# Salivary Glands

Red: important.
Black: in male|female slides.
Gray: notes|extra.

Editing file

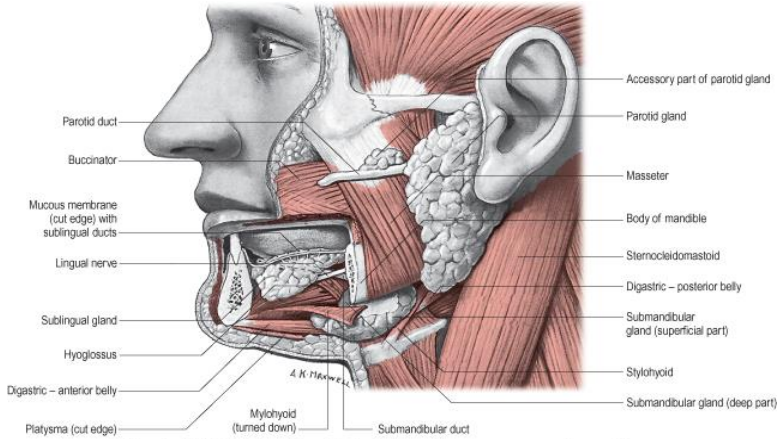
## ➢ OBJECTIVES

- **By the end of the lecture the student should be able to Describe:**
  - Microscopic structure of the major salivary glands in correlation with function

## ➢ Types Salivary Glands

- **Major Salivary Glands:**
  - Parotid glands
  - Submandibular glands
  - Sublingual glands

- **Minor Salivary Glands:**
  - Labial (lips)
  - Lingual (tongue)
  - Buccal (cheek)
  - Palatine (Palate)
  - Produce 5% of salivary output.

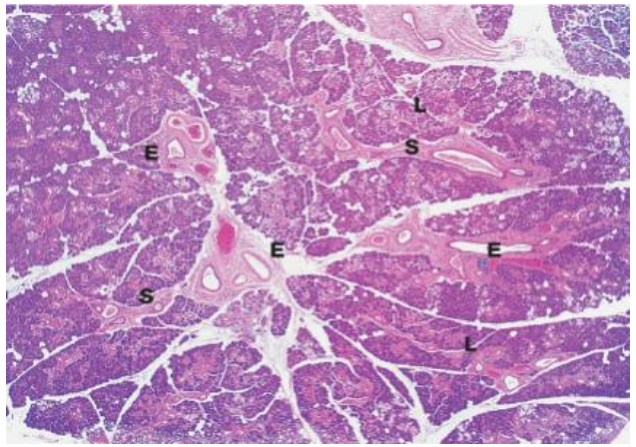




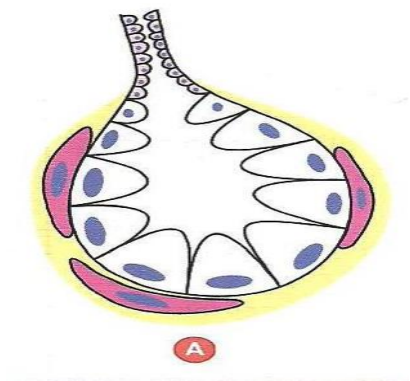
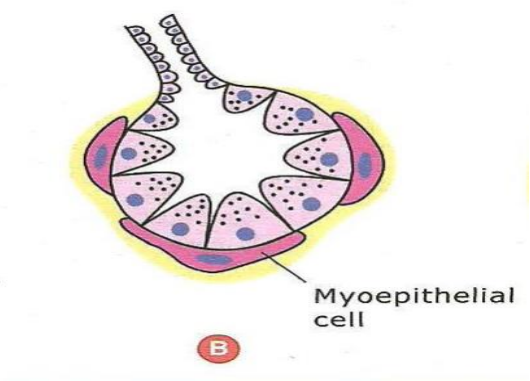
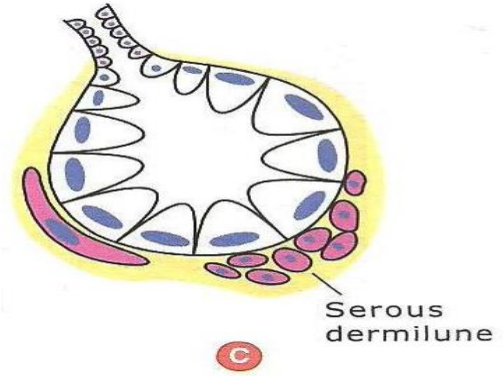
## ➢ General structure

