



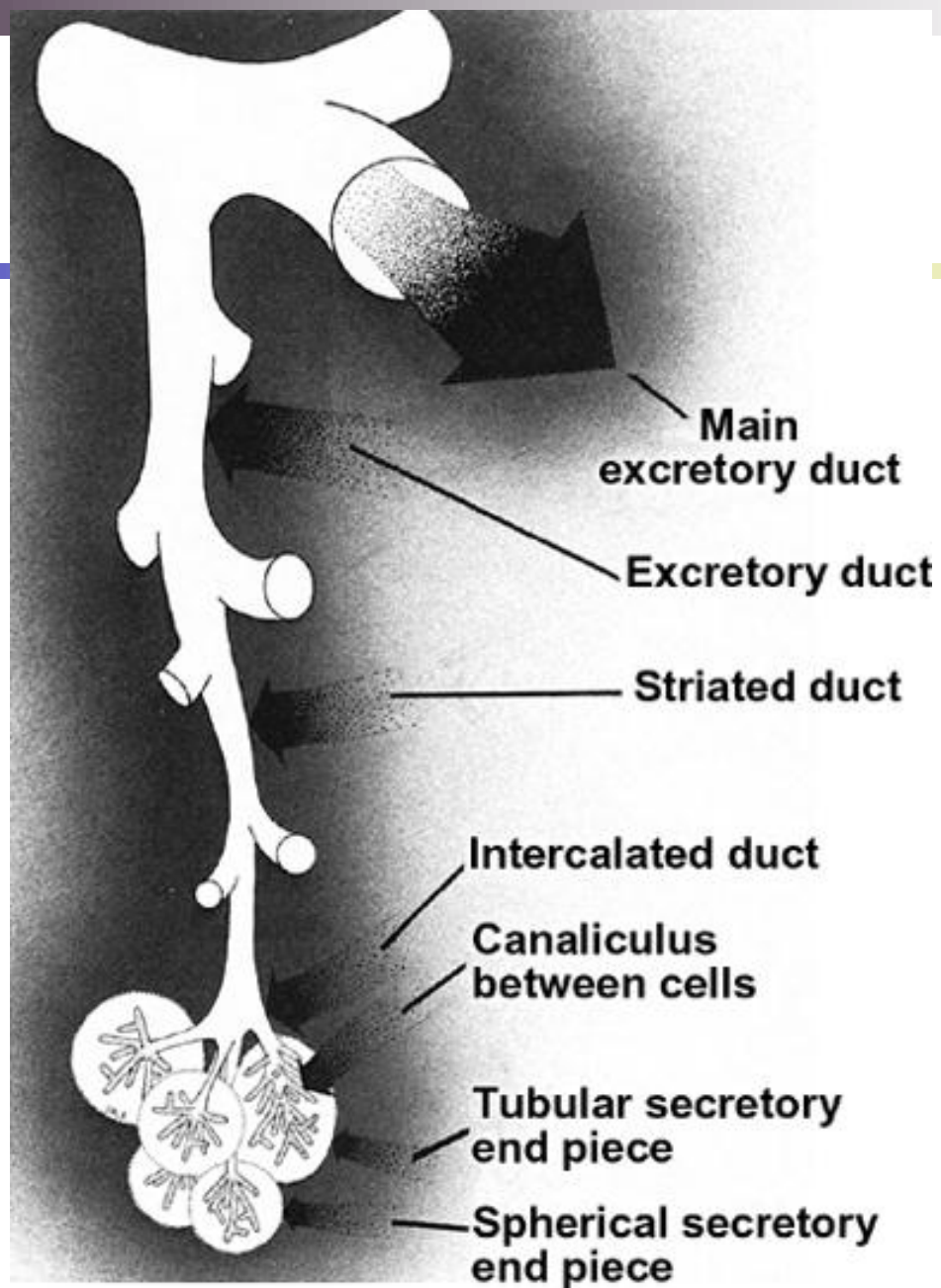
*IN THE NAME OF GOD*

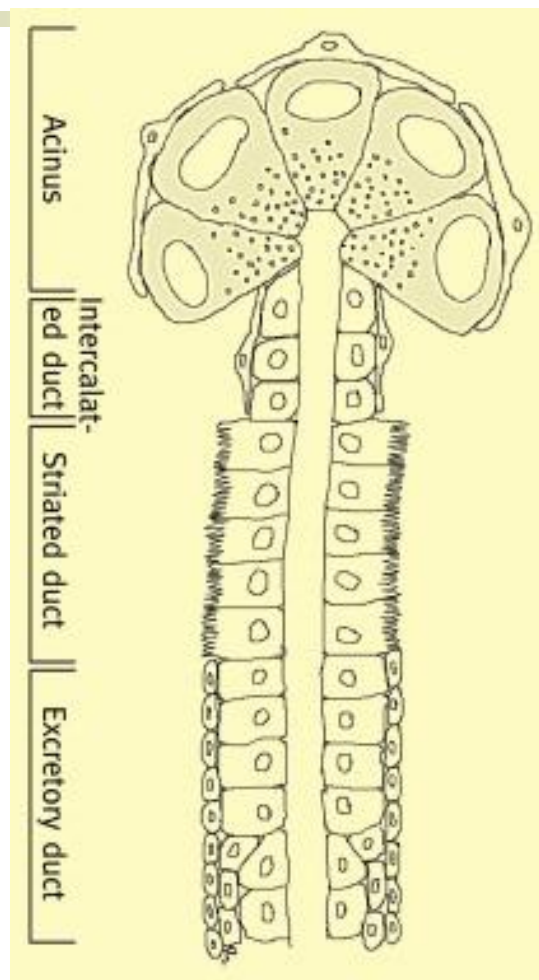
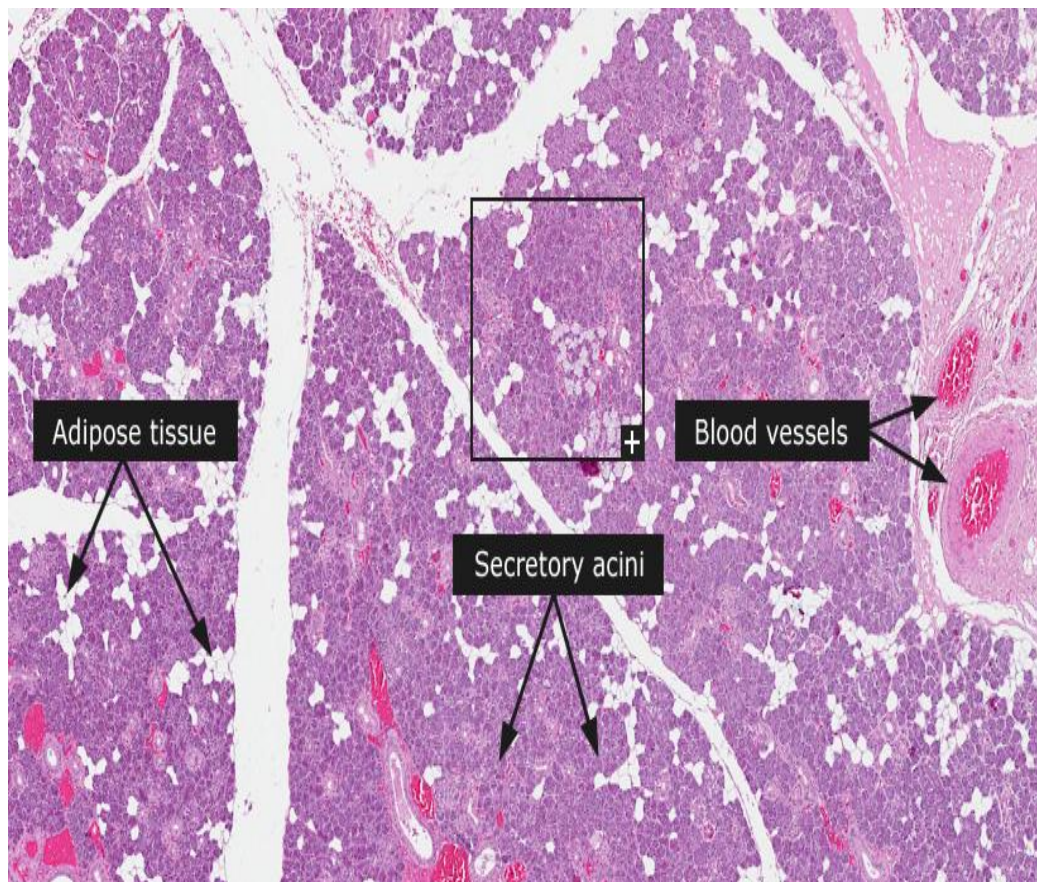
# Major glands

- **Parotid: so-called watery serous saliva rich in amylase, proline-rich proteins**
  - *Stenson's duct*
  
