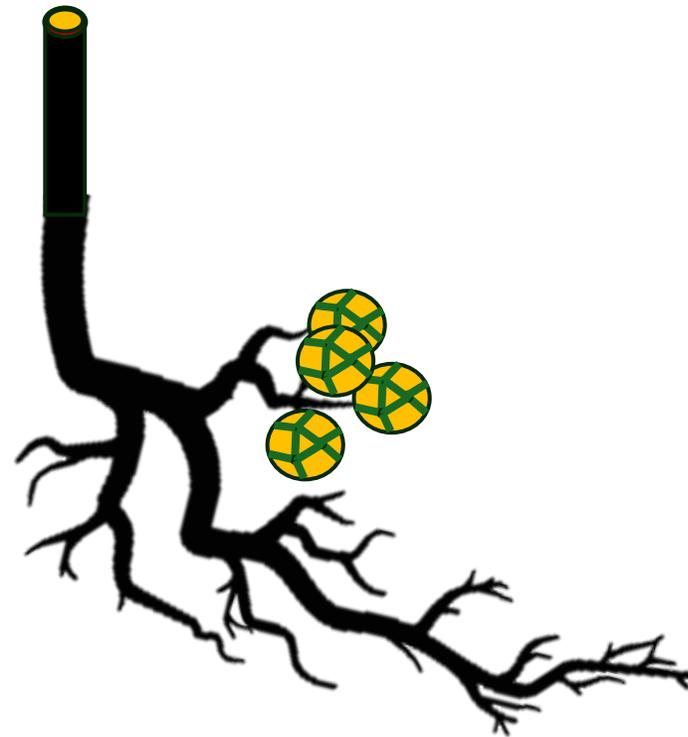
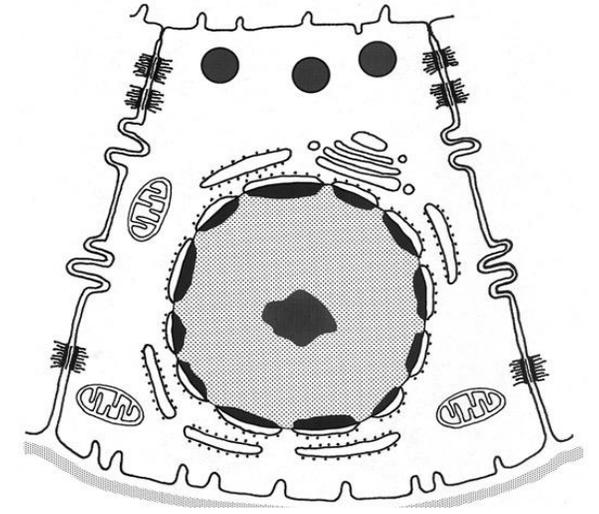


