SALIVARY GLANDS

PRESENTED

BY

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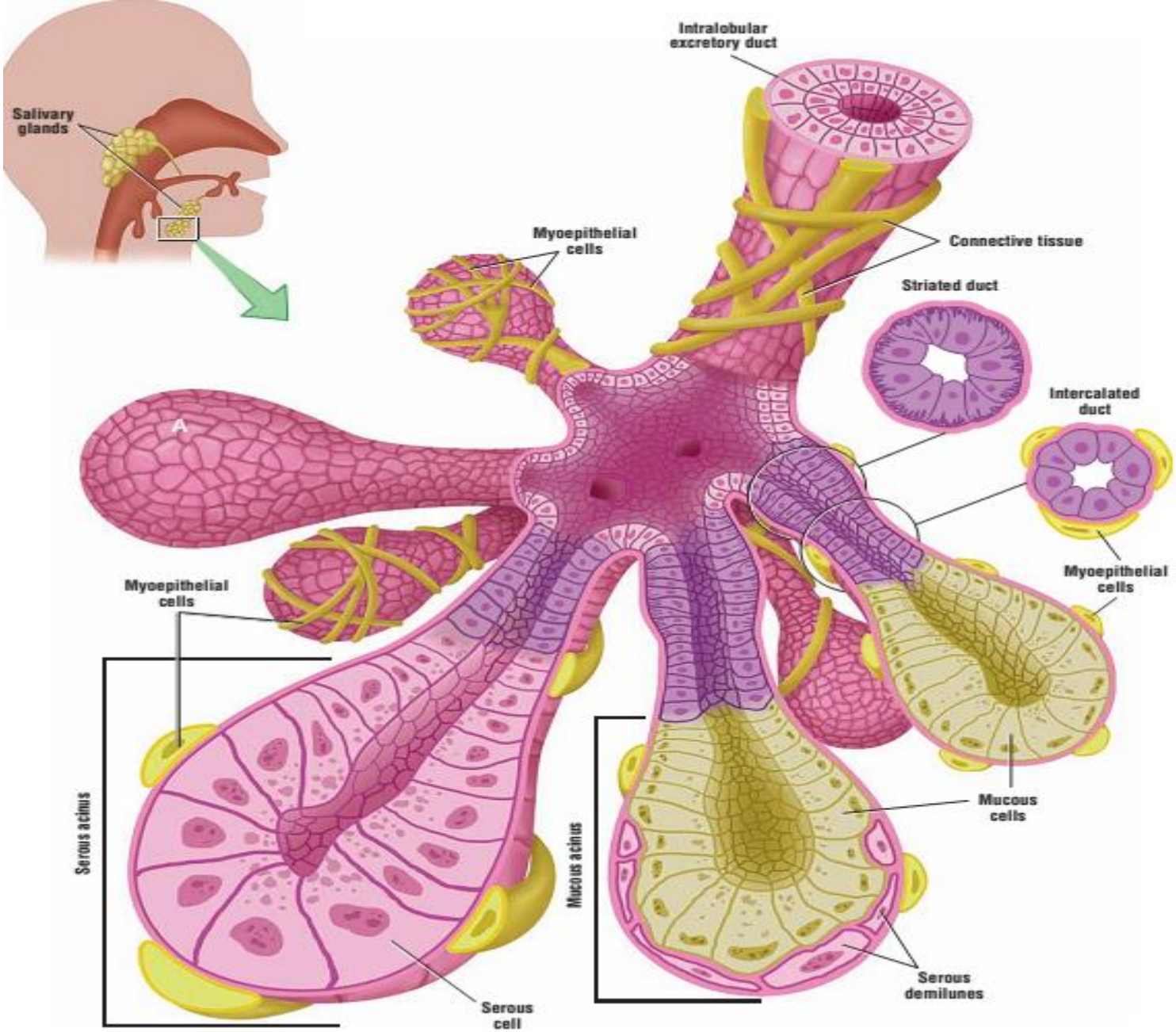
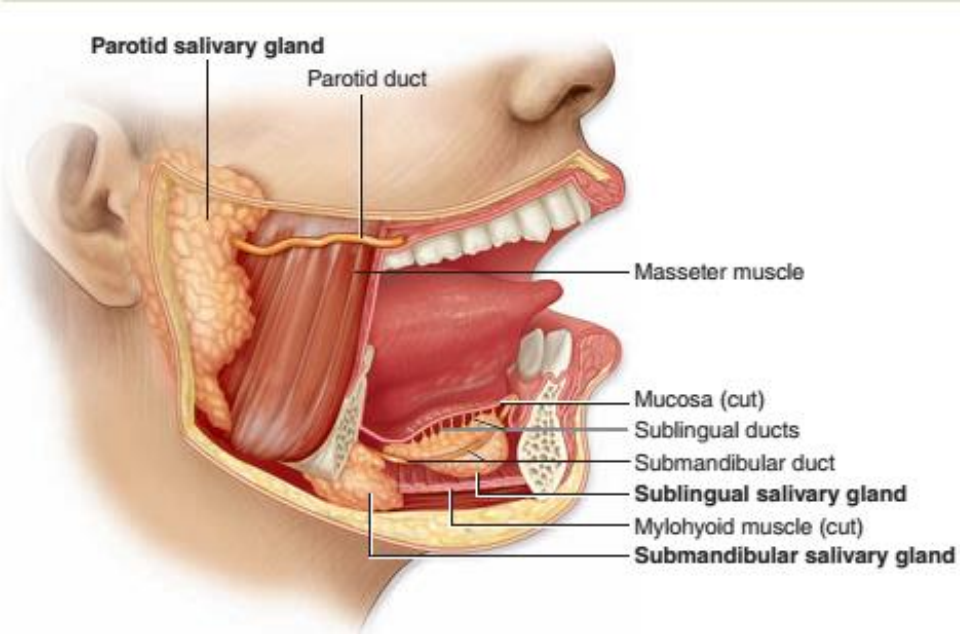

Salivary glands
Intralobular excretory duct
Myoepithelial cells
Connective tissue
Striated duct
Intercalated duct
A
Myoepithelial cells
Myoepithelial cells
Mucous cells
Serous acinus
Mucous acinus
Serous cell
Serous demilunes

Exocrine glands

- Exocrine glands in the mouth produce saliva.
- Which has digestive, lubricating, and protective functions.
- With a normal pH of 6.5 to 6.9.
- Saliva also has an important buffering function
- And in some species is also important for evaporative cooling.

