SALIVARY GLANDS

Objectives

By the end of the lecture the student should be able to:

- Describe the microscopic structure of the major salivary glands in correlation with function.

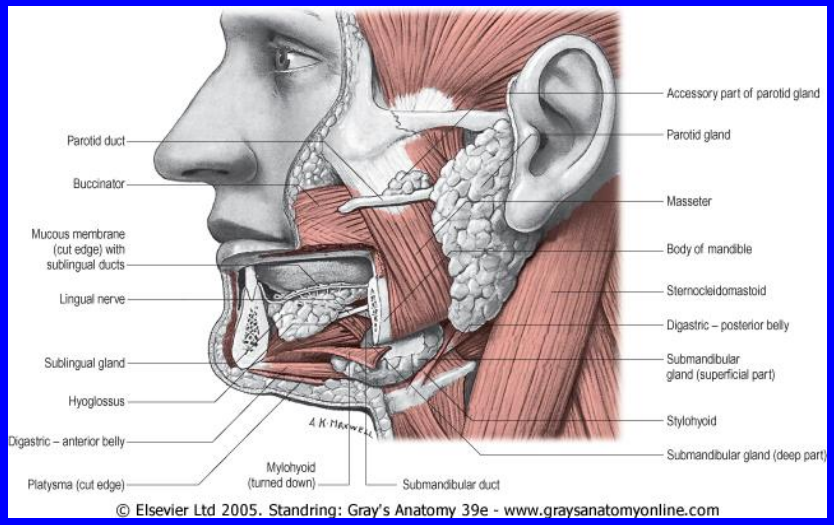
SALIVARY GLANDS

(A) Major Salivary Glands:

1- Parotid.

2- Submandibular.

3- Sublingual.

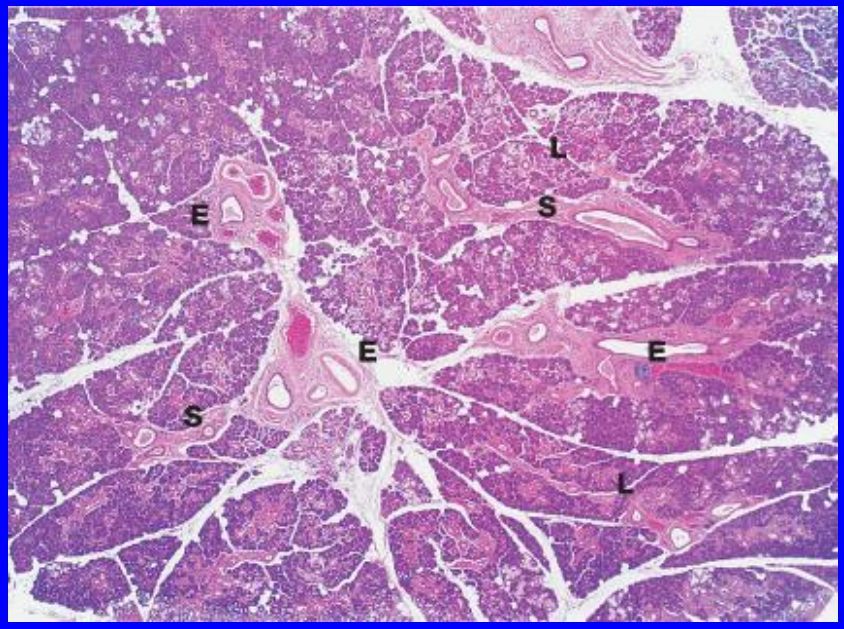


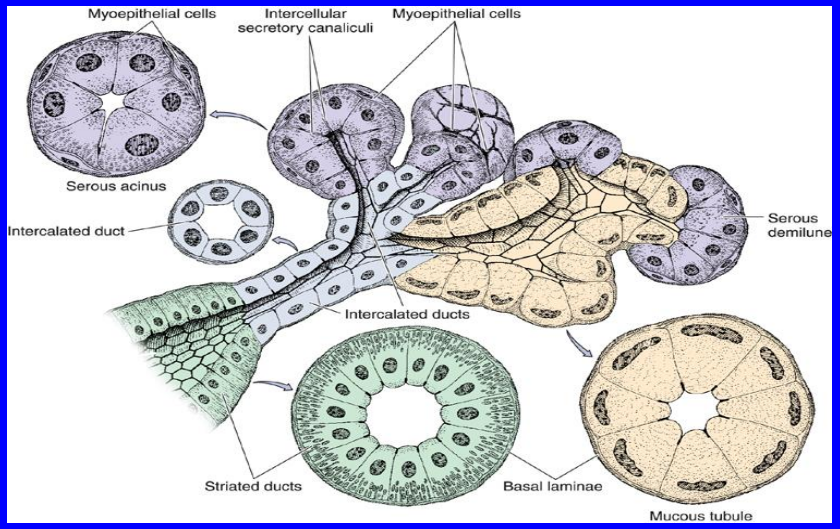
(B) Minor Salivary Glands:

- Labial, Lingual, Buccal, Palatine.
- Produce 5% of salivary output.
- Most of them are pure mucous or seromucous glands.