- **Submandibular gland**
  - *Wharton's duct*
  
- **Sublingual:**
  - *ducts of Rivinus; duct of Bartholin*

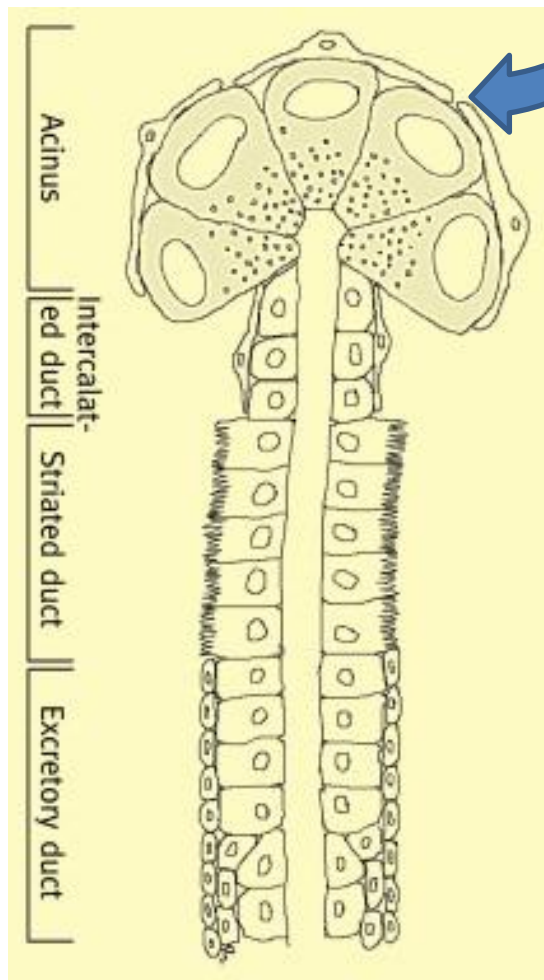
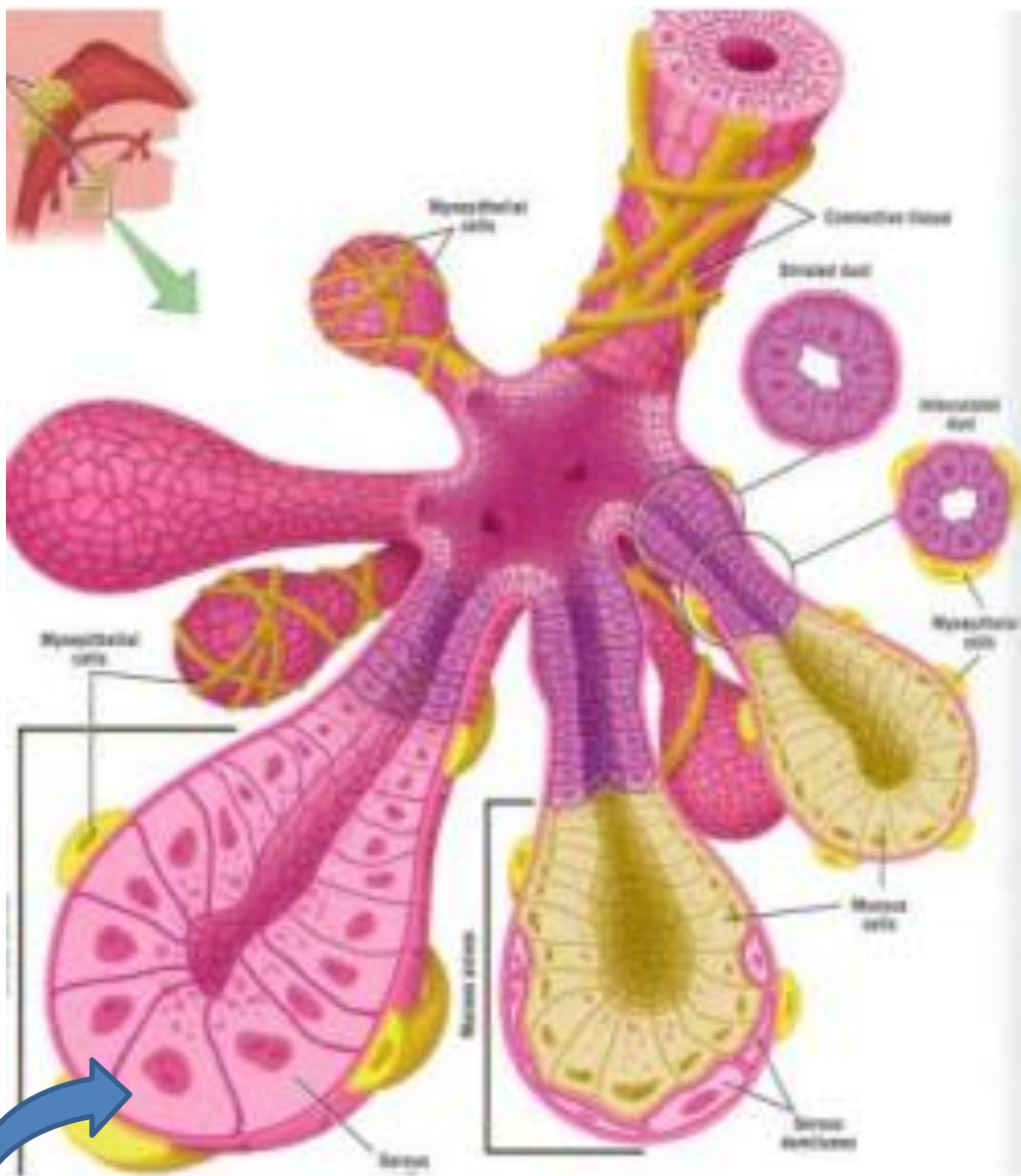
# Minor glands