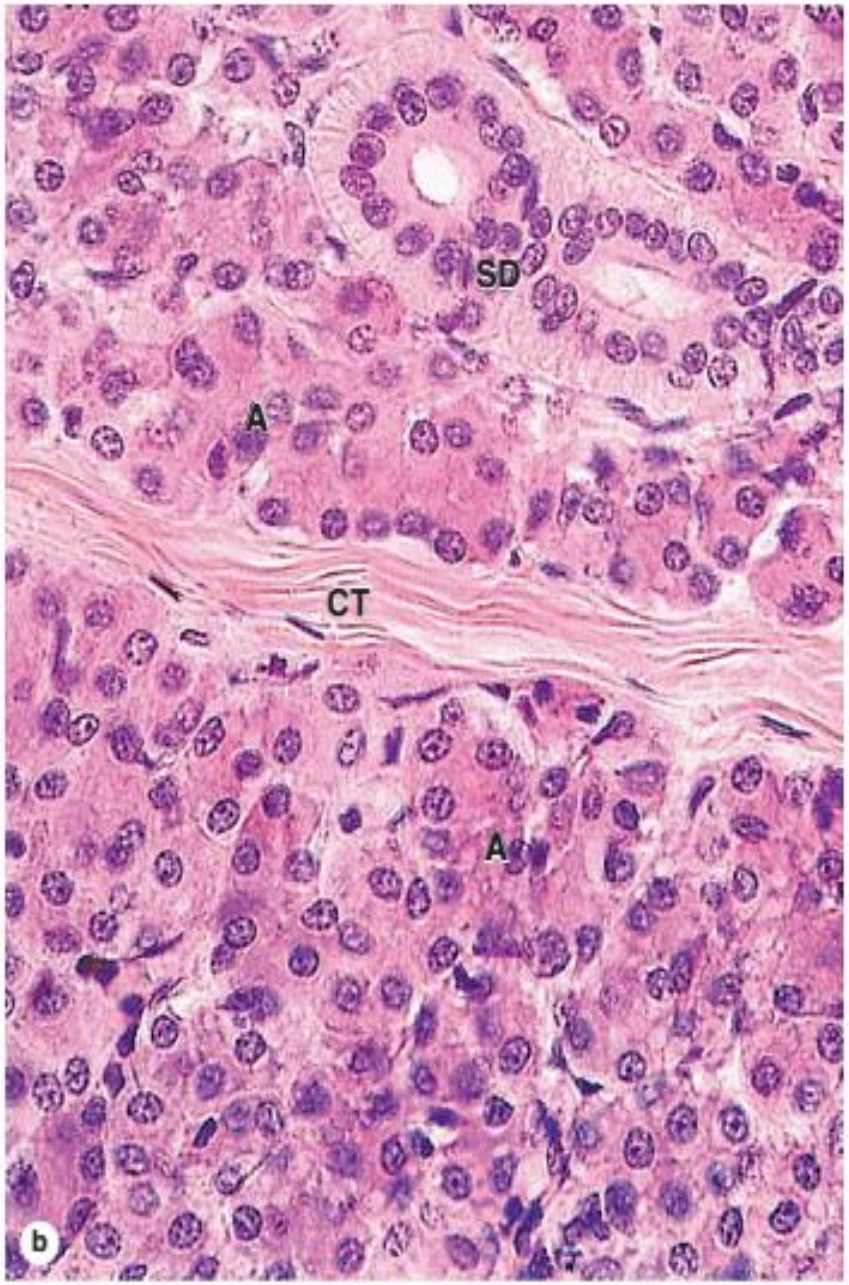


There are three pairs of large salivary glands:

- Parotid
- Submandibular
- Sublingual glands

Connective tissue capsule

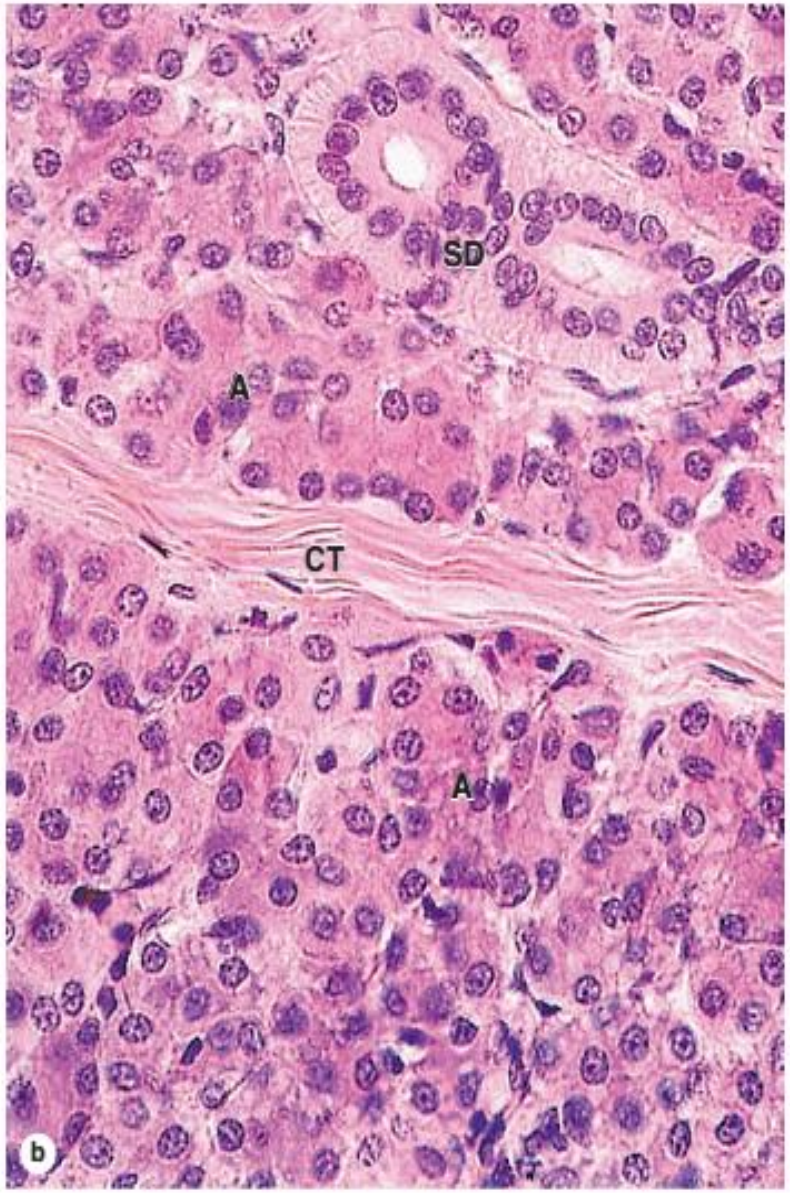
- Salivary glands are surrounded by C.T



Connective tissue capsule

Parenchyma of each Gland:-

- Consists of secretory units
- In which a branching duct system arranged in lobules ,Separated by septa of connective tissue.