Major Salivary Glands

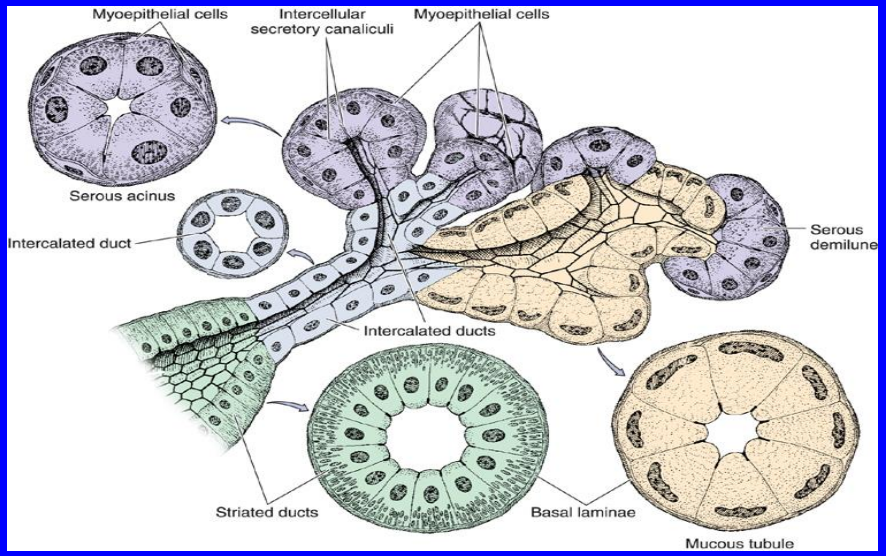
- Stroma:
  - C.T. capsule.
  - C.T. septa dividing the glands into lobes and lobules.
  - Reticular C.T.
- Parenchyma:
  - Acini.
  - Duct system.





Types of Salivary Acini

1. **Serous Acini:**
   - Contain only serous cells.
   - Small, spherical, and with a narrow lumen.
   - Secrete serous secretion rich in enzymes, such as amylase and lysozyme.

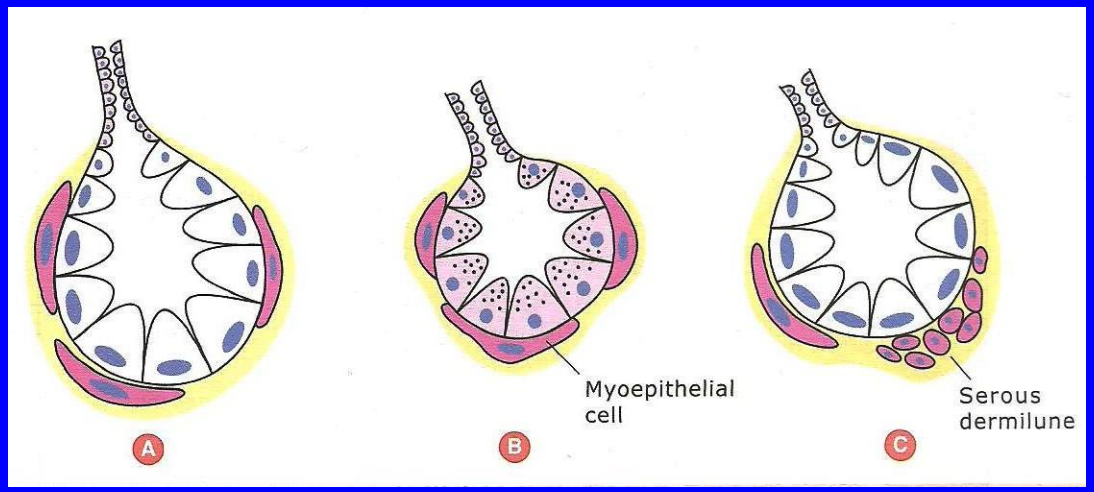


2. **Mucous Acini:**
   - Contain only mucous cells.
   - Larger, more tubular, and with a wider lumen.
   - Secrete mucous secretion.

