

Salivary glands

Are exocrine glands in the mouth produce saliva.

- Has digestive, lubricating, and protective functions , with a usual pH of (6.5-7)
- saliva has buffering function
- Chemically, saliva is composed of 99.5% water and 0.5% solutes such as salts, dissolved gases, various organic substances, and enzymes.

Chemical digestion of starch begins with enzyme (salivary amylase)

Enzyme (lysozyme) helps destroy bacteria

Major salivary glands:

About 90% of saliva (0.75 to 1.50 L) daily s produced by three pairs of salivary glands:

1-The parotid below the ear

2-Submandibular is under lower edge of mandible.

3-Sublingual glands. is deep to the tongue in floor of mouth

The minor glands is found in mucosa and submucosa throughout the oral cavity which secrete 10% of the total volume of saliva.

A capsule of connective tissue surrounds each major salivary gland. Connective tissue septa originating from the capsule to form many lobules. The parenchyma of each consists **of Secretory pieces and branching duct system.**

The secretory portions are composed of acinus ,which are;

Serous acini , Mucous acini and Mixed

The secretion of each gland is either serous, mucous, or seromucous, depending on its glycoprotein mucin

• Serous acini

- Are pyramidal in shape, with a wide base resting on the basal lamina and a narrow apical surface facing the lumen which is small lumen in the center.
- In cytoplasm ,rounded nuclei, accumulation of rough ER in the basal third, and an apex filled with protein-rich secretory granul
- Myoepithelial cells are shown in the serous acini.

- **Mucous acini**

Have cytoplasm light-blue stained .The nuclei of mucous cells, are flattened ovoid shaped with condensed chromatin, are located near the bases of the cells.
secretion is thick; contains mucoprotein

- **Mixed acini**

Several serous cells as demilunes are attached eccentrically to the mucous acini .

- **The ducts system is include:**

- **Interlobular ducts: (inside the lobules)**

Which are:

- Intercalated ducts.

And striated duct (secretory duct)

- **Intercalated ducts:**

Thin and small duct their wall is lined by simple low cuboidal epithelium

- **The striated ducts:**

Are lined by simple columnar epithelium the electron microscopy show the basal striations created by membrane in folding and mitochondria reabsorbing sodium and excreting potassium;

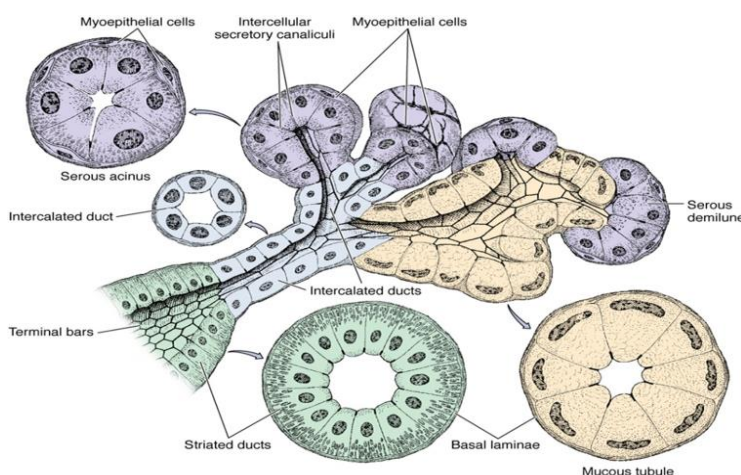
The ducts outside the lobules in connective tissue septa are:

Interlobular duct:

They are initially lined with pseudostratified or stratified cuboidal epithelium,

The distal parts of the excretory ducts are lined with stratified columnar .

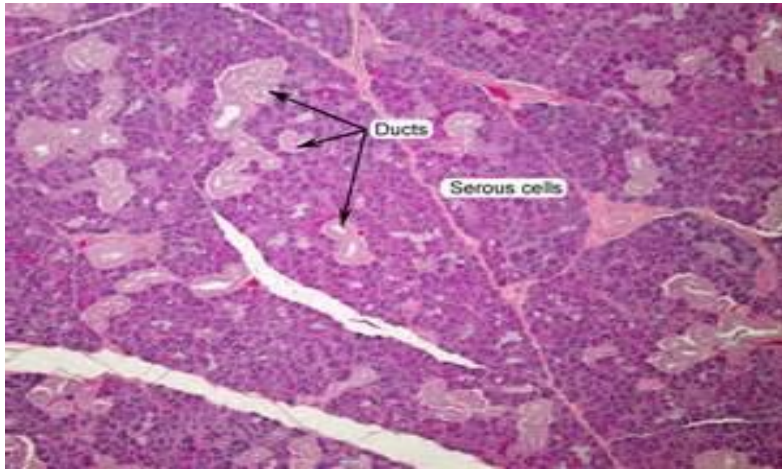
Main duct: near its orifice become stratify of squamous epithelium