TYPE OF SECRETION BY EACH GLAND

- **Serous**
- **Seromucous**
- **Or Mucous**

Saliva from the parotid Gland:-

Is serous and watery.

Submandibular and sublingual glands

Produce a seromucous secretion

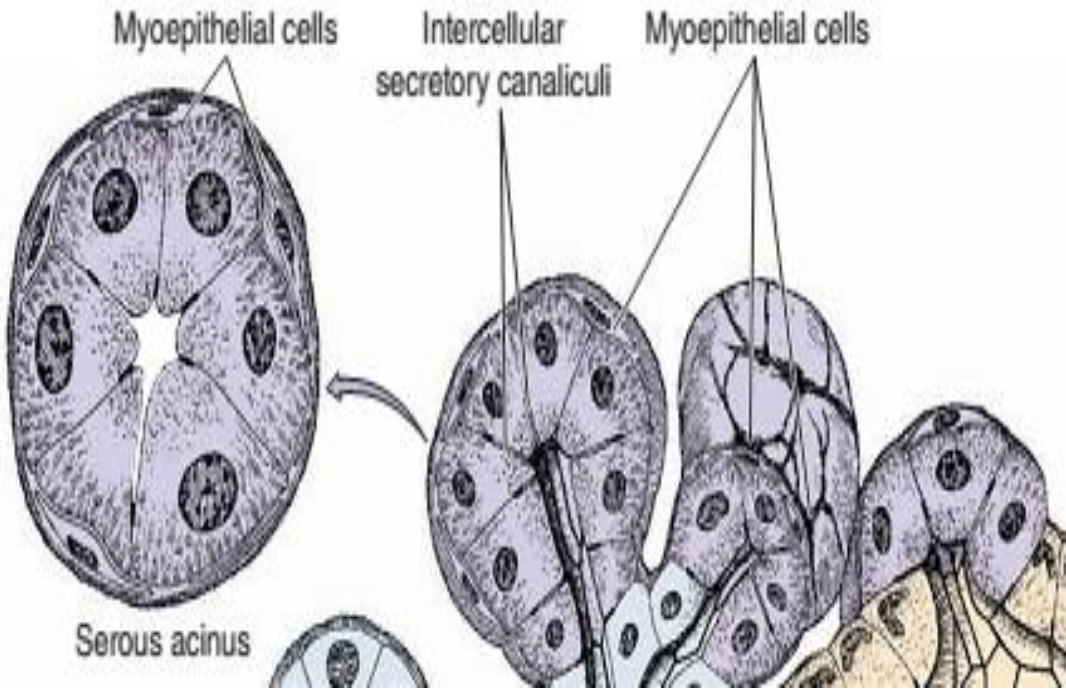
Minor glands is mostly mucous.

- Saliva is modified by the cells of the duct system draining the secretory units
- With much Na^+ and Cl^- reabsorbed
- While certain growth factors and digestive enzymes are added

Three epithelial cell types comprise the salivary secretory units:

■ Serous cells

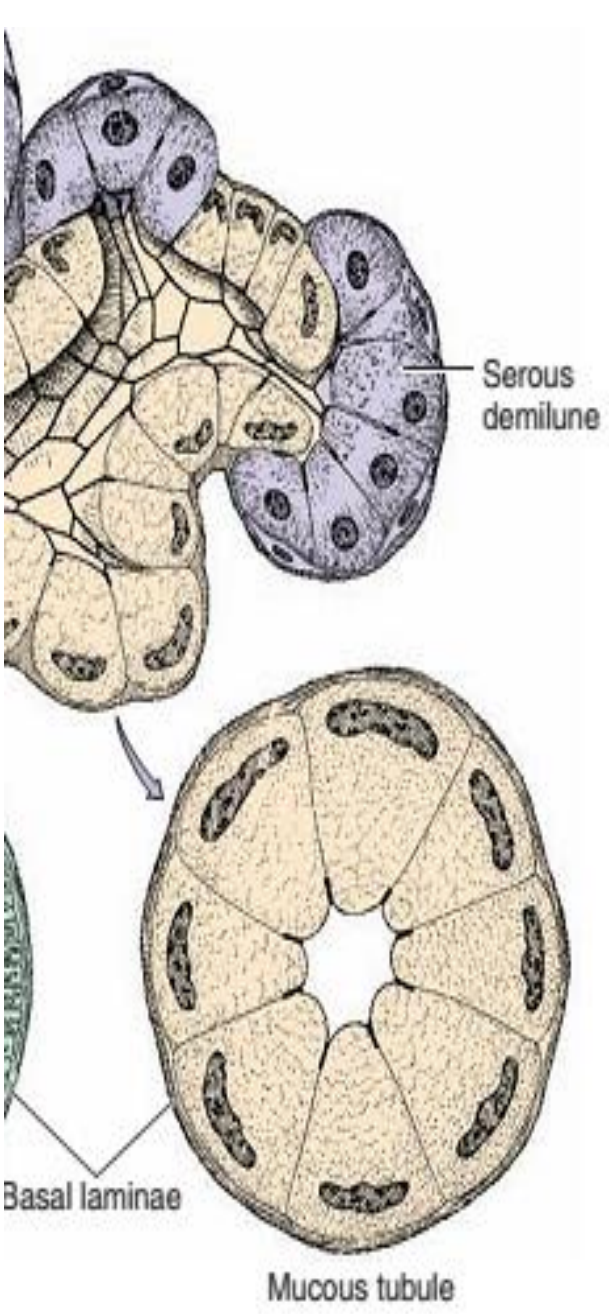
- ❖ Usually pyramidal in shape,
- ❖ With round nuclei, well-stained RER, and apical secretory granules .
- ❖ Joined apically by tight and adherent junctions
- ❖ Serous cells form a somewhat spherical unit called an acinus (L. grape),with a very small central lumen
- ❖ Serous acinar cells secrete enzymes and other proteins