3. **Mucoserous (Mixed) Acini:**
   - Mucous acini with a cap of serous cells (serous demilunes).

Types of Salivary Acini

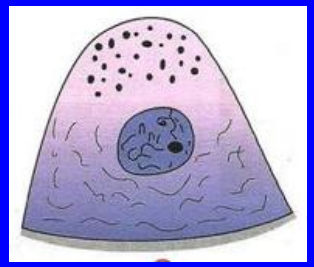
Mucous Serous Mixed



Cells of Salivary Acini

1. Serous cells

- Pyramidal in shape.
- Nuclei are round and basal.
- Cytoplasm:
  - Deeply basophilic (due to numerous RER), with apical acidophilic secretory granules (rich in salivary amylase).

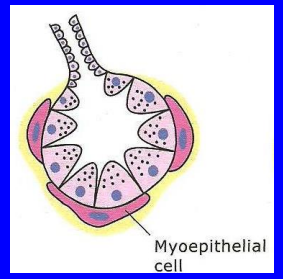


2. Mucous cells

- Pyramidal or cuboidal.
- Nuclei are flattened and basal.
- Cytoplasm:
  - Pale basophilic and vacuolated (foamy) (due to dissolved mucinogen secretory granules).

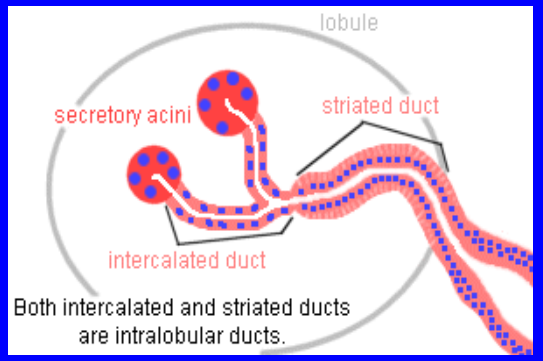
3. Myoepithelial cells (basket cells):

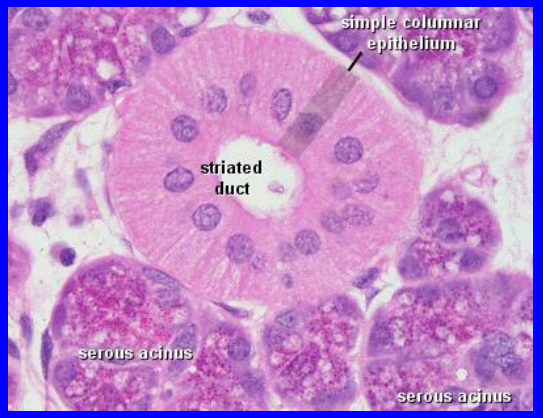
- Contractile cells that embrace the basal aspect of the acini.
- Their contraction releases the secretion into the duct system.

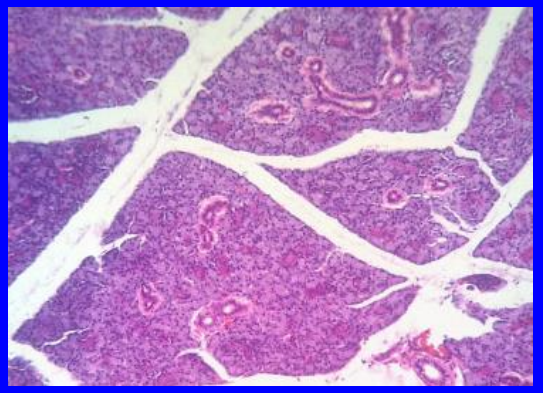


Duct System of Salivary Glands

1. **Intralobular ducts (prominent):**
   a. Intercalated ducts:
      » lined by small cuboidal cells.
   b. Striated ducts:
      » lined by low columnar cells.
2. **Interlobular ducts:**
   – lined by simple columnar epithelium.
3. **Main duct:**
   – lined by stratified columnar epithelium which becomes stratified squamous (nonkeratinized) in the distal end.

