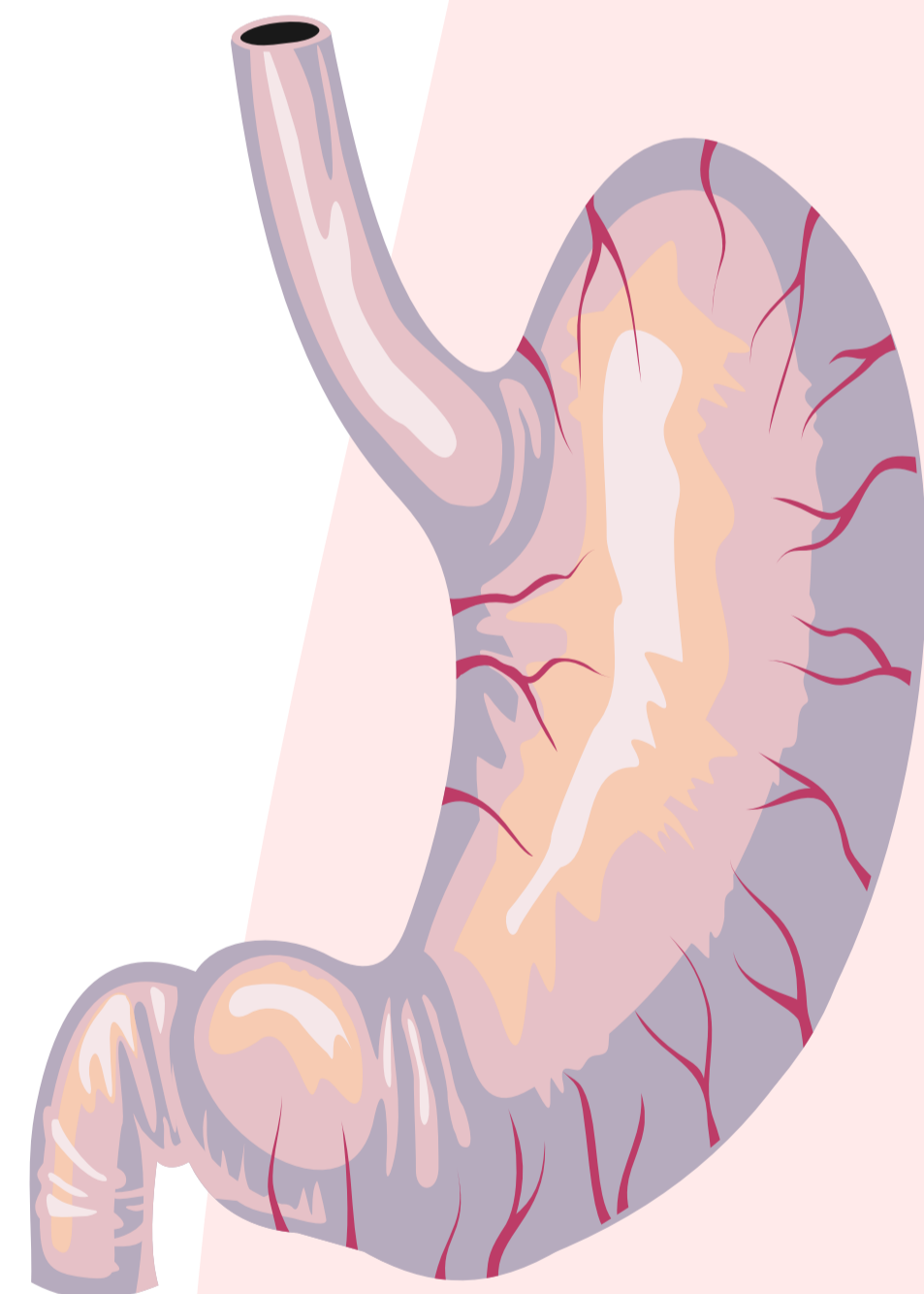
