled with protein-rich
secretory granules

- **Mucous cells**

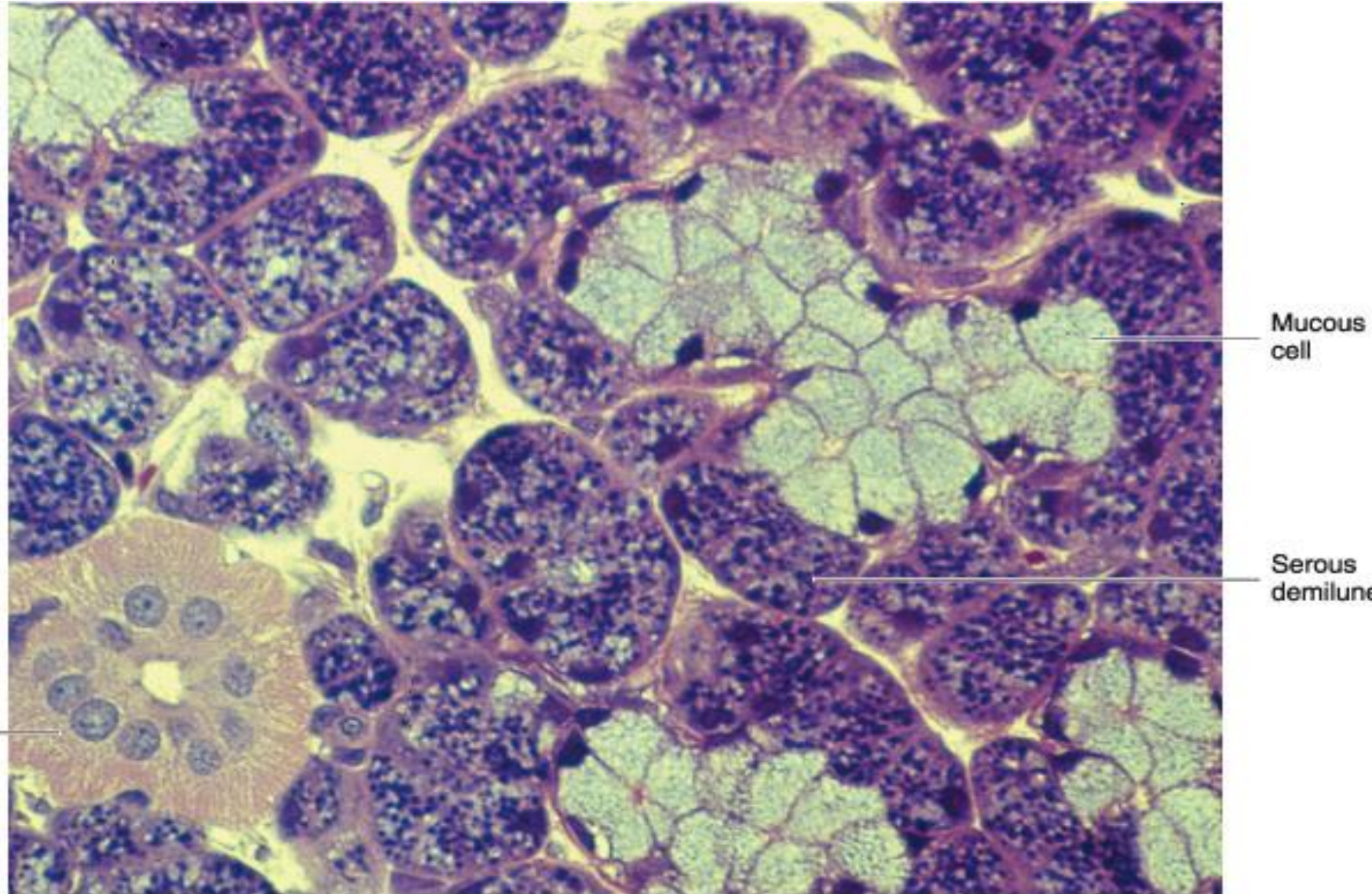
- cuboidal to columnar in shape
- Nuclei of mucous cells flattened
with condensed chromatin,
- are located near the bases of
the cells