Three epithelial cell types comprise the salivary secretory units

Mucous cells:-

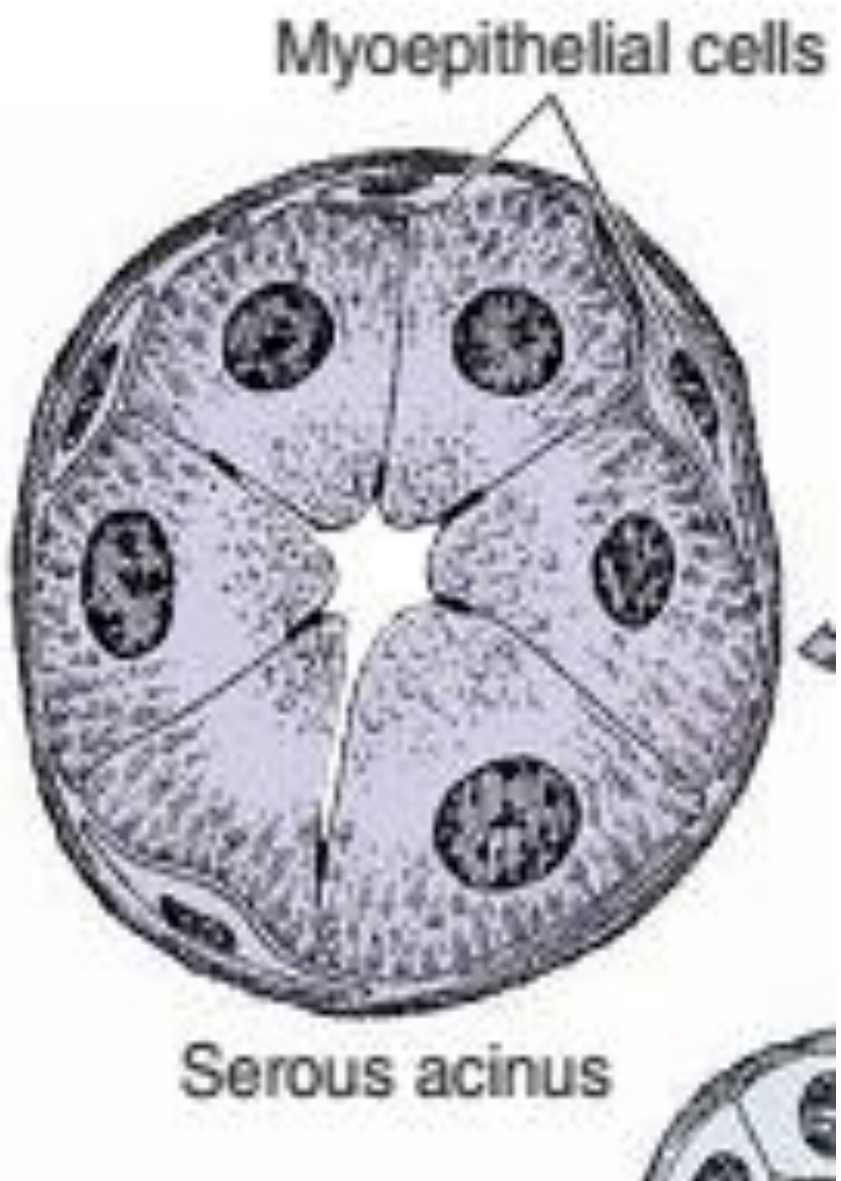
- Are somewhat more columnar in shape,with more compressed basal nuclei
- Mucous cells contain apical granules with hydrophilic mucins
- That provide lubricating properties in saliva
- But cause poor cell staining in routine preparations.
- Mucous cells are organized as cylindrical tubules rather than acini.
- Mixed salivary glands have tubuloacinar secretory units with both serous and mucous secretion.



Three epithelial cell types comprise the salivary secretory units

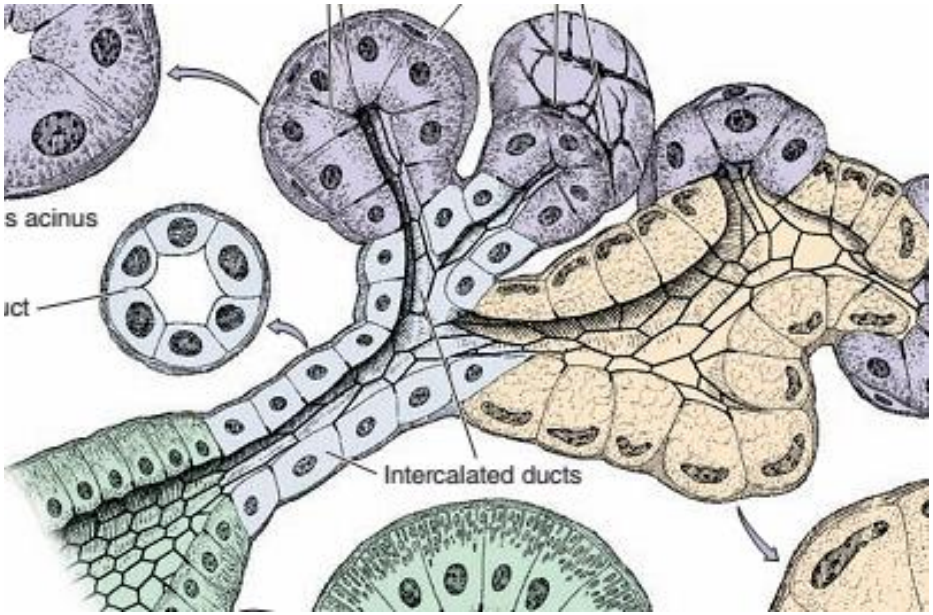
Myoepithelial cells

- Are found inside the basal lamina surrounding acini tubules.
- And the proximal ends of the duct system .
- These small, flattened cells extend several contractile processes around the associated secretory unit or duct
- And their activity is important for moving secretory products into and through the ducts.



