



438
HISTOLOGY TEAM
KING SAUD UNIVERSITY



MED438
KING SAUD UNIVERSITY

SALIVARY GLANDS

Objectives:

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

- ▣ **Editing file**
- ▣ **Important**
- ▣ **Doctor notes / Extra**



Types Salivary Glands

Major Salivary Glands:

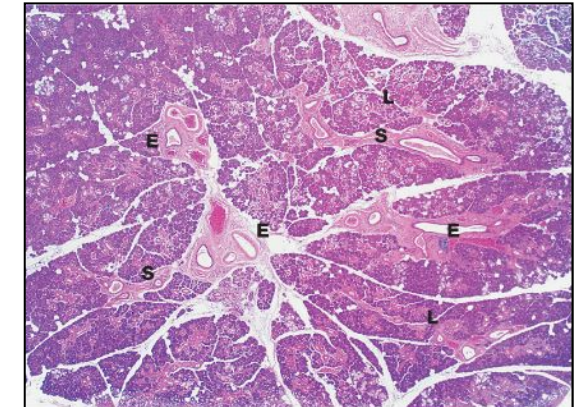
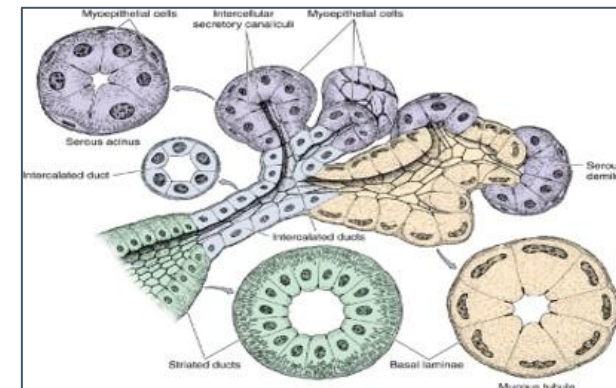
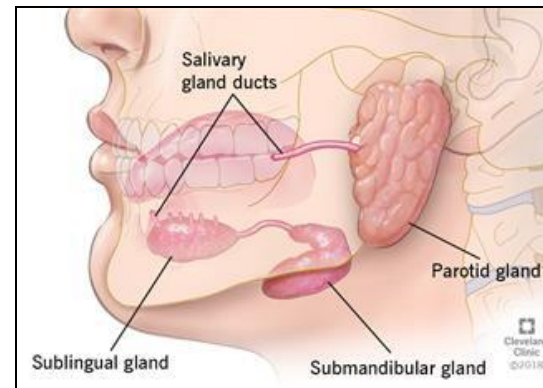
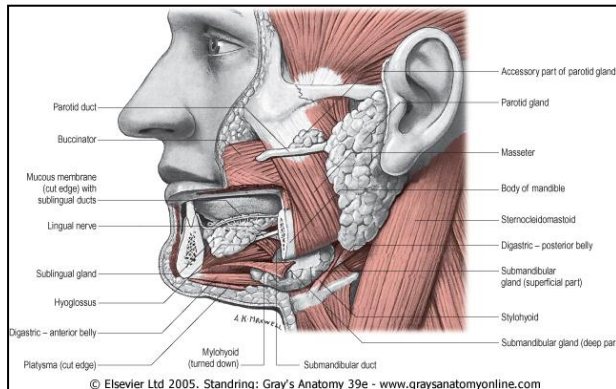
1. Parotid.
2. Submandibular.
3. Sublingual.

Minor Salivary Glands:

1. Labial (lips)
2. Lingual (tongue)
3. Buccal (cheek)
4. Palatine (Palate)

Produce 5% of salivary output.

Most of them are pure mucous or seromucous glands.



General Structure

Stroma:

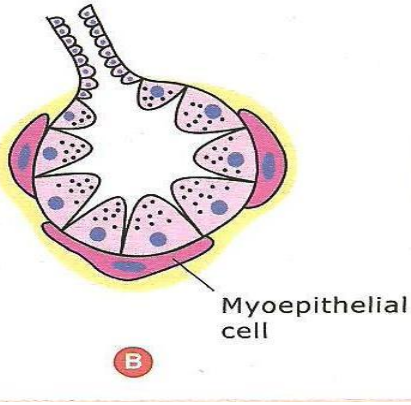

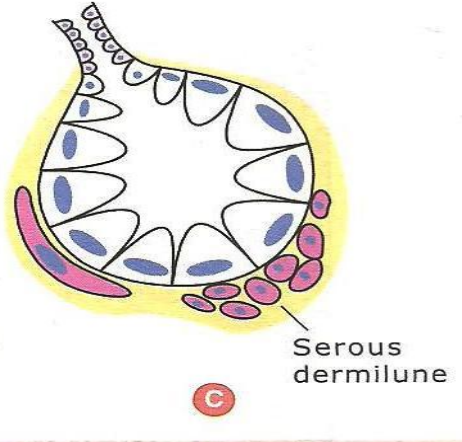
- C.T. capsule.
- C.T. septa dividing the glands into lobes and lobules.
- Reticular C.T.