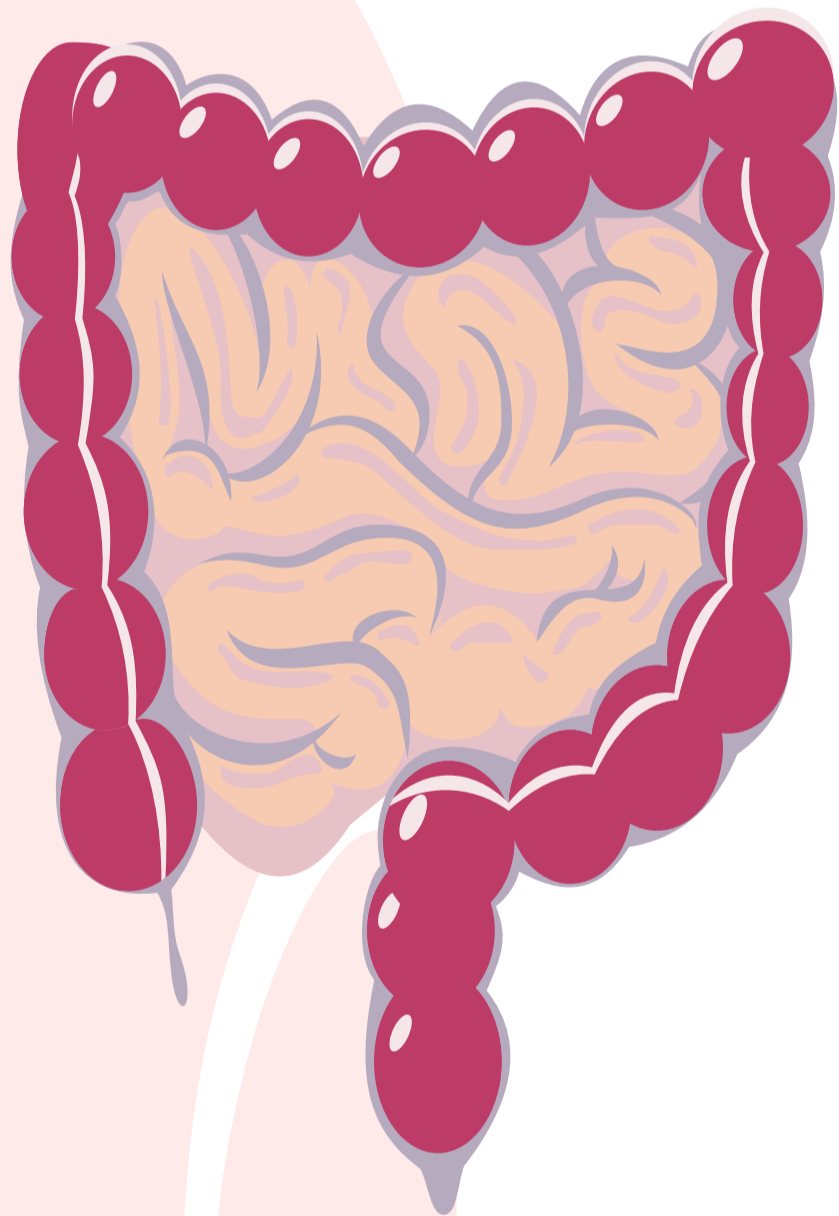