In the Intralobular duct system

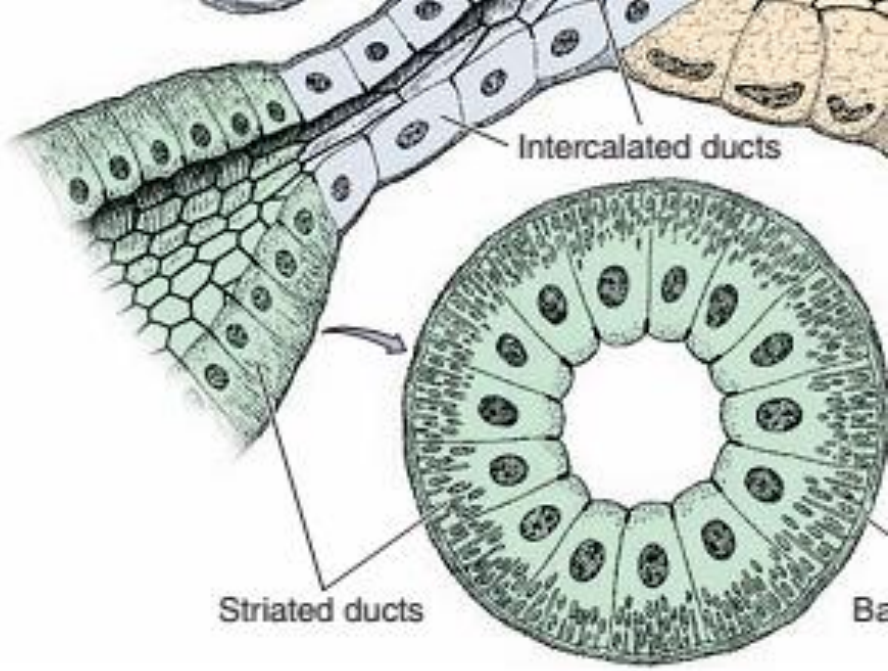
- Secretory acini and tubules empty into short intercalated ducts
- lined by cuboidal epithelial cells
- And several of these ducts join to form a striated duct.

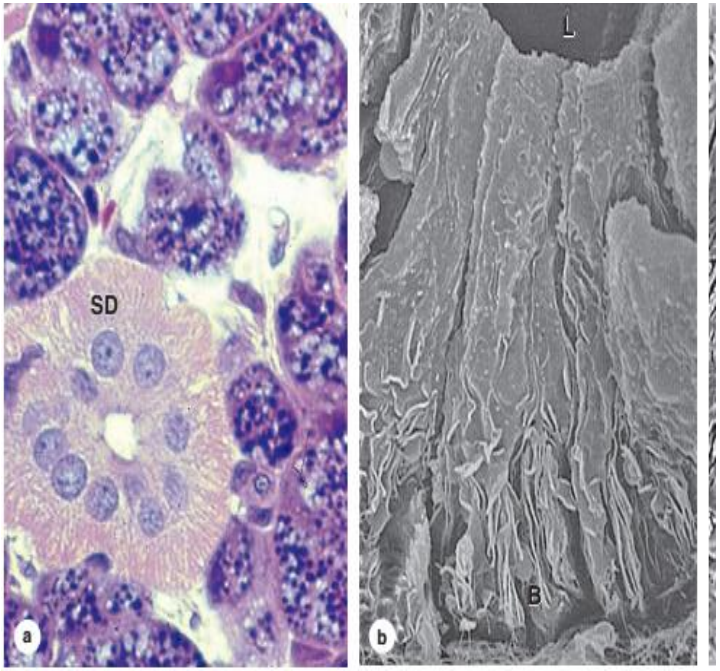


In the Intralobular Duct System

Columnar striated duct Cells

- Have many infoldings of their basolateral membrane
- With numerous mitochondria.



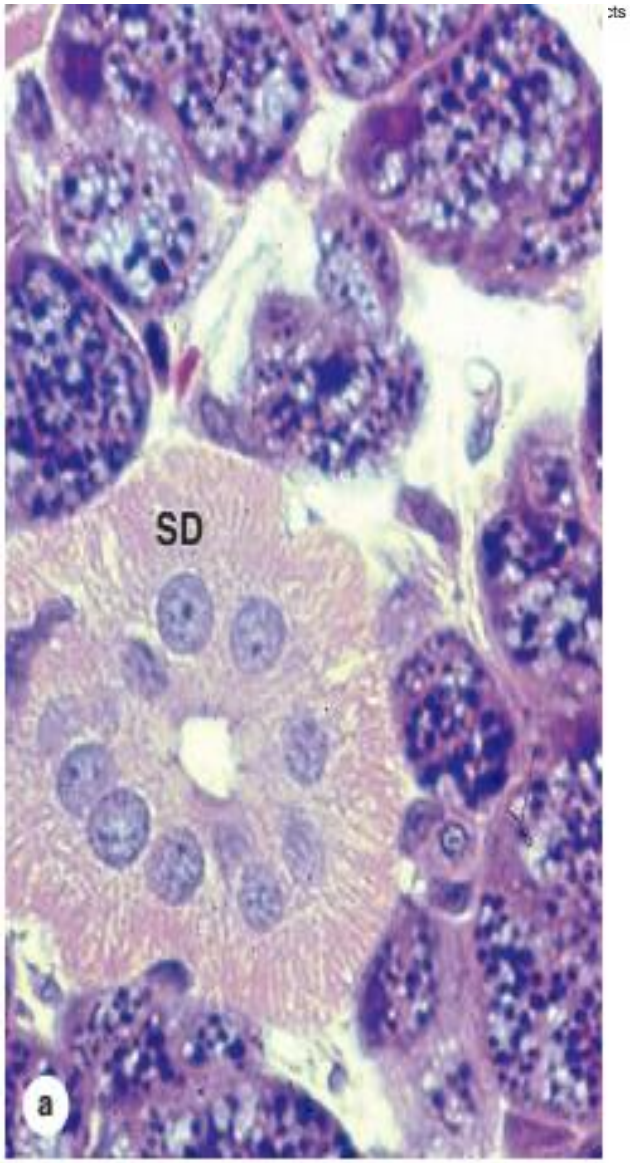


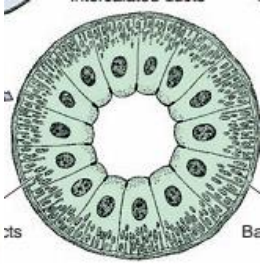
In the Intralobular Duct System

Columnar striated duct cells

By light microscopy:-

- Appear as faint basal striations radiating toward the nuclei .
- Striated ducts reabsorb Na + ions from the initial secretion.
- Their folded cell membranes present a large surface area making the secretion slightly hypotonic.