**Stroma:** (Supporting elements)
- C.T. Capsule.
- C.T. septa dividing the glands into lobes and lobules.
- reticular C.T

**Parenchyma:** (Functional elements)
- Acini. (secretory unite)
- Duct system. (Since it's an exocrine gland, so it must have a duct system)



# ➢ Types Of Salivary Acini

| Serous Acini | Mucous Acini | Mucoserous (Mixed) Acini |
|---|---|---|
| - Contain only Serous cells.<br>- Small, spherical, and with a narrow lumen.<br>- Secrete serous secretion rich in enzymes, such as amylase and lysozyme | - Contain only mucous cells.<br>- Larger, more tubular, and with wider lumen<br>- Secrete mucous secretion | - Mucous acini with a cap of serous cells (serous demilunes).<br>يشبه نصف القمر |
|  |  |  |

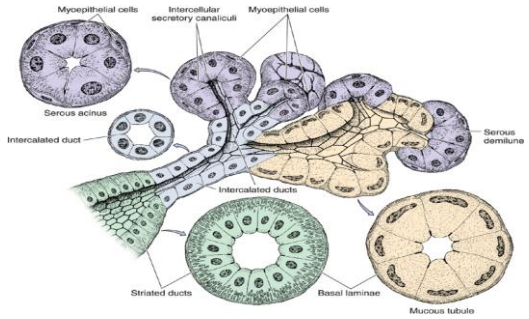
**Notes:**

Serous: watery thin fluid and rich in enzymes

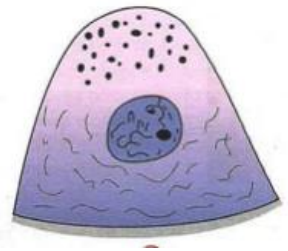
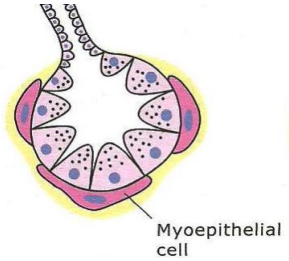
Amylase: digest starch

Lysozyme: defensive enzyme which lysis bacteria cell wall

Mucous: thick viscid secretion and rich in mucin



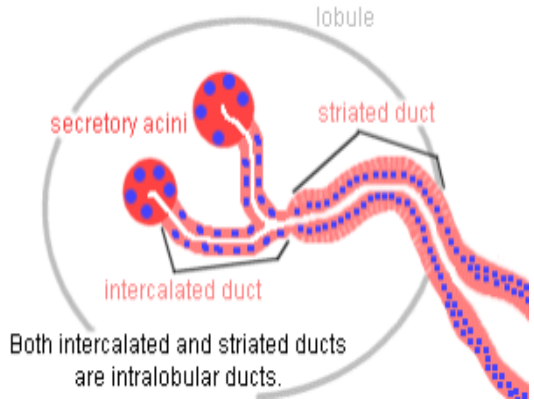
# ➢ Cells Of Salivary Acini

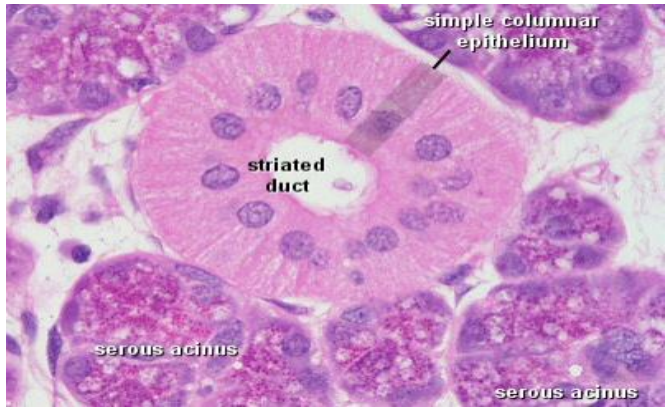
| Cell | Serous cells | Mucous cells | Myoepithelial cells (Basket cells) |
|---|---|---|---|
| DESCRIBTION | - Pyramidal in shape.<br>- Nuclei are round and basal | - Pyramidal or cuboidal.<br>- Nuclei are flattened and Basal. | - Contractile cells that embrace the basal aspect of the acini.<br>- their contraction releases the secretion into the duct system. |
| CYTOPLASM | - **Deeply basophilic** (due to numerous RER),<br>- **with apical acidophilic** secretory granules (rich in salivary amylase). | **Pale basophilic** and vacuolated (foamy) (due to dissolved mucinogen secretory granules). | |
| |  |  |  |