Salivary Gland



Color index:

- Main text
- important
- female slides
- male slides
- Dr.note
- Extra

Editing File

[Gastrointestinal & Nutrition Block | Histology]

Objectives



At the end of this lecture, you should be able to answer the following (objectives):

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

Table of contents:

Types of salivary glands

Duct system of salivary glands

Major salivary glands

cells of salivary Acini

Types of salivary Acini

This lecture was presented by:

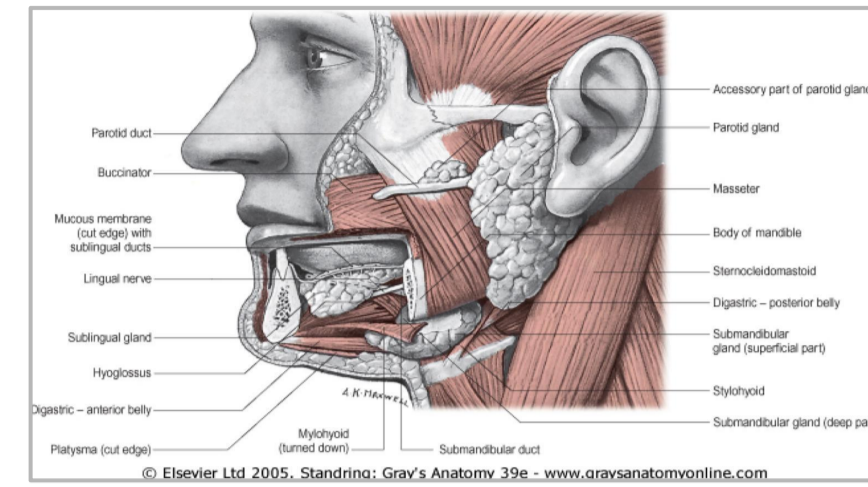
Dr. Mohammed Atteya

Prof. Raeesa Abdultawab

Types of salivary glands:

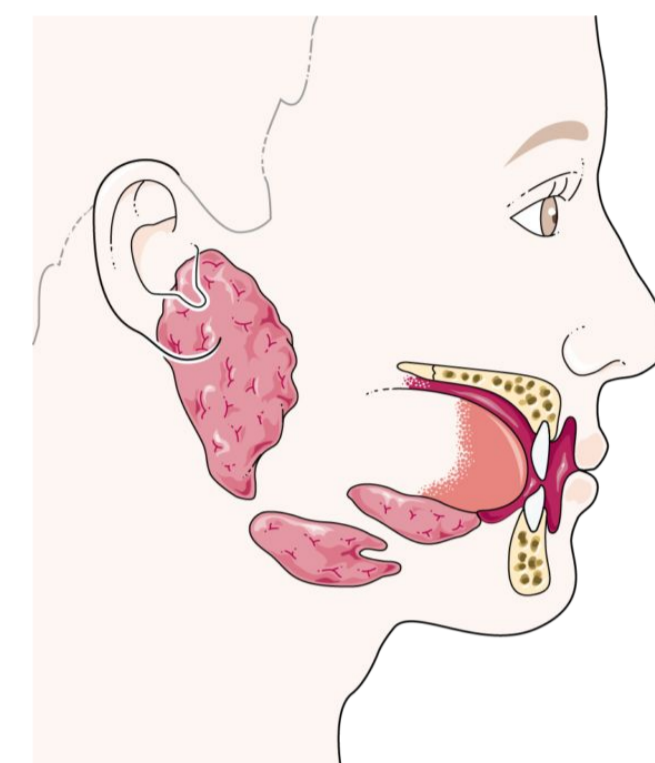
01-Major Salivary glands:

- Including: **Parotid - Submandibular - Sublingual**
- **Capsulated**

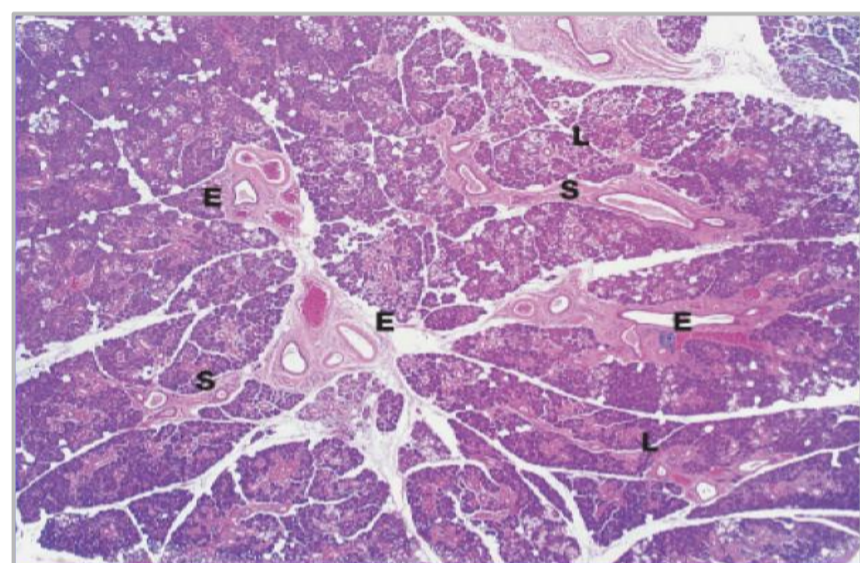


02-Minor Salivary glands: *Within organs/tissues*

- Including: **Labial - Lingual - Buccal - Palatine**
- Produce 5% of salivary output.
- Most of them are pure mucous or seromucous glands.
- **Not capsulated**