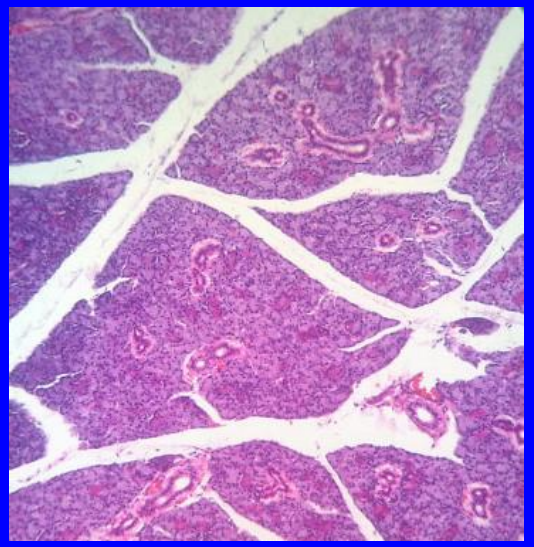


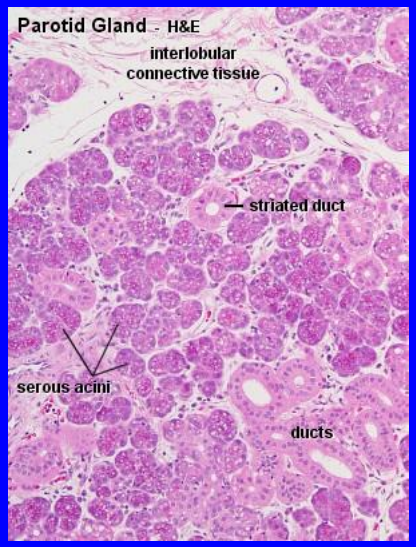


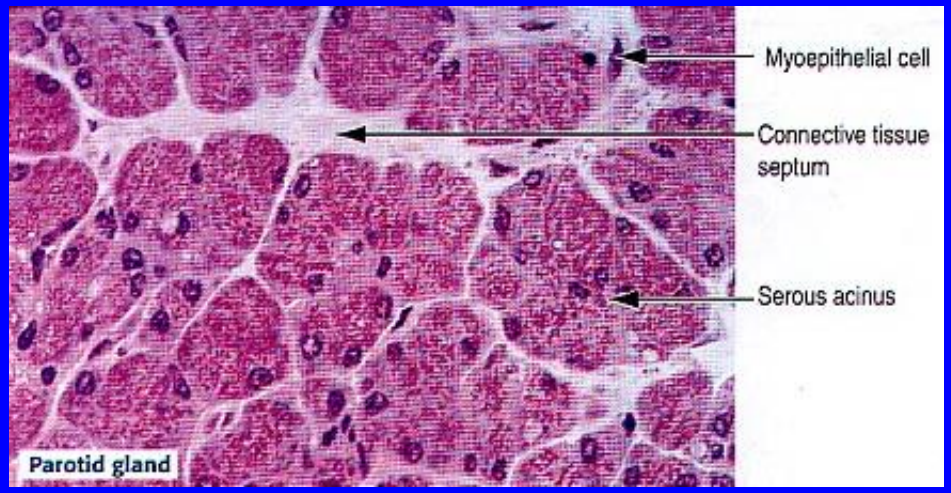


Parotid Gland

- The largest salivary gland.
- Produces 30% of salivary output.
- Purely serous.
- Prominent intralobular ducts.
- Secretion rich in:
  - Amylase.
  - Lactoferrin.
  - Lysozyme.
  - Secretory IgA.