- Minor salivary glands are not found within gingiva and anterior part of the hard palate
- Serous minor glands= von Ebner below the sulci of the circumvallate and foliate papillae of the tongue



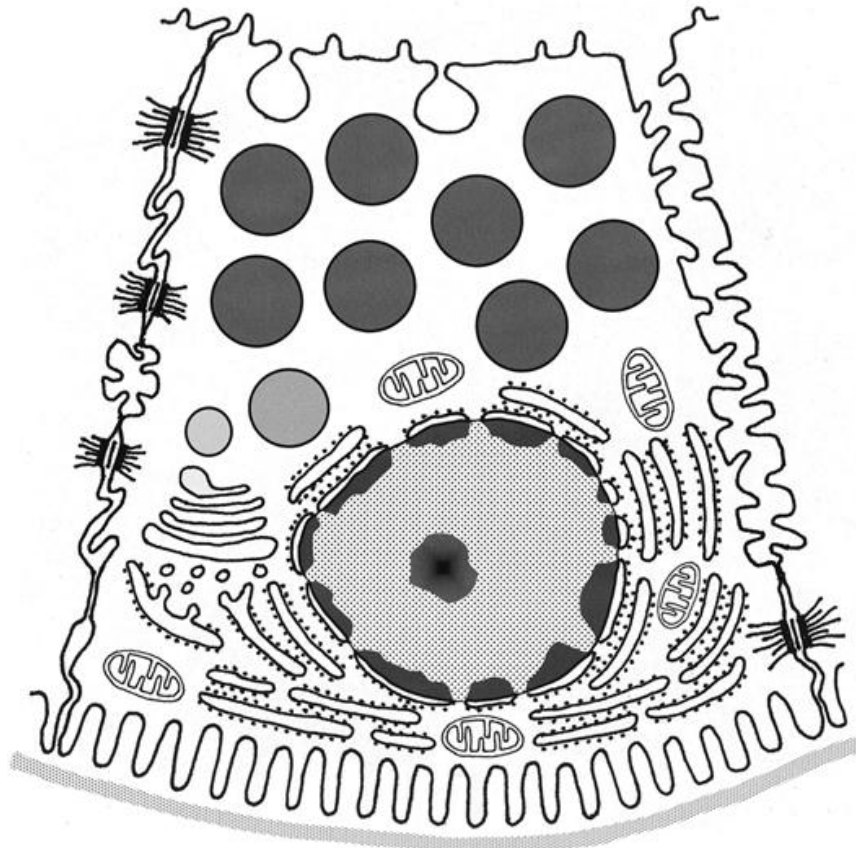


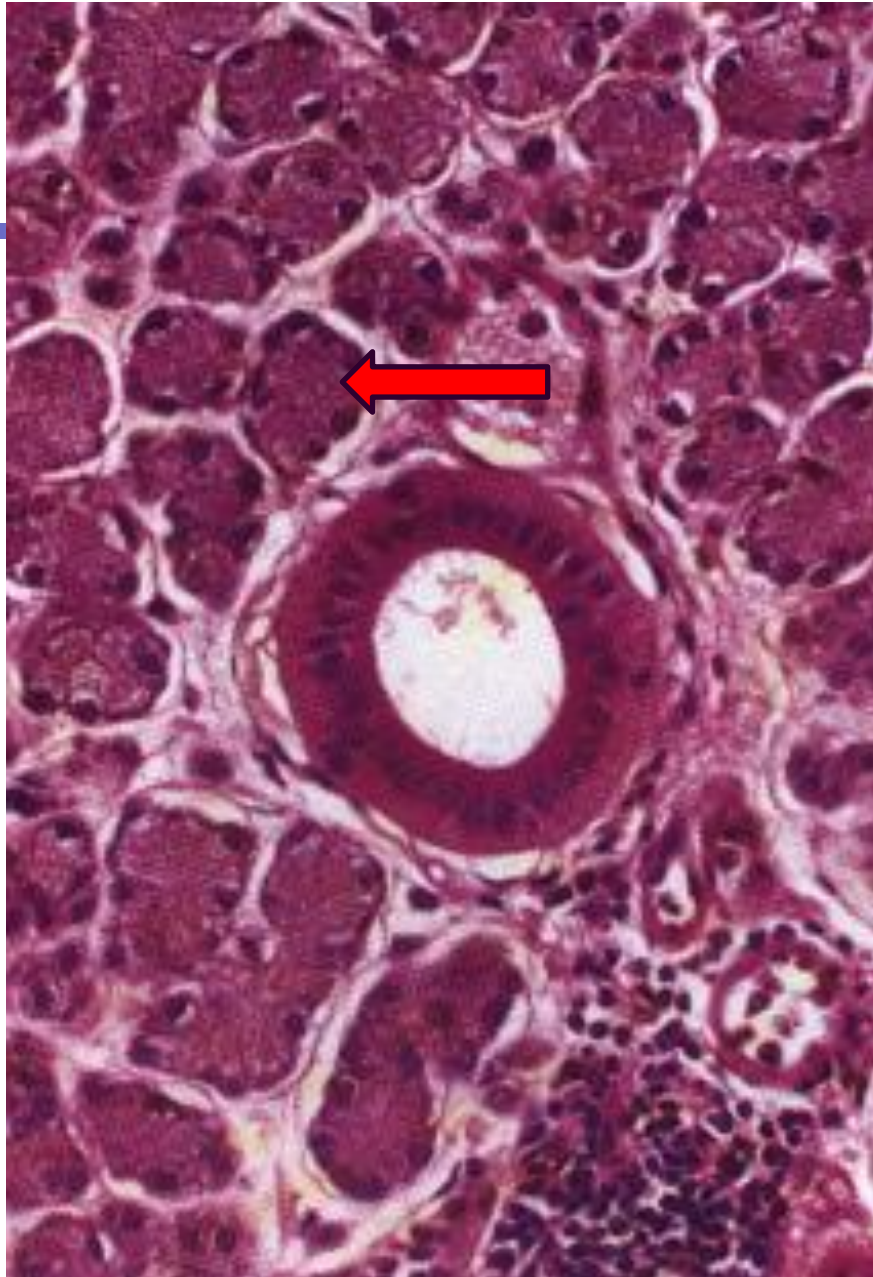




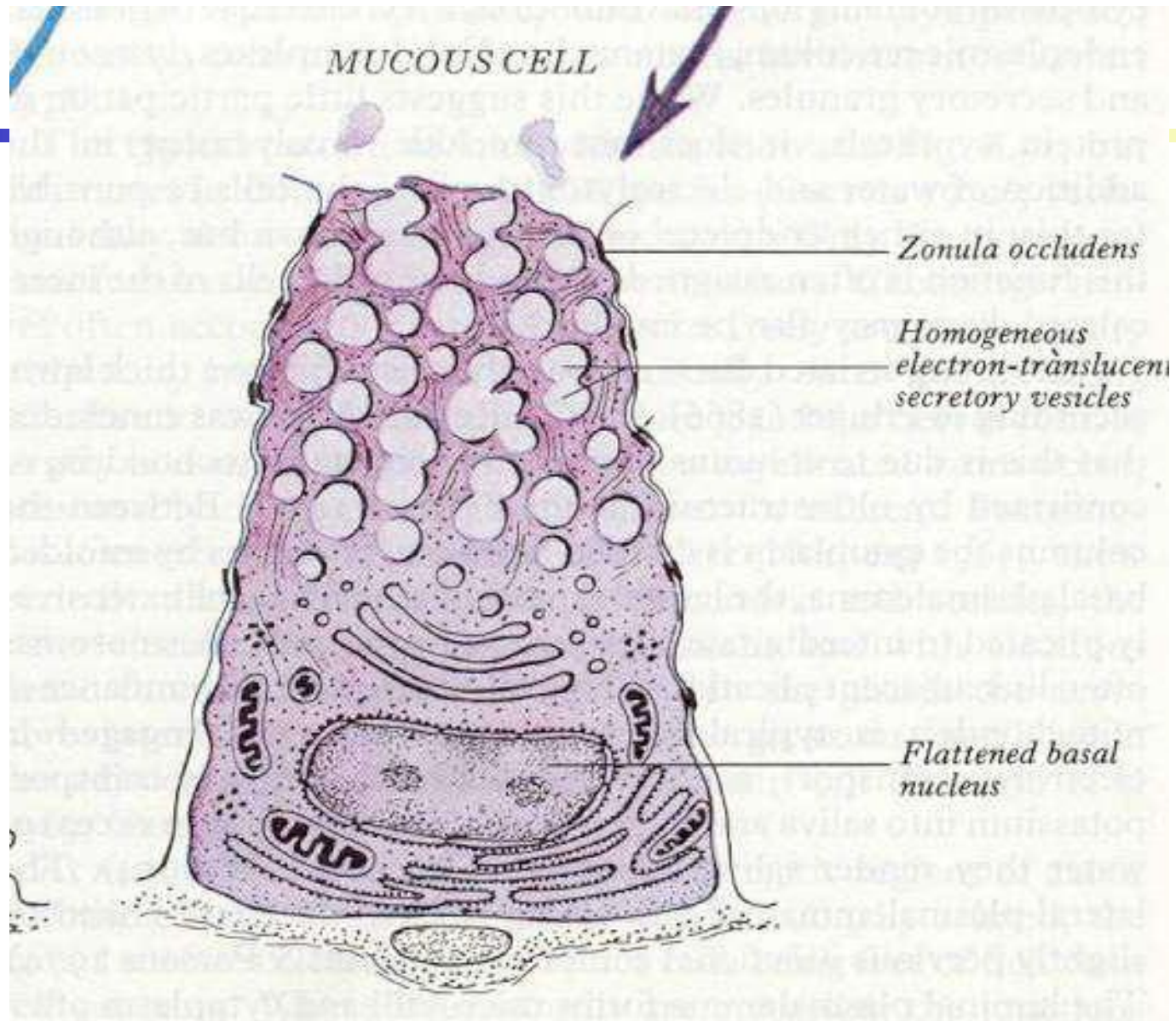