Major Salivary Glands



General structure

Stroma

(Supporting element)

Parenchyma

(functional element)

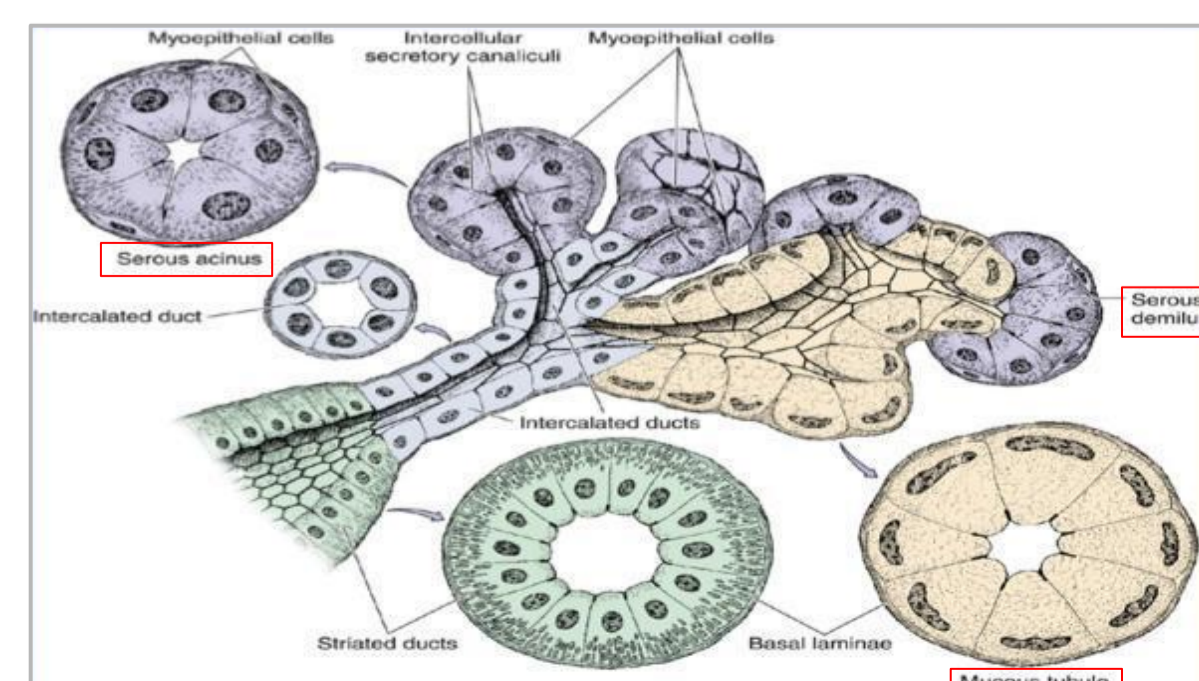
C.T. capsule.

Reticular C.T.