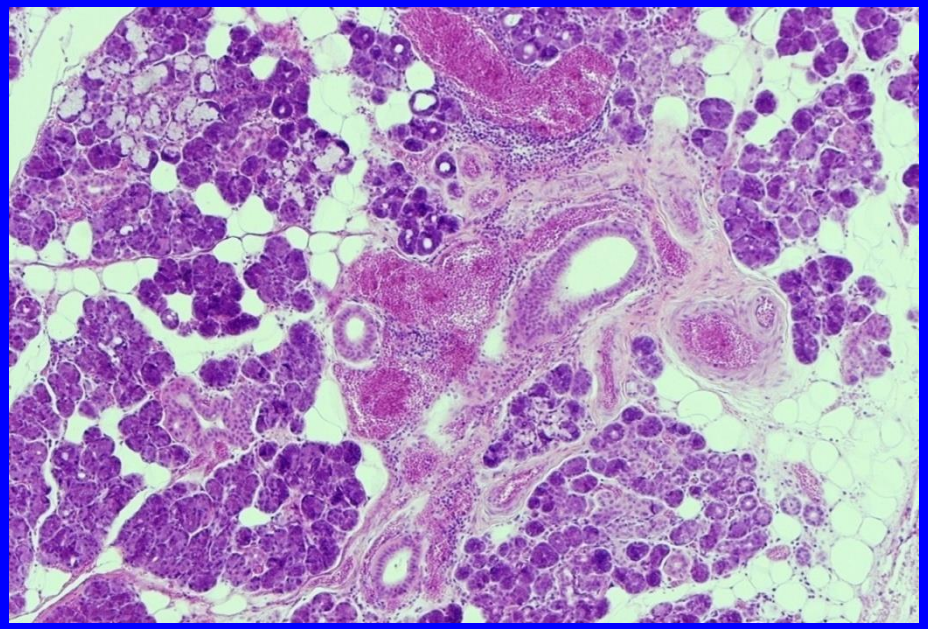


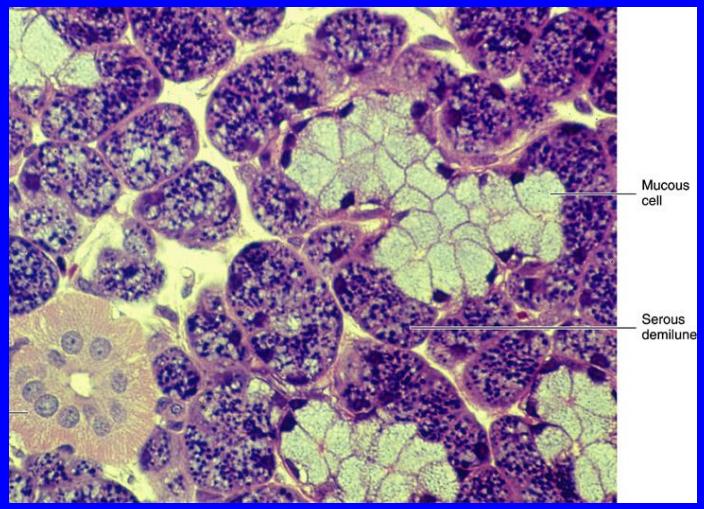




Submandibular Gland

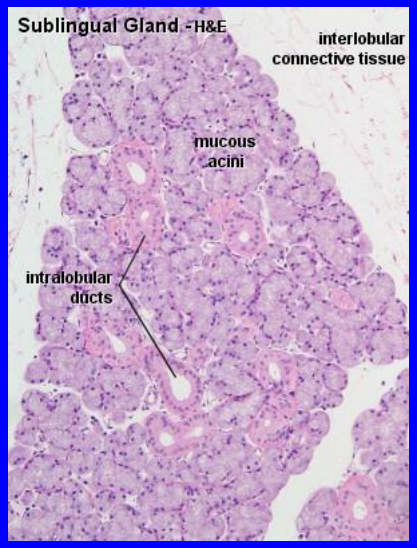
- Produces 60% of salivary output.
- Mixed but mostly serous (90%).
- Mucous acini are capped by serous demilunes.