Submandibular Gland

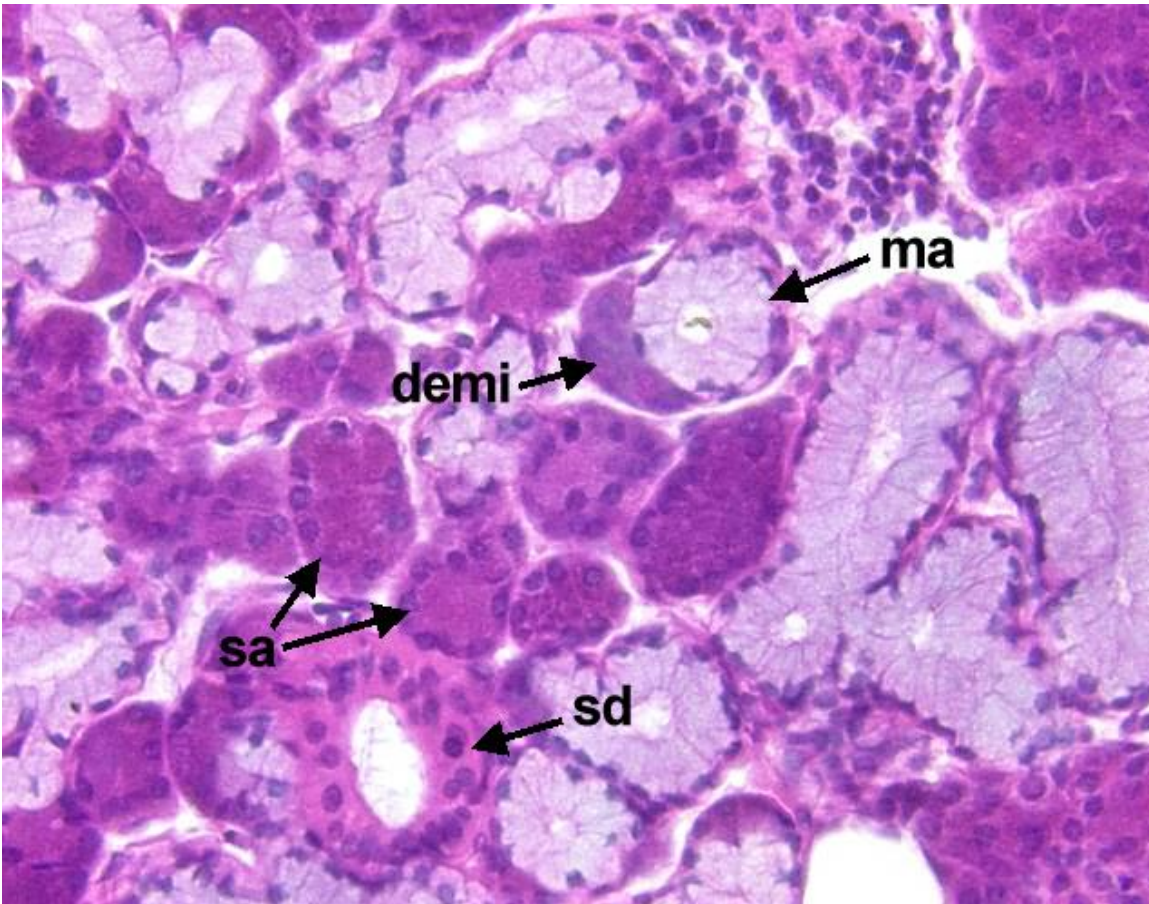


- Submandibular Gland, (H & E).
- lbl, lobule.
- s, septum.
- ma, bed of mixed / mucous acini.
- a, adipose tissue.
- erLD, interlobular excretory duct.

submandibular gland



Submandibular Gland



- Submandibular Gland, (H & E).
- sa, serous acinus.
- ma, mixed acinus.
- demi, serous demilune of a mixed acinus.
- sd, striated duct.