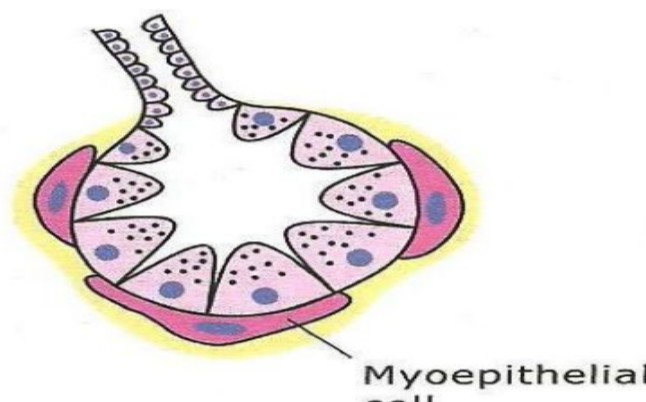
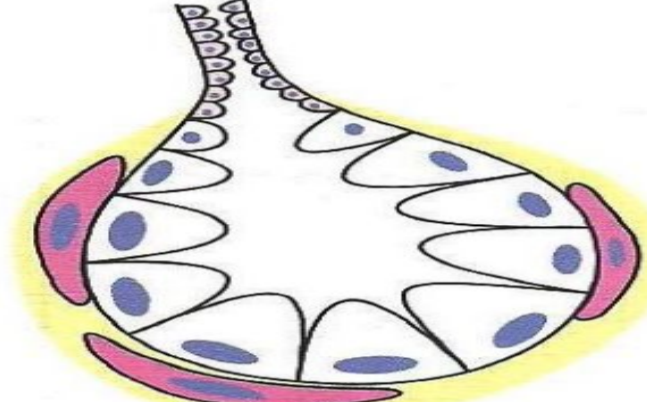
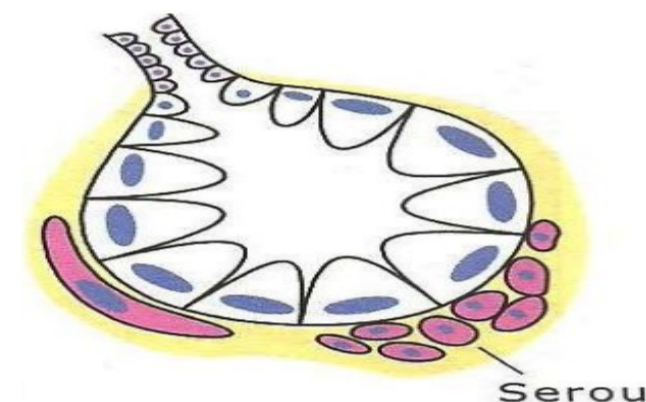
Acini
Sac-like
Secretory unit

Duct system

C.T. septa
dividing the glands
into lobes and
lobules.