Parenchyma:

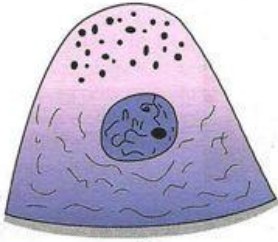

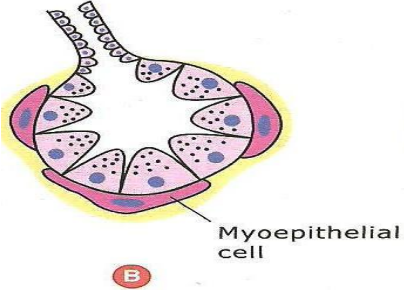
Acini. (secretory unite)

Duct system.

Types of Salivary Acini

Serous Acini:	Mucous Acini:	Mucoserous (Mixed) Acini:
<ul style="list-style-type: none"> Contain only serous cells. Small, spherical, and with a narrow lumen. Secrete serous secretion thin fluid rich in enzymes, such as amylase and lysozyme. 	<ul style="list-style-type: none"> Contain only mucous cells. Larger, more tubular, and with a wider lumen. Secrete mucous secretion. thick viscid secretion and rich in mucin 	<ul style="list-style-type: none"> Mucous acini with a cap of serous cells (serous demilunes). Half moon shape
 <p>Myoepithelial cell</p> <p>B</p>	 <p>A</p>	 <p>Serous demilune</p> <p>C</p>

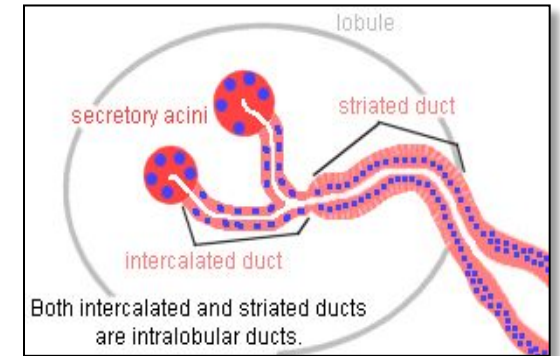
Cells of Salivary Acini

Serous cells	Mucous cells	Myoepithelial cells (basket cells):
<ul style="list-style-type: none"> Pyramidal in shape. Nuclei are round and basal. <p>Cytoplasm: Deeply basophilic (due to numerous RER), with apical acidophilic secretory granules (rich in salivary amylase).</p>	<ul style="list-style-type: none"> Pyramidal or cuboidal. Nuclei are flattened and basal. <p>Cytoplasm: Pale basophilic and vacuolated (foamy) (due to dissolved mucinogen secretory granules).</p>	<p>Contractile cells that embrace the basal aspect of the acini. Their contraction releases the secretion into the duct system.</p>
		

Duct System of Salivary Glands

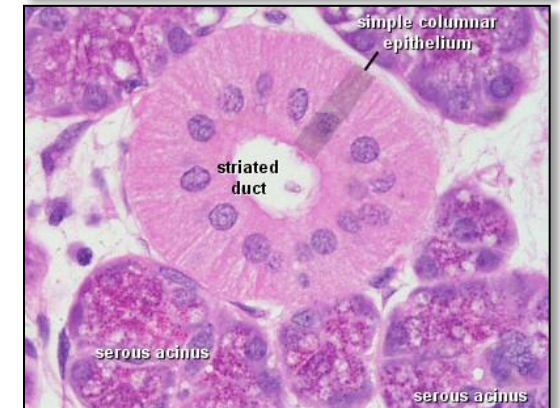
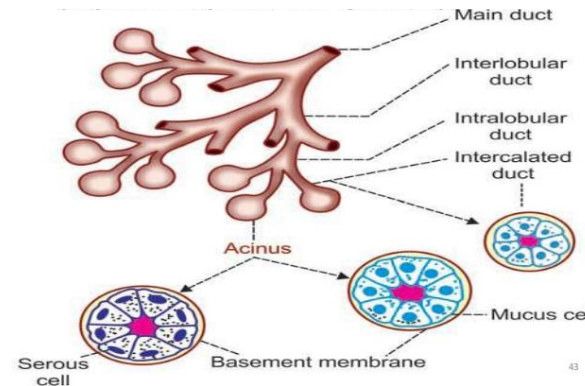
1. Intralobular ducts (**prominent**):

- Intercalated ducts: lined by **small cuboidal cells**.
- Striated ducts: lined by **low columnar cells**.