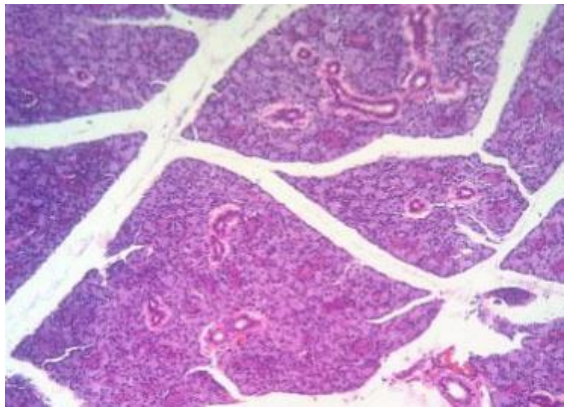
Note: Myoepithelial is modified epithelium located between basement membrane & epithelial cells of acini

# ➢ Duct System Of Salivary Glands

| Intralobular Ducts (prominent) | Interlobular Ducts | Main Duct (opens in oral cavity) |
|---|---|---|
| **Intercalated Ducts:** lined by small cuboidal cells<br>**Striated Ducts:** lined by low columnar cells | - Lined by **simple columnar epithelium** | - Lined by **stratified columnar epithelium** which becomes **stratified squamous (nonkeratinized)** in the distal end |