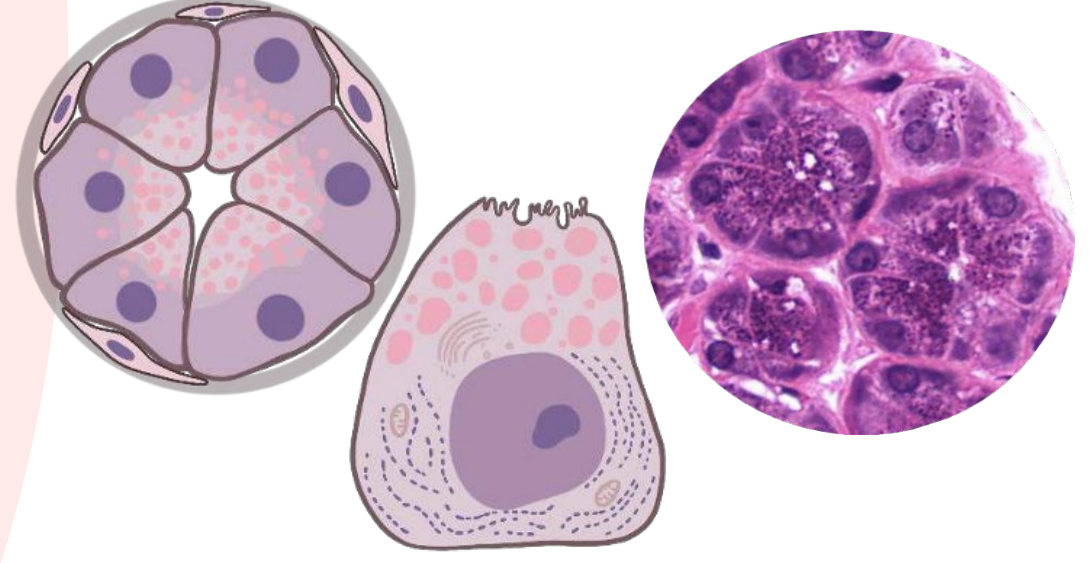
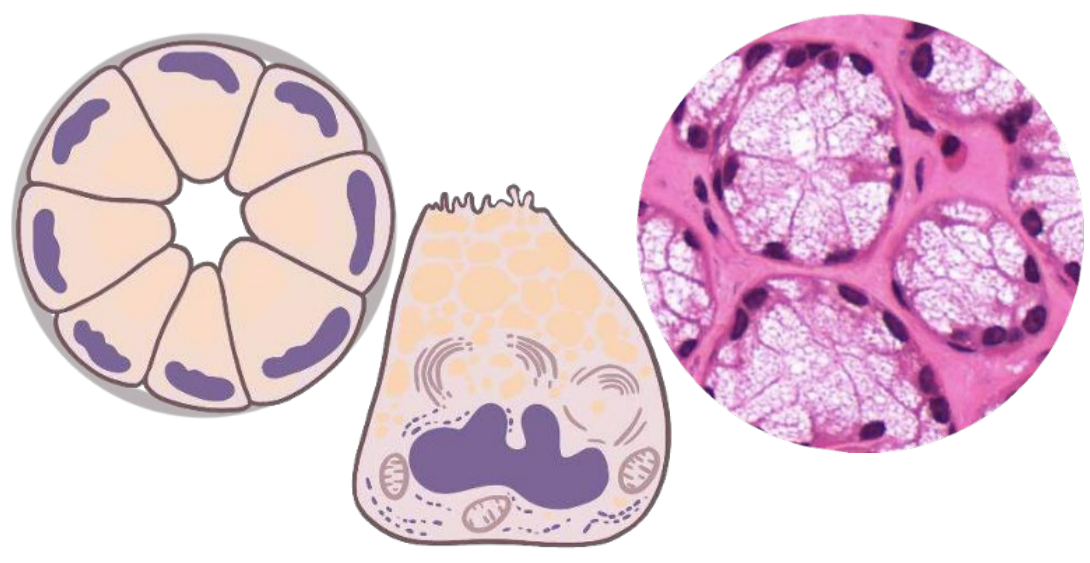
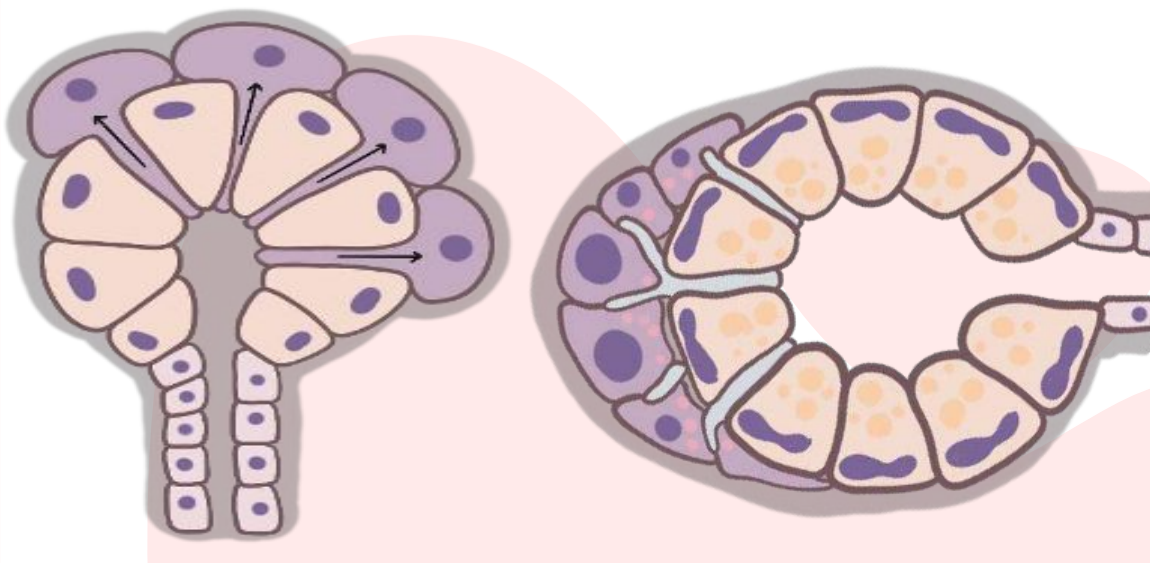