Lecture 3

Histology of Salivary Gland

Duct system



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2025

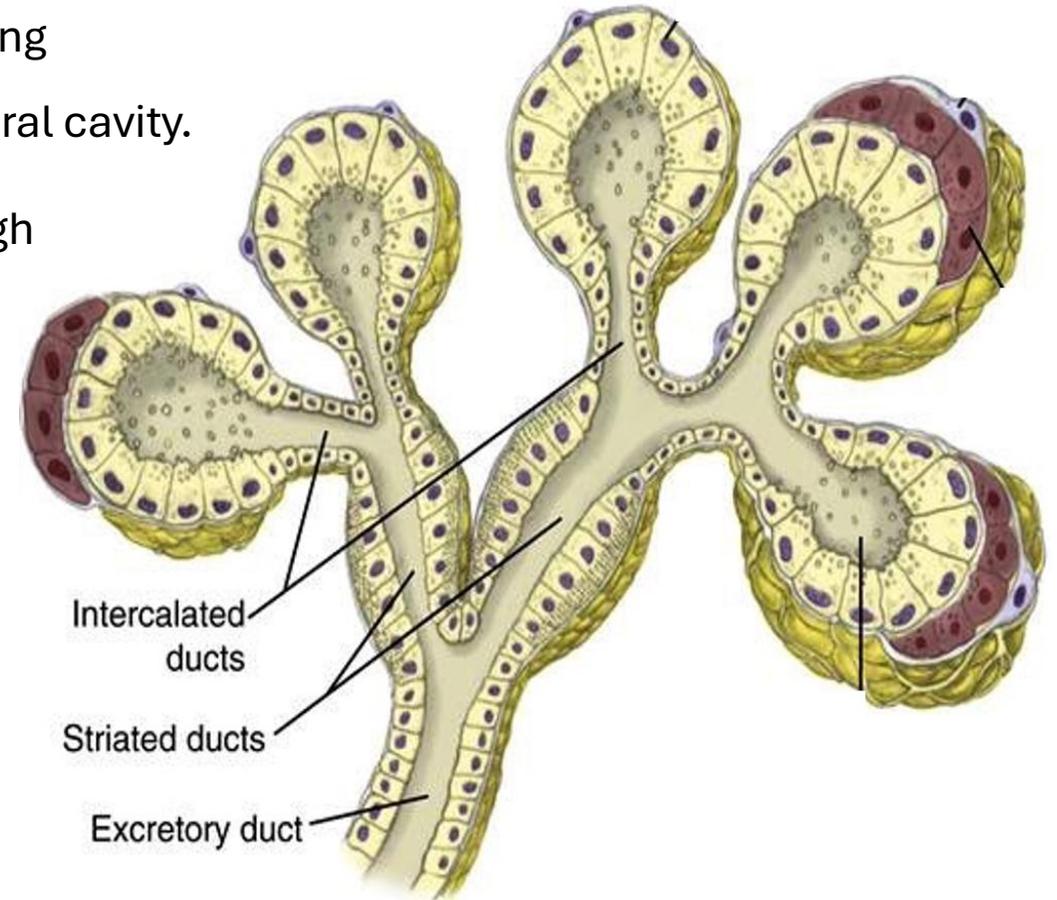
Duct system of salivary gland

Definition and functions:

- The **duct system of the salivary glands** is an epithelial branching network of channels that **transport** saliva from the acini to the oral cavity.
- It also plays a role in **modifying the composition** of saliva through absorption and secretion processes.

Types of ducts:

1. **Intercalated duct** = Intra-lobular duct.
2. **Striated duct** = Inter-lobular duct.
3. **Excretory duct** = Inter-lobular duct.
4. **Main excretory duct.**



1. Definition of Intra-lobular duct:

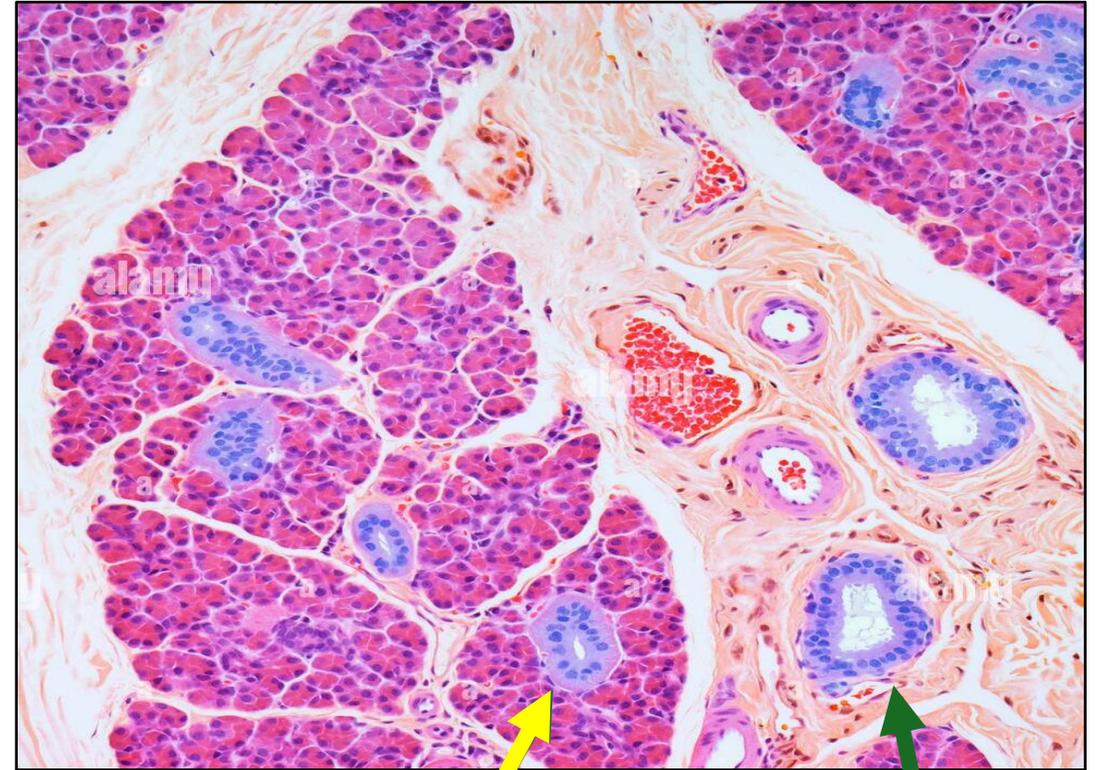
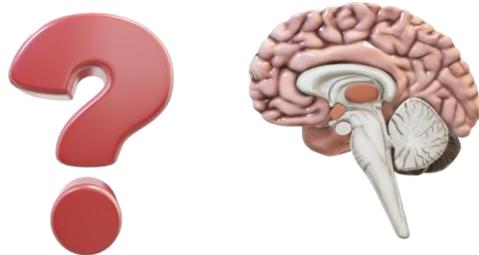
Intra-lobular duct is the duct that located within the salivary gland lobules