The parotid gland :are pure serous gland ,have longer intercalated duct.

secrete 25% of saliva, more salivary amylase.

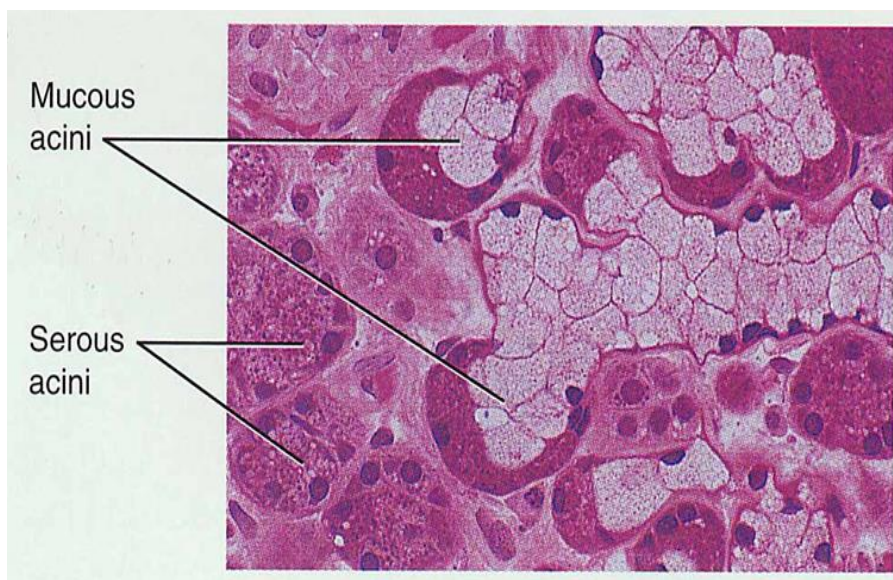
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The submandibular gland: are mixed gland, serous acini are more than mixed or mucous acini.

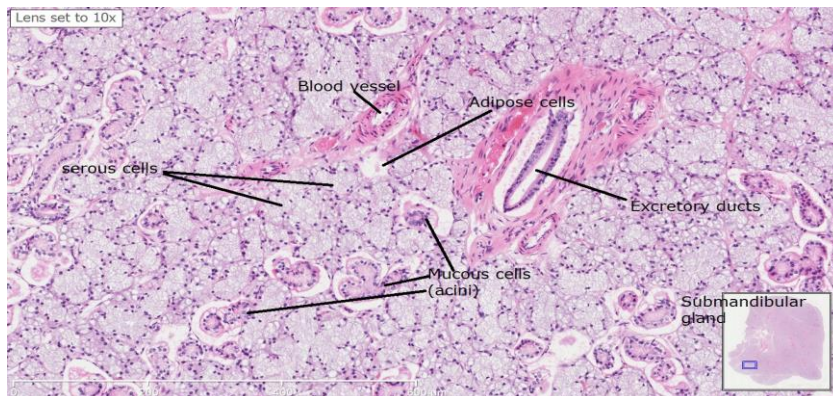
secrete 70% of saliva, less salivary amylase, more mucus.

Short intercalated duct, longer striated duct.



- **The sublingual gland:**

- Are mixed gland, mucous and mixed acini .
- predominant, more serous demilune
- without intercalated duct, obscure striated duct
- secrete 5% of saliva, most mucus



- In the large salivary glands, the connective tissue contains many lymphocytes and plasma cells. The plasma cells release IgA, which forms a complex with a secretory component synthesized by the epithelial cells of serous acini and intralobular ducts. The IgA-secretory complex released into the saliva resists enzymatic digestion and constitutes an immunologic defense mechanism against pathogens in the oral cavity.

(See your text book for the related fingers)