Types of Salivary Acini

| Serous Acini | Mucous Acini <small>Lubricate food bolus</small> | Mucoserous (Mixed) Acini |
|--|--|--|
| <ul style="list-style-type: none"> Contain only serous cells. Small, spherical, and with a narrow lumen. Secrete serous secretion rich in enzymes, such as amylase and lysozyme. Serous = thin fluid rich in enzymes | <ul style="list-style-type: none"> Contain only mucous cells. Larger, more tubular, and with a wider lumen Secrete mucous secretion. The parts that contain mucous acini needs to be wet to avoid getting injured. | <ul style="list-style-type: none"> Mucous acini with a cap of serous cells (serous demilunes). (شكل هلال) |
|  <p>Myoepithelial cell</p> |  |  <p>Serous demilune</p> |



Cells of Salivary Acini

| Serous cells | Mucous cells | Myoepithelial cells (basket cells) |
|---|---|---|
| <ul style="list-style-type: none"> Pyramidal in shape. Male doc said know why its basophilic Nuclei are round and basal Cytoplasm: Deeply basophilic (due to numerous RER) high RER due to high enzyme level with apical acidophilic secretory granules (rich in salivary amylase) (contain basic amino acid). | <ul style="list-style-type: none"> Pyramidal or cuboidal. Nuclei are flattened and basal (flattened due to mucosal compression), (more basal) Cytoplasm: Pale basophilic and vacuolated (foamy) (due to dissolved mucinogen secretory granules). | <ul style="list-style-type: none"> Contractile cells that embrace the basal aspect of the acini. Their contraction releases the secretion into the duct system. Contract to squeeze the secretion out of acini |
|  |  |  |

Duct system of Salivary Glands

Intralobular ducts (prominent)

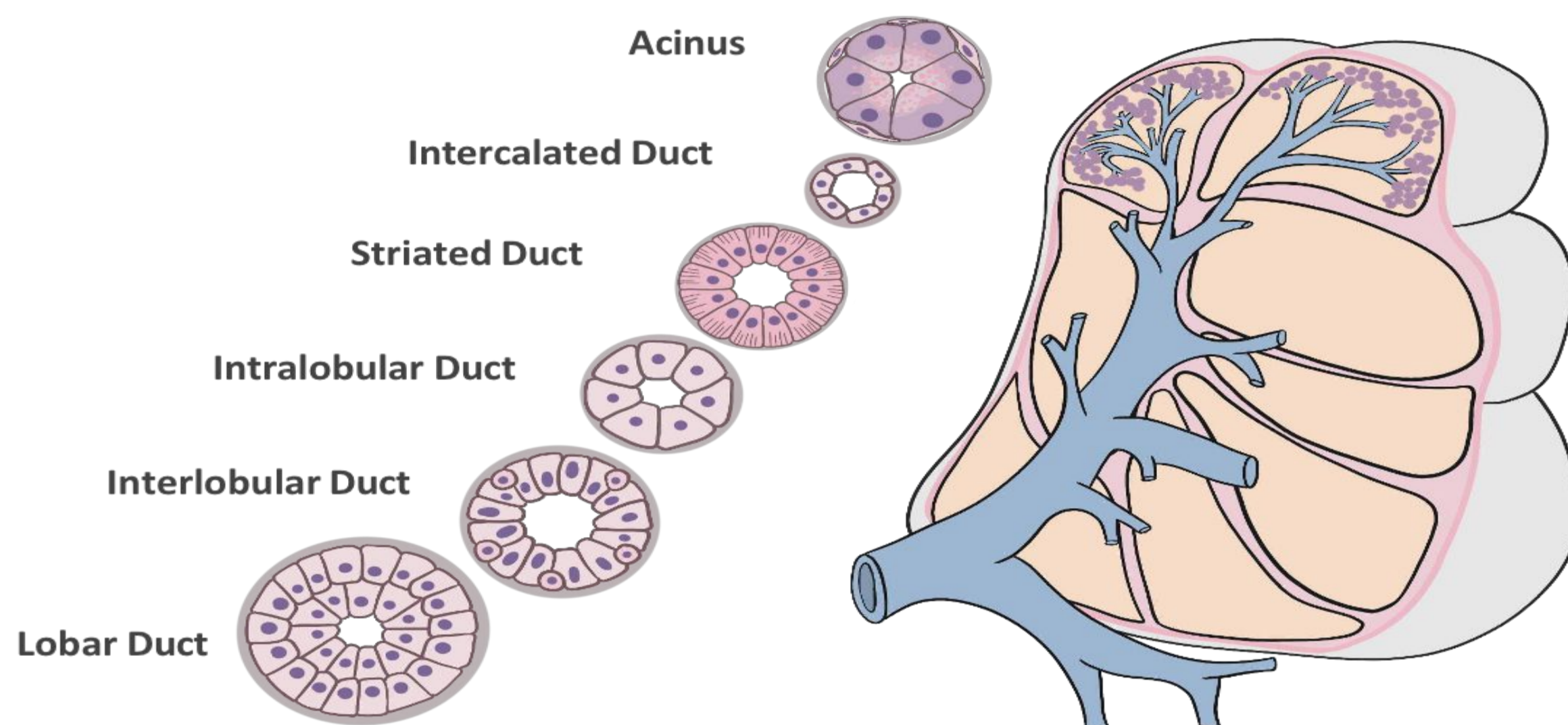
- intercalated ducts : lined by **small cuboidal cells**.
- Striated ducts: lined by **low columnar cells**.