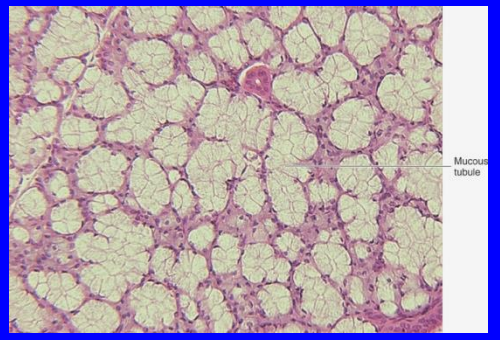


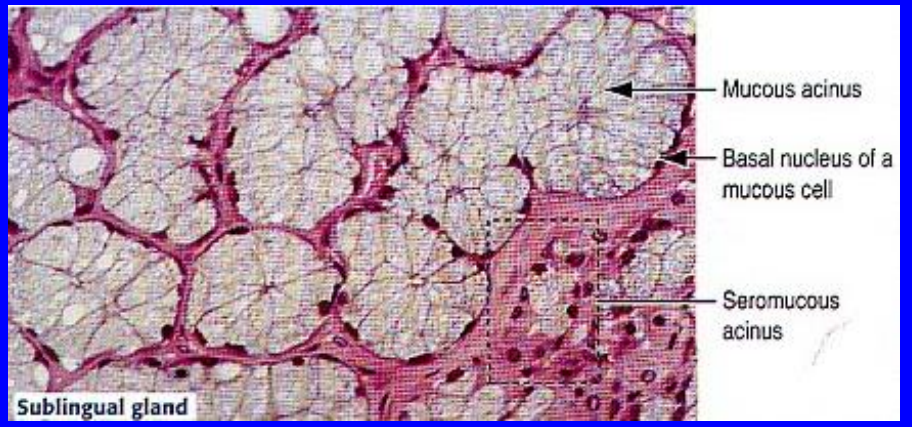


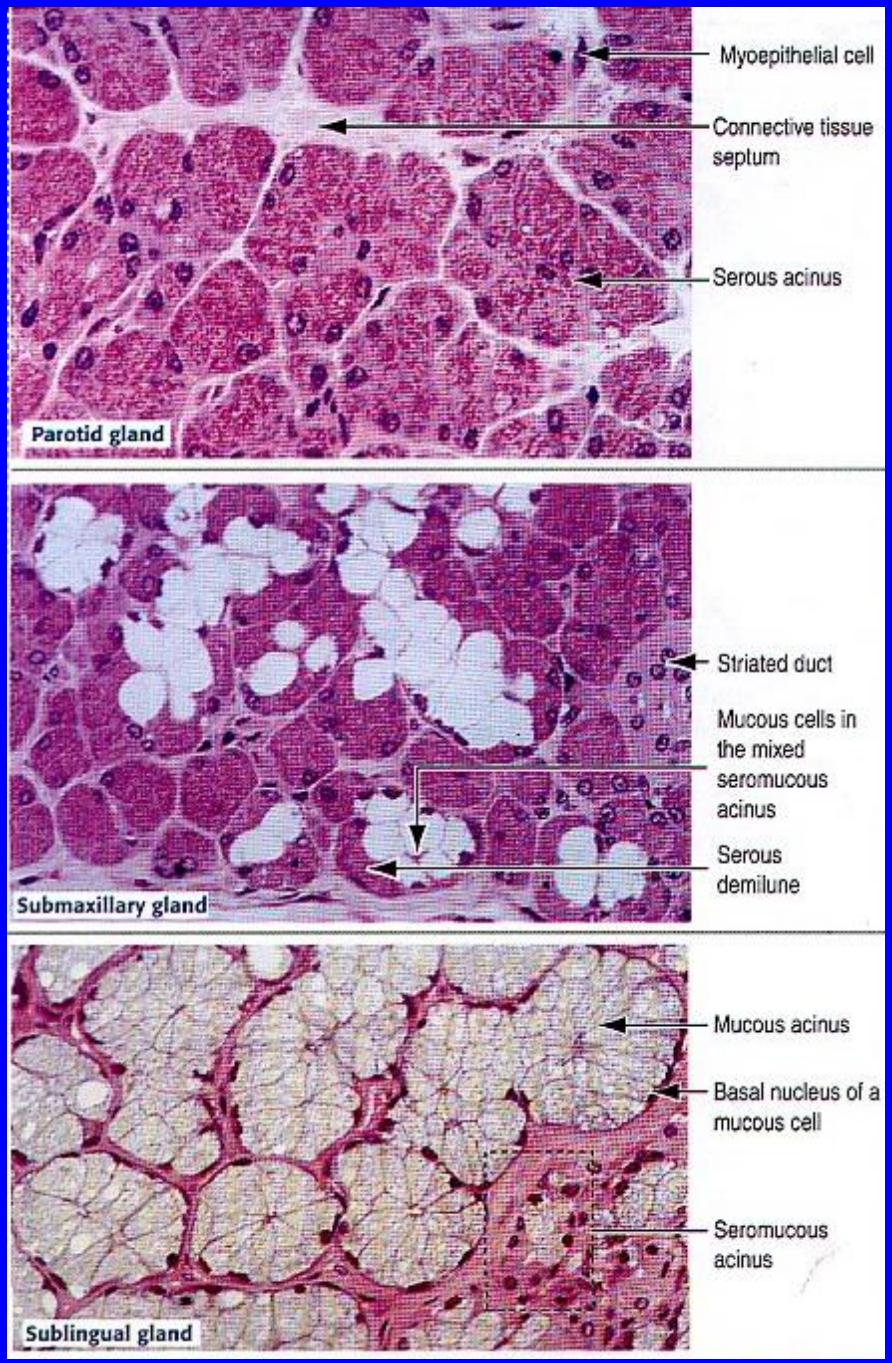
Sublingual Gland

- The smallest salivary gland.
- Produces 5% of salivary output.
- Mixed but mostly mucous.
- Mucous acini are capped by serous demilunes.









Parotid: purely serous

Submanddibular: mostly serous

Sublingual: mostly mucous

THANK YOU