2. Definition of Inter-lobular duct:

Inter-lobular duct is the duct that located between the salivary gland lobules, within the connective tissue.

Structure of duct system:

All duct branches are composed of epithelial cells.



Intra-lobular duct

Intra-lobular duct

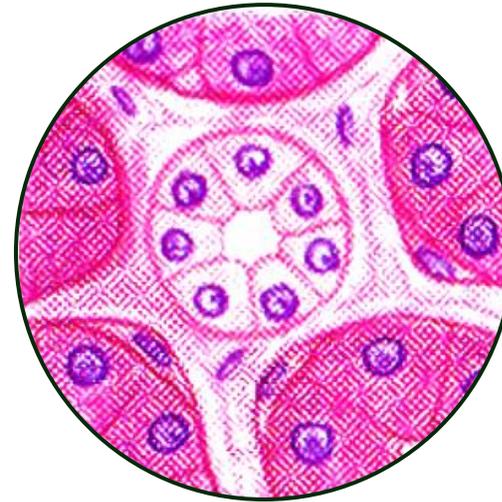
Intercalated Ducts

❖ Definition:

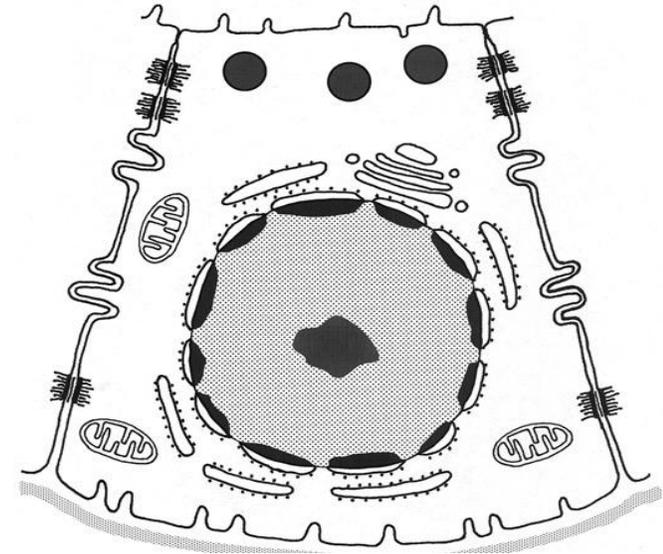
Intercalated duct is the smallest ducts, directly connected between the acini and the striated duct.

❖ Structure:

- Small round ducts lies between the acini.
- Narrow lumen and small diameter.
- Lined by **simple cuboidal epithelium**.