# Serous cells

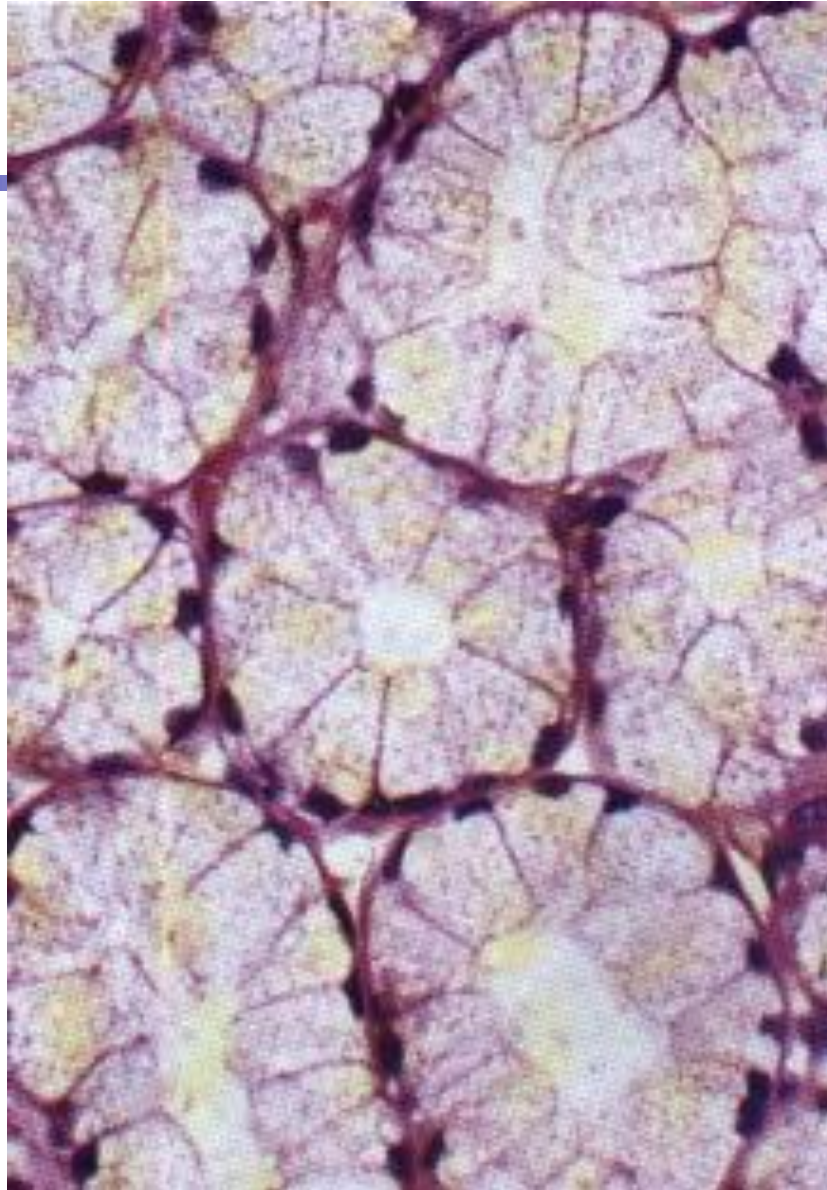
- They have all the features of a cell specialized for the synthesis, storage, and secretion of protein