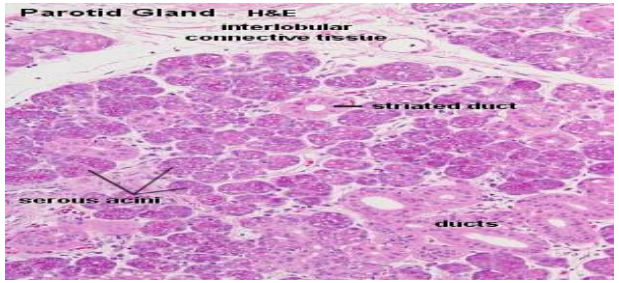


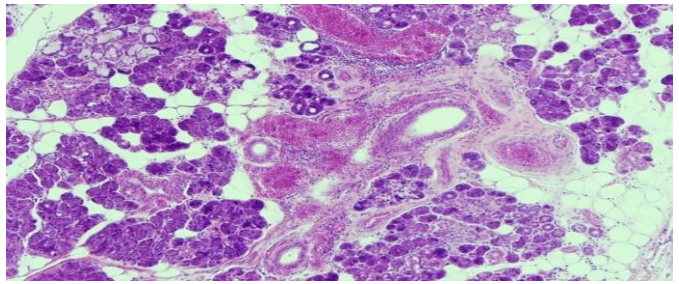



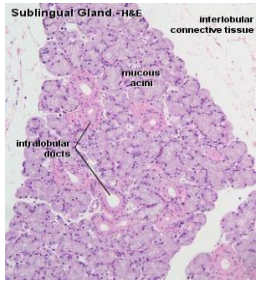



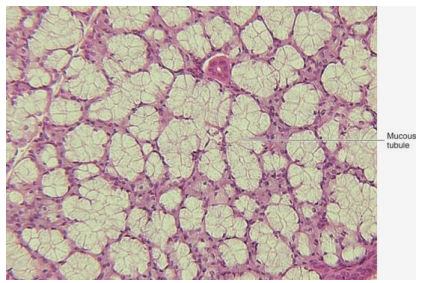
# ➢ Major Salivary Glands

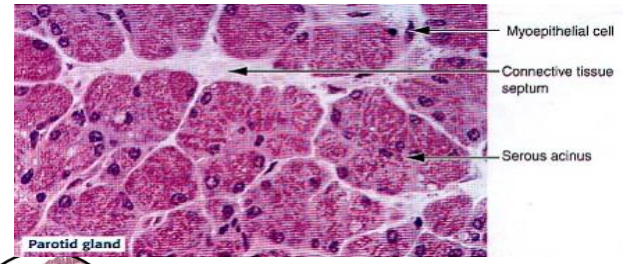
| Parotid Glands | Submandibular Glands | Sublingual Glands |
|---|---|---|
| - The largest salivary gland.<br>- Produce 30% of salivary output.<br>- Purely serous.<br>- Prominent intralobular ducts.<br>- Secretion rich in:<br>• Amylase<br>• Lactoferrin<br>• Lysozyme<br>• Secretory IgA (Defensive enzymes) | - Produce 60% of salivary output. (the major contribution)<br>- Mixed but mostly serous (90%) | - The smallest salivary gland.<br>- Produce 5% of salivary output.<br>- Mixed but mostly mucous |
| Mucous acini are capped by serous demilunes | | |

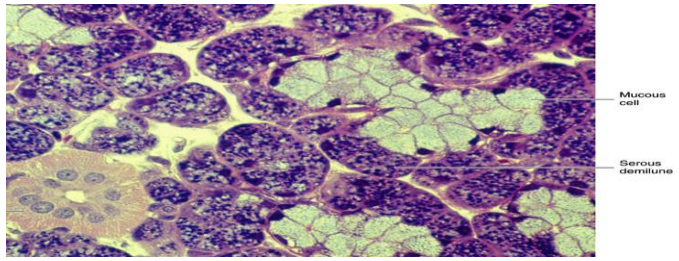


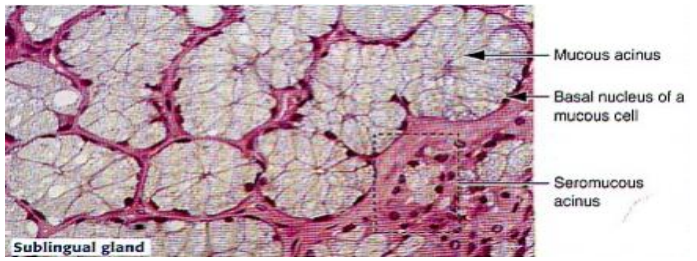






Amylase: digest starch
Lactoferrin: bind to iron to prevent bacteria from using it
Lysozyme: defensive enzyme which lysis bacteria cell wall
Secretory IgA: antibody

## ➢ QUESTIONS:

Q1: Which one of the following is a **major salivary gland**?

A) Labial B) Buccal C) Sublingual D) Lingual

Q2: Which of the following **glands** produce the **most output of saliva**?

a) Parotid gland b) Sublingual gland c) Submandibular gland d) Buccal

Q3: Which one of the following is a **minor salivary gland**?

A) Parotid B) Labial C) Sublingual D) Submandibular

Q4: Which of the following is a **feature** of **mucous cells salivary acini**?

A) Pyramidal in shape B) flattened and basal nuclei

C) pale basophilic (cytoplasm) D) All above

Q5: The sublingual gland produce about ____ of salivary output?

A) 60% B) 30% C) 50% D) 5%

1- C
2- C
3- B
4- D
5- D

Q6: Which one of the following lined by **small Cuboidal cells**?

a) Striated Ducts b) Interlobular Ducts c) Main Duct d) Interclated Ducts

Q7: **Amylase** & **lysozyme** are **produced** by?

a) Serous acini b) Mucous acini c) Mixed acini d) all of them

Q8: Which one of the following **salivary glands** is **purely serous**?

a) Parotid gland b) Sublingual gland c) Submandibular gland

Q9: Which one of the following is the **smallest salivary gland**?

a) Parotid gland b) Sublingual gland c) Submandibular gland

Q10: Which one of the following salivary glands is Produce only 30% of salivary output?

a) Parotid gland b) Sublingual gland c) Submandibular gland

10- A
9- B
8- A
7- A
6- D



HISTOLOGY TEAM 437

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