Release of IgA

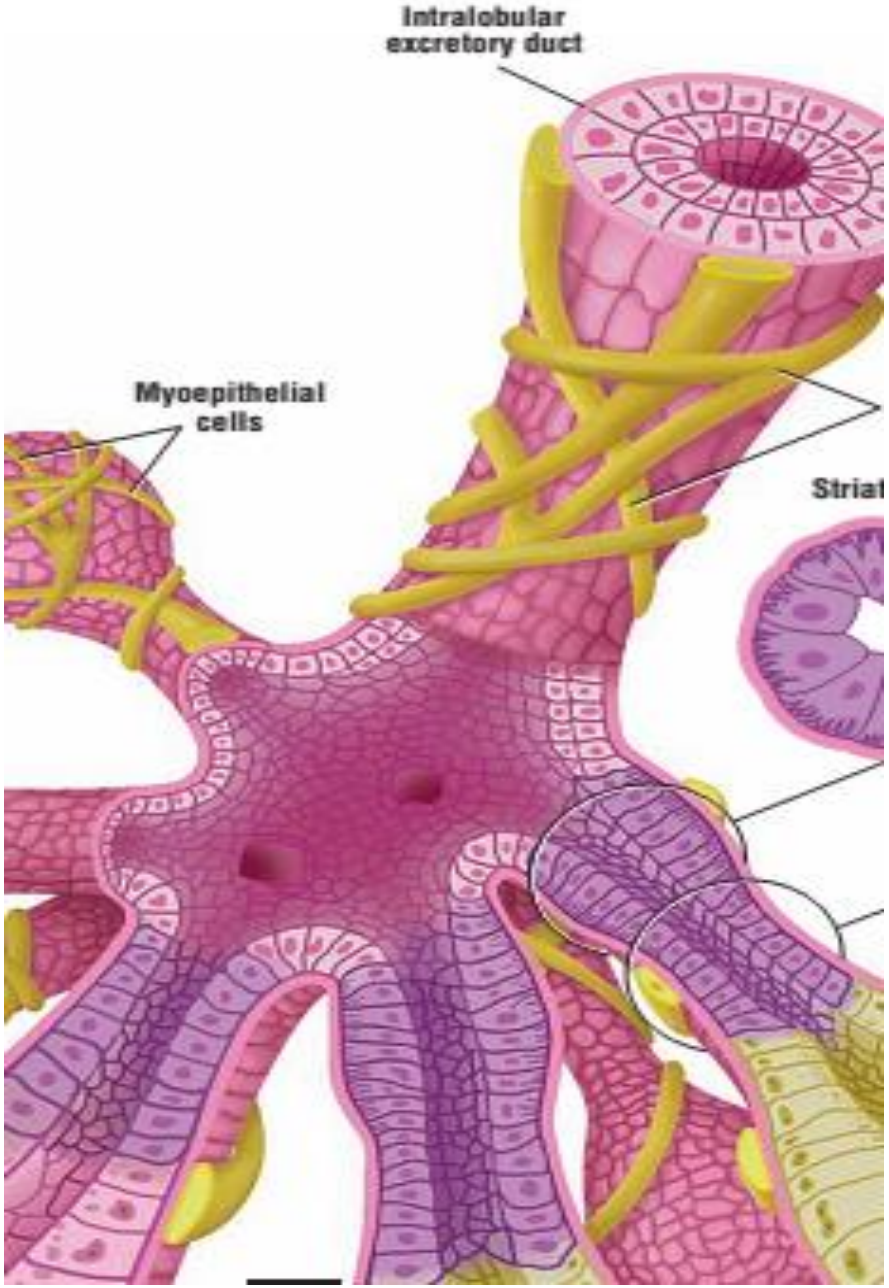
❑ Plasma cells:-

Present in the connective tissue that surrounding the small intralobular ducts release IgA

IgA forms a complex with the secretory component synthesized by the epithelial cells of the serous acini .

Transferred into the saliva.

IgA complex provides defense against Specific pathogens in the oral cavity.



Interlobular excretory ducts

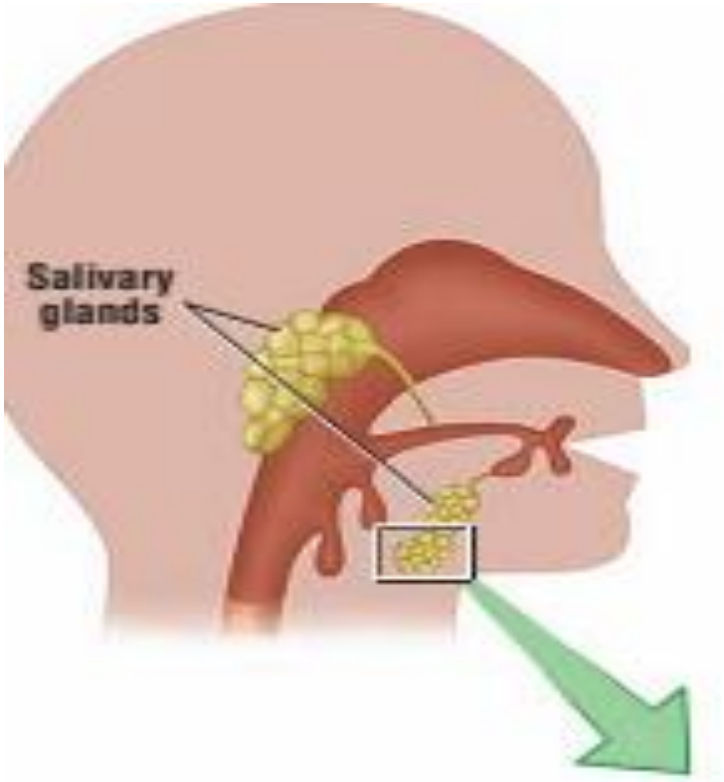
Ducts from each lobule converge and drain into interlobular excretory ducts.

- The lining of these ducts is unusual Including :-

Simple cuboidal or columnar, stratifid cuboidal or columnar, and pseudostratifid epithelia, distributed in no apparent pattern.

- Before emptying into the oral cavity.

The main duct of each gland is lined with nonkeratinized stratifid squamous epithelium.



Features specific to each group of major salivary glands

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Parotid Glands

Location:-

- In each cheek near the ear.

Type of gland:-

- Branched acinar glands with exclusively serous acini.

Secrete:-

- Abundant α-amylase
- That initiates hydrolysis of carbohydrates and
- Proline-rich proteins with antimicrobial
- And other protective properties.