Intercalated duct



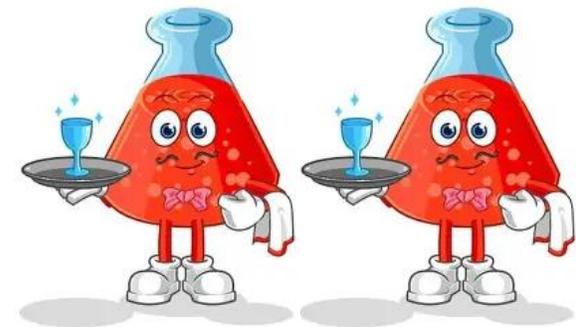
Intercalated duct cell

❖ Cell structure:

- Cuboidal cells with eosinophilic cytoplasm.
- Round central nucleus and little cytoplasm.
- RER, Golgi and secretory granules.
- The cells are attached together by junctional complex.

❖ Functions of intra-lobular duct:

- It continues to secrete saliva from cells situated adjacent to the acini.
- Transport the saliva from the acini to the striated duct.
- Modification of the saliva through:
 1. Secrete bicarbonate ions (HCO_3^-) into saliva.
 2. Absorb chloride ions (Cl^-) from saliva.



Striated Ducts

❖ Definition:

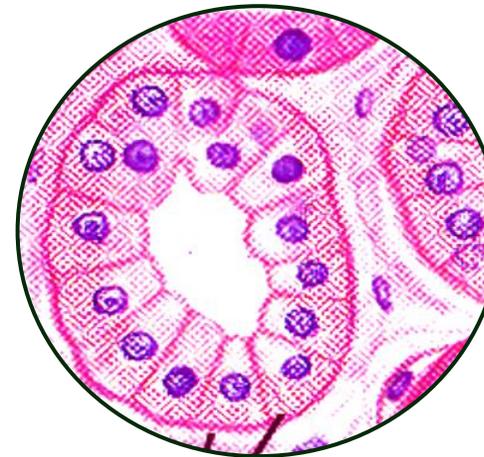
Striated duct is the ducts connected between the intercalated duct and the excretory duct.

❖ Structure:

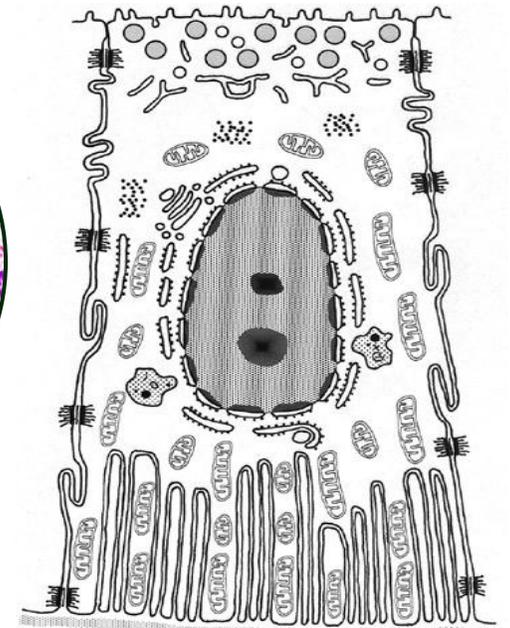
- Striated Ducts are larger than intercalated ducts and wide lumen.
- Striated Ducts are lined by **simple columnar** cells with eosinophilic cytoplasm and oval nucleus.

❖ Cell structure:

- RER, Golgi and mitochondria.
- The basal part of the cells appears striated with enfolded plasma membrane that contain mitochondria.
- The cells are attached together by junctional complex.



Striated duct



Striated duct cell

❖ Functions of striated duct:

- Transport the saliva from the intercalated duct to the excretory duct.
- **Modification of the saliva through:**
 1. Absorb chloride ions (Na^+) and (Cl^-) from saliva.
 2. Secrete (HCO_3^-), (Ca^{++}), and (K^+) into saliva.
- These changes make saliva hypotonic compared to plasma.