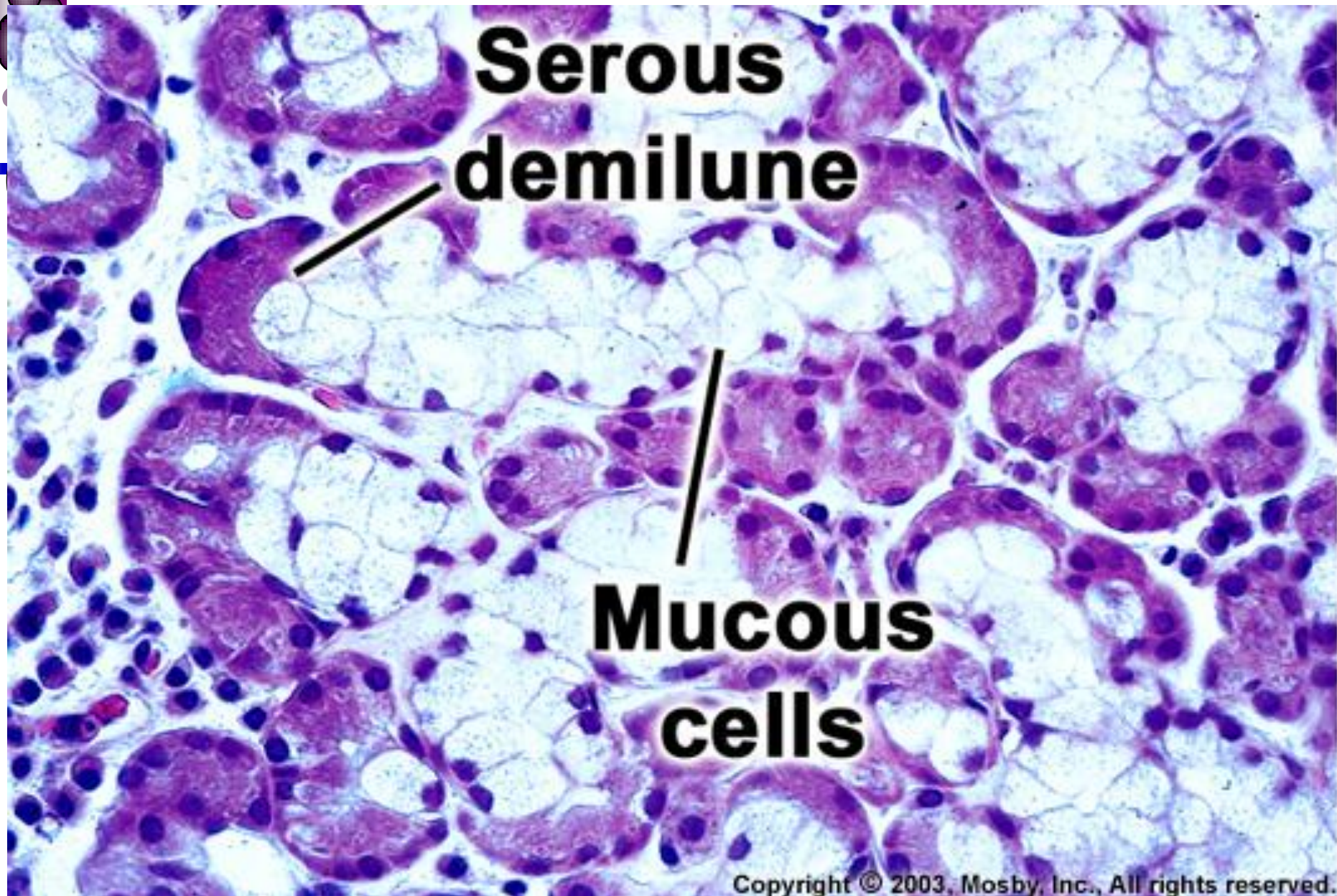










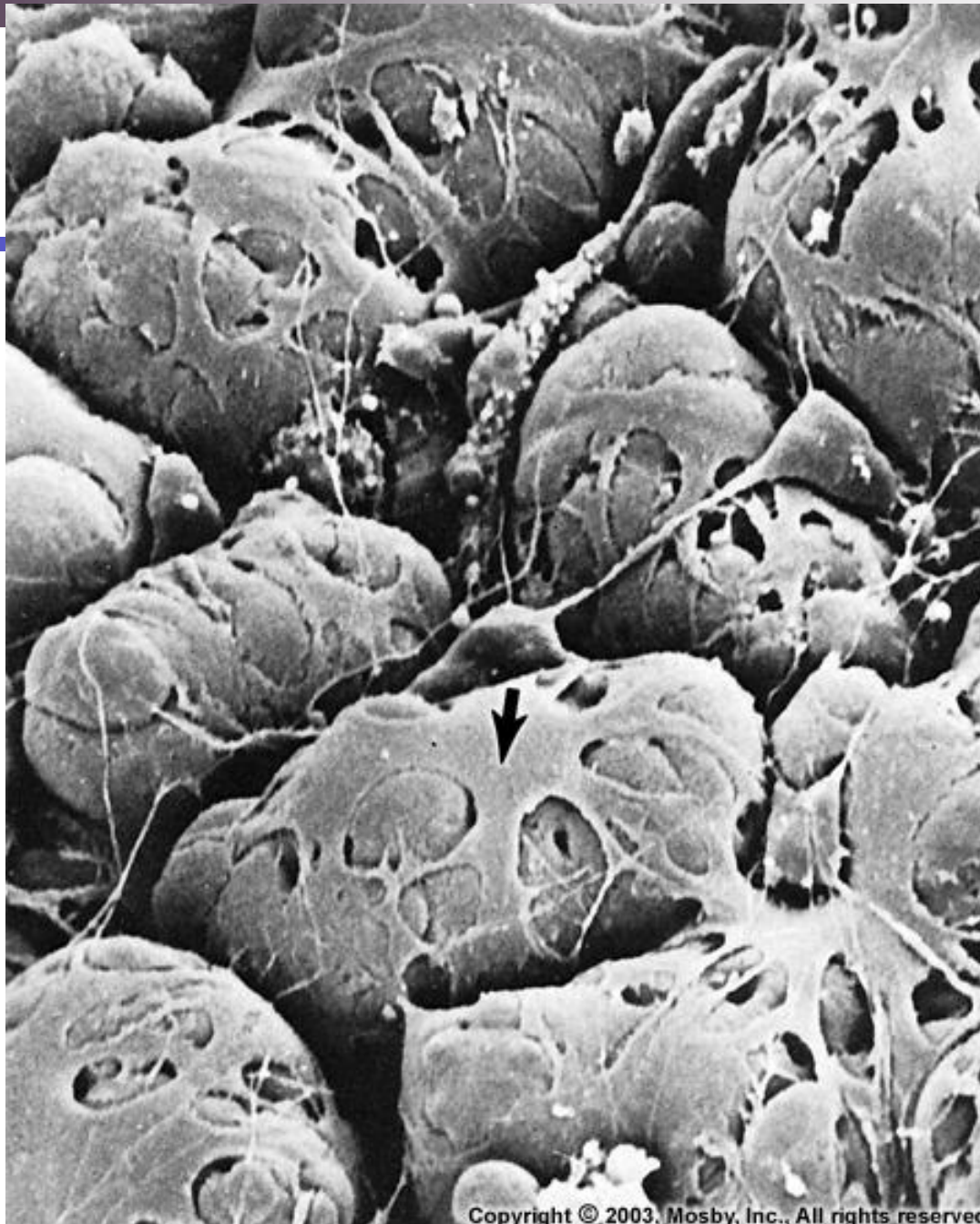


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# Myoepithelial cells

- The myoepithelial cells of the intercalated ducts are more spindled-shaped and fewer processes
- Desmosomes between myoepithelial cells and secretory cells
- Ultrastructurally very similar to that of smooth muscle cells
- Functions of myoepithelial cells
  - *Support secretory cells*
  - *Contract and widen the diameter of the intercalated ducts*
  - *Contraction may aid in the rupture of acinar cells of epithelial origin*
  - *Tumor suppressor*