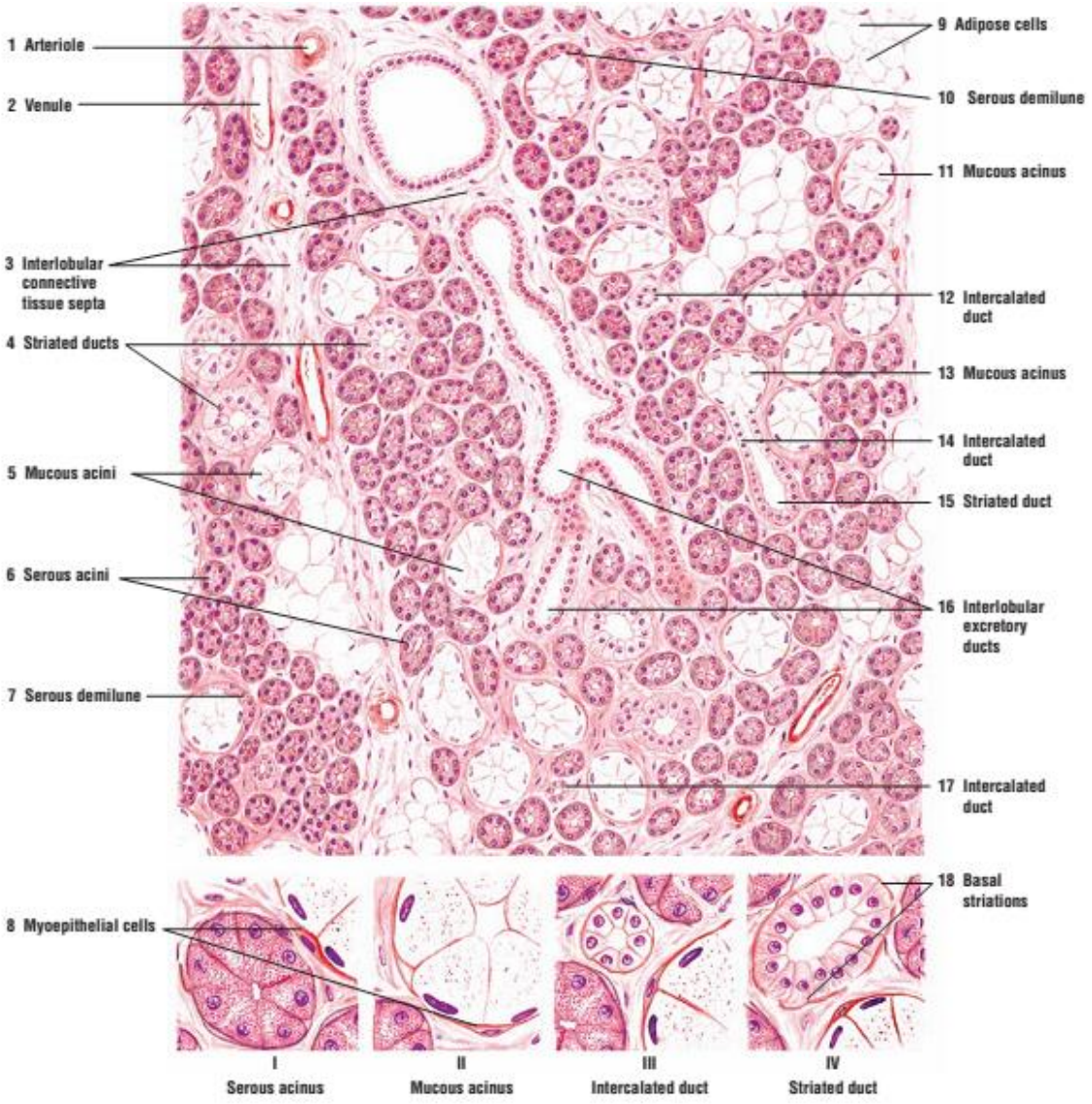
Submandibular Salivary Gland

Submandibular salivary gland is also a compound tubuloacinar gland.

- However, the submandibular gland is a mixed gland

- containing both serous and mucous acini, with serous acini predominating.

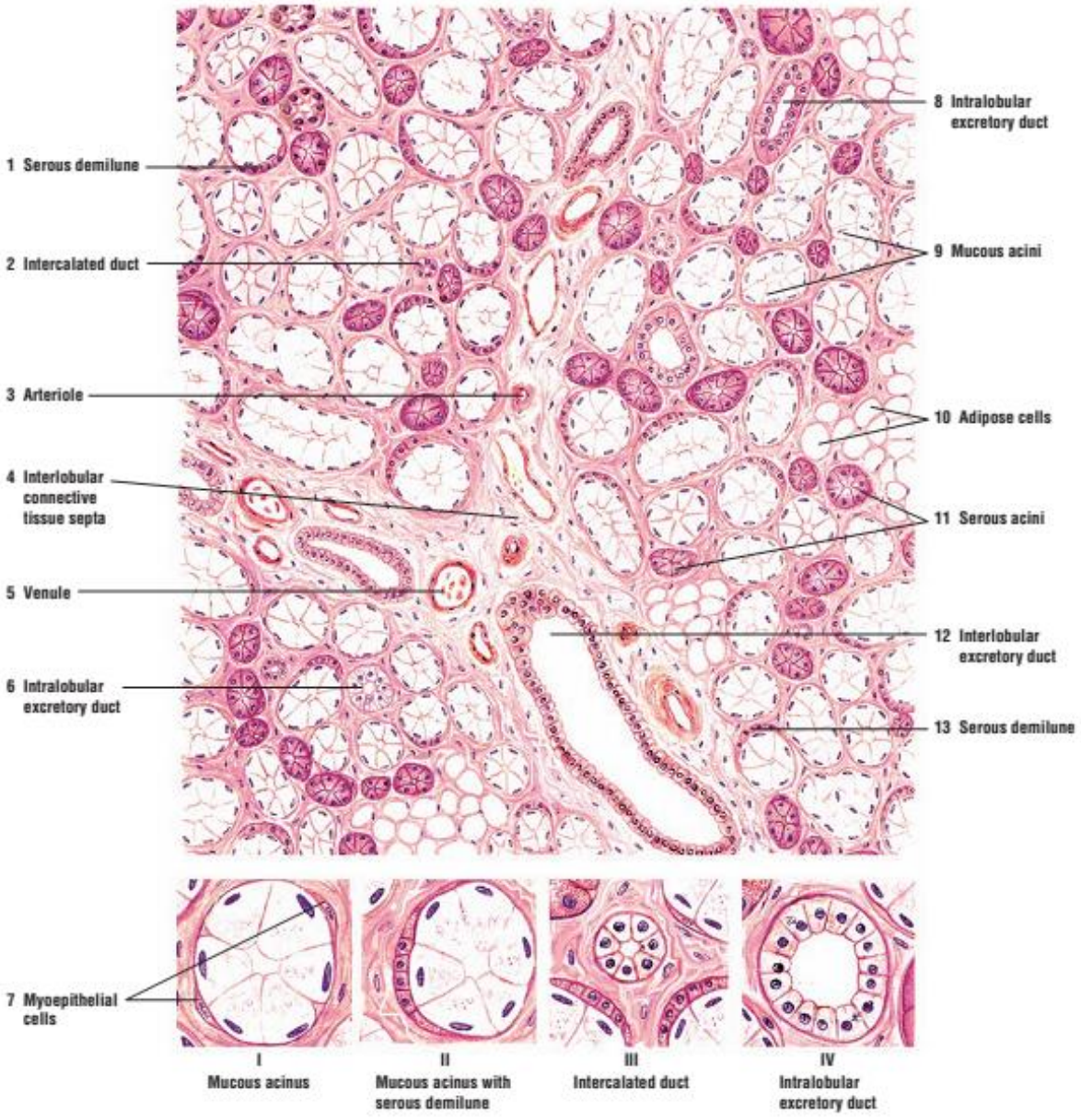
- The presence of both serous and mucous acini distinguishes the submandibular gland from the parotid gland, which is a purely serous gland.