Excretory Ducts

❖ Definition:

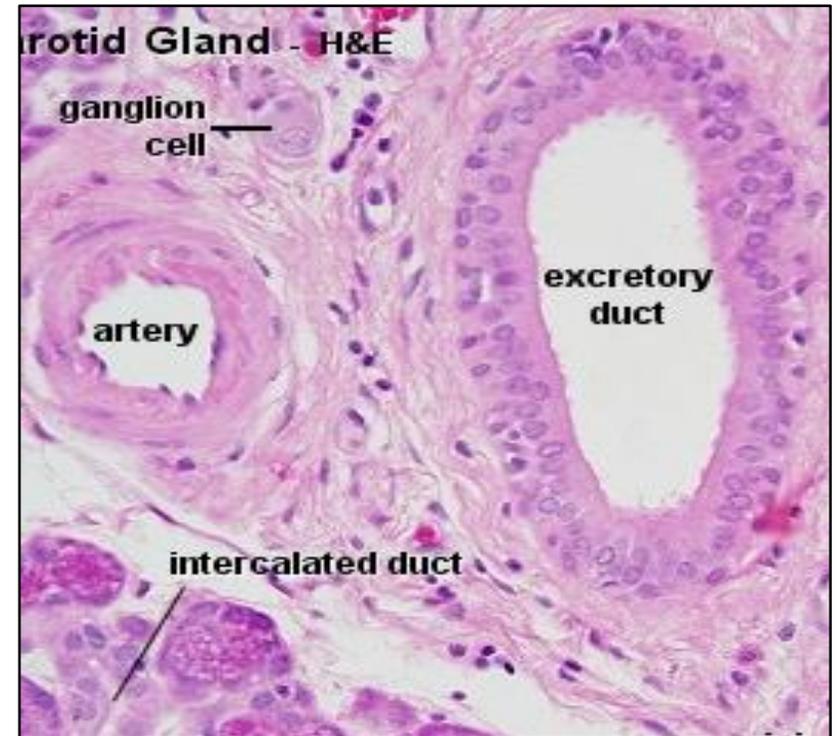
Excretory duct is a duct transmit saliva from striated duct to the oral cavity.

❖ Types and structure:

1. Inter-lobular excretory ducts are composed of pseudostratified columnar epithelium.
2. Main excretory ducts are composed of stratified squamous epithelium like the oral cavity..

❖ Functions:

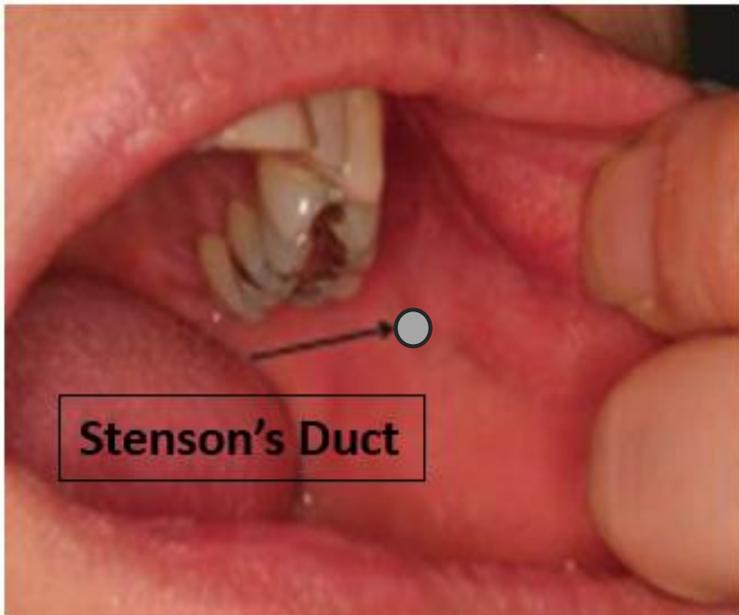
- Transport the saliva to the oral cavity.
- Modification of saliva.



Main excretory ducts of Major Salivary Glands:

Parotid gland

- The main excretory duct of parotid gland is termed **Stensen's duct** .
- **Stensen's duct** opens near the upper second molar.



Submandibular gland

- The main excretory duct of submandibular gland is termed **Wharton's duct** .
- **Wharton's duct** opens at the floor of the mouth.



Sublingual gland

- The main excretory duct of sublingual gland is termed **Bartholin's duct** .
- **Bartholin's ducts** are 8-20 in number.
- **Bartholin's ducts** opens at the floor of the mouth.



Welcome