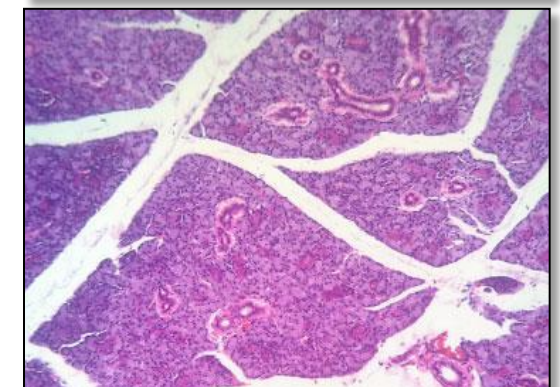
2. Interlobular ducts:

lined by **simple columnar epithelium**.



3. Main duct:

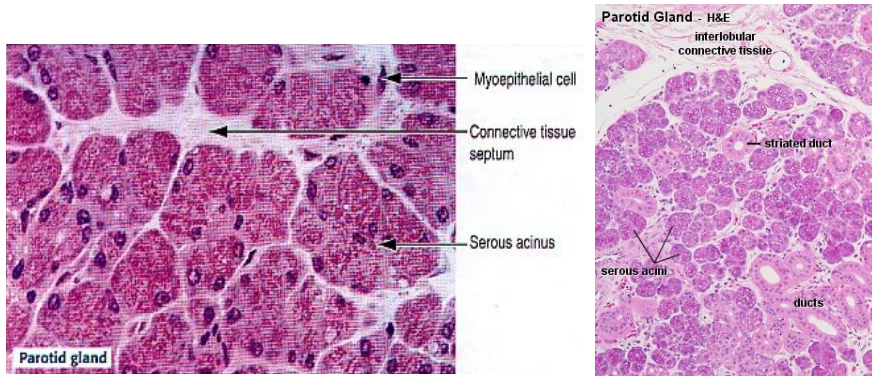
lined by **stratified columnar epithelium** which becomes **stratified squamous** (nonkeratinized) in the distal end.



Major Salivary Glands

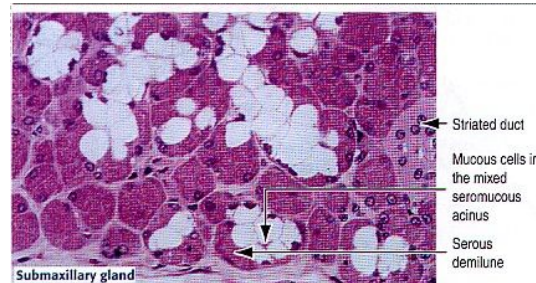
Parotid Gland

- The **largest** salivary gland.
- Produces **30%** of salivary output.
- **Purely serous.**
- Prominent intralobular ducts.
- Secretion rich in: Amylase. Lactoferrin. Lysozyme. Secretory IgA. *Defensive enzymes lactoferrin (prevents bacteria from utilizing iron), IgA (antibody), and lysozyme (attacks bacterial cell wall). Amylase breaks down starch*



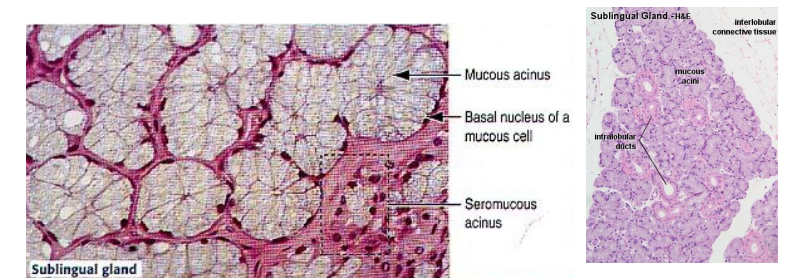
Submandibular Gland

- 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.



Quiz

1- Which one of the following is a major salivary gland:

- A. Sublingual
- B. Lingual
- C. Labial
- D. Palatine

2- Serous acini secrete :

- A. Thin fluid rich in hormones
- B. Thick fluid rich in enzymes
- C. Thick fluid rich in mucin
- D. Thin fluid rich in enzymes

3- Which of the following is true about mucous cells

- A. Secrete serous secretion
- B. Deeply basophilic cytoplasm
- C. Flattened nuclei
- D. Pale eosinophilic cytoplasm

4- Which one of the following is lined by simple columnar epithelium.

- A. Main duct
- B. Intercalated ducts Of Interlobular ducts
- C. Interlobular ducts
- D. Intercalated ducts Of Intralobular ducts

5- Which one of the following gland secrete the most enzymes

- A. Sublingual gland
- B. Parotid gland
- C. Submandibular gland
- D. Palatine gland

6- Which of the following is true about submandibular gland

- A. Serous gland
- B. The largest salivary gland
- C. Secrete enzymes
- D. Produce most of the salivary output



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Team Leaders

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Good luck