sublingual salivary gland

Sublingual salivary gland is also a compound, mixed tubuloacinar gland

- that resembles the submandibular gland because it contains both **serous (11)** and **mucous acini (9, I, II).**



Salivary gland dysfunction

- Affects the flow, amount, or quality of saliva produced.
- A reduced salivation is termed *hyposalivation*. Hyposalivation often results in a dry mouth condition called xerostomia
- And this can cause tooth decay due to the loss of the protective properties of saliva.
- Hypersalivation is the overproduction of saliva and has many causes.

Infective

Infections involving the salivary glands

can be Viral or bacterial (or rarely fungal).

- Mumps is the most common viral sialadenitis.
- It usually occurs in children
- And there is preauricular pain (pain felt in front of the ear)
- Swelling of the parotid, fever, chills, and headaches.

Infective

Infections involving the salivary glands

can be Viral or bacterial (or rarely fungal).

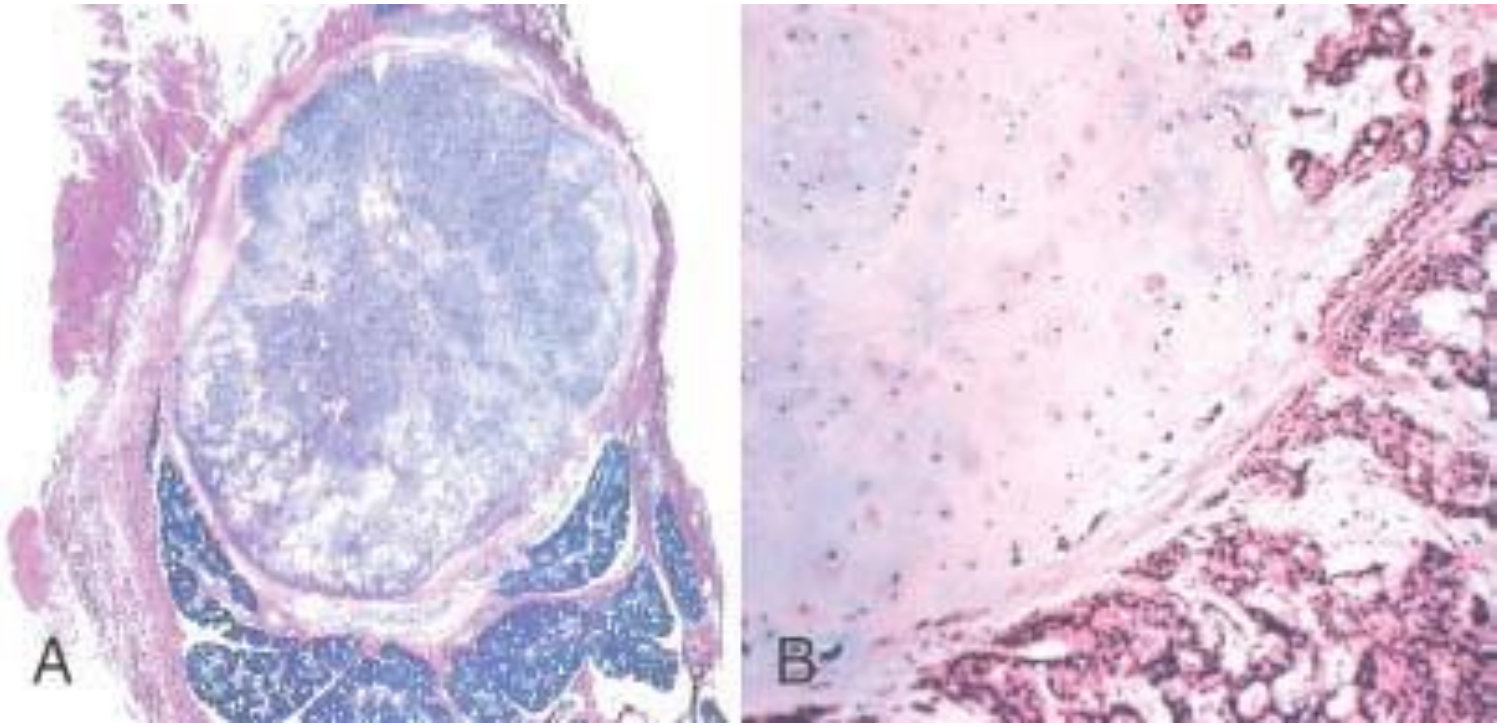
- Bacterial sialadentitis is usually caused by ascending organisms from the oral cavity.
- Risk factors include reduced salivary flow rate.
- Human immunodeficiency virus-associated salivary gland disease

Pleomorphic Adenoma

- *A,* Slowly enlarging neoplasm in the parotid gland of many years duration.
- *B,* The bisected, sharply circumscribed, yellow-white tumor can be seen surrounded by normal salivary gland tissue.

Pleomorphic adenoma.

A, Low-power view showing a well-demarcated tumor with adjacent normal salivary gland parenchyma.
B, High-power view showing epithelial cells as well as myoepithelial cells found within a chondroid matrix material.



Frey's syndrome

- The symptoms of Frey's syndrome are redness and sweating on the cheek area adjacent to the ear (focal hyperhidrosis). They can appear when the affected person eats, sees, dreams, thinks about or talks about certain kinds of food which produce strong salivation.

Frey's syndrome Cause

- Frey's syndrome often results as a side effect of surgeries of or near the parotid gland or due to injury to the auriculotemporal nerve,
- Which passes through the parotid gland in the early part of its course.
- The Auriculotemporal branch of the mandibular (V3) branch of the Trigeminal nerve carries parasympathetic fibers to the parotid salivary gland .
- As a result inappropriate regeneration
- The parasympathetic nerve fibers may switch course to a sympathetic response,
- Resulting in "gustatory Sweating" or sweating in the anticipation of eating, instead of the normal salivatory response.


Thank you!