Interlobular ducts

- lined by **simple columnar epithelium**.

Main duct

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



Major salivary glands

Serous= Dark
Mucous= Light

| Parotid Gland | Submandibular Gland | Sublingual Gland |
|--|--|--|
| <ul style="list-style-type: none"> • The largest salivary gland. • Produces 30% of salivary output. • Purely serous. • Prominent intralobular ducts. • Secretion rich in: Amylase, Lactoferrin, Lysozyme, Secretory IgA (manufactured by plasma cells located in the connective tissue) | <ul style="list-style-type: none"> • Produces 60% of salivary output. • Mixed but mostly serous (90%). • Mucous acini are capped by serous demilunes. | <ul style="list-style-type: none"> • The smallest salivary gland. • Produces 5% of salivary • Mixed but mostly mucous. • Mucous acini are capped by serous demilunes. |
| <p>Micrograph of Parotid gland showing myoepithelial cell, Connective tissue septum, and Serous acinus.</p> | <p>Micrograph of Submaxillary gland showing Striated duct, Mucous cells in the mixed seromucous acinus, and Serous demilune.</p> | <p>Micrograph of Sublingual gland showing Mucous acinus, Basal nucleus of a mucous cell, and Seromucous acinus.</p> |

MCQs

01

Which of the following are major salivary glands?

| | | | |
|-----------------|-------------------|-----------------------|---------------------------|
| A- Labial gland | B- Palatine gland | C- Lingual and Buccal | D- Parotid and Sublingual |
|-----------------|-------------------|-----------------------|---------------------------|

02

What is the composition of the secretion produced by serous acini?

| | | | |
|---------------------|--------------------------|--------------------------------|----------------------|
| A- Mucous secretion | B- Enzyme-rich secretion | C- Serous and mucous secretion | D- None of the above |
|---------------------|--------------------------|--------------------------------|----------------------|

03

Which salivary gland is predominantly mucous?

| | | | |
|------------------|------------------------|---------------------|----------------------|
| A- Parotid gland | B- Submandibular gland | C- Sublingual gland | D- None of the above |
|------------------|------------------------|---------------------|----------------------|

04

What type of cells line the intercalated ducts in the duct system of salivary glands?

| | | | |
|--------------------------|-----------------------|-------------------------|------------------------------|
| A- Simple columnar cells | B- Low squamous cells | C- Small cuboidal cells | D- Stratified squamous cells |
|--------------------------|-----------------------|-------------------------|------------------------------|

05

Which salivary gland produces the highest percentage of salivary output?

| | | | |
|------------------|------------------------|---------------------|--------------------------|
| A- Parotid gland | B- Submandibular gland | C- Sublingual gland | D- Minor salivary glands |
|------------------|------------------------|---------------------|--------------------------|

**Answer key:
D, B, C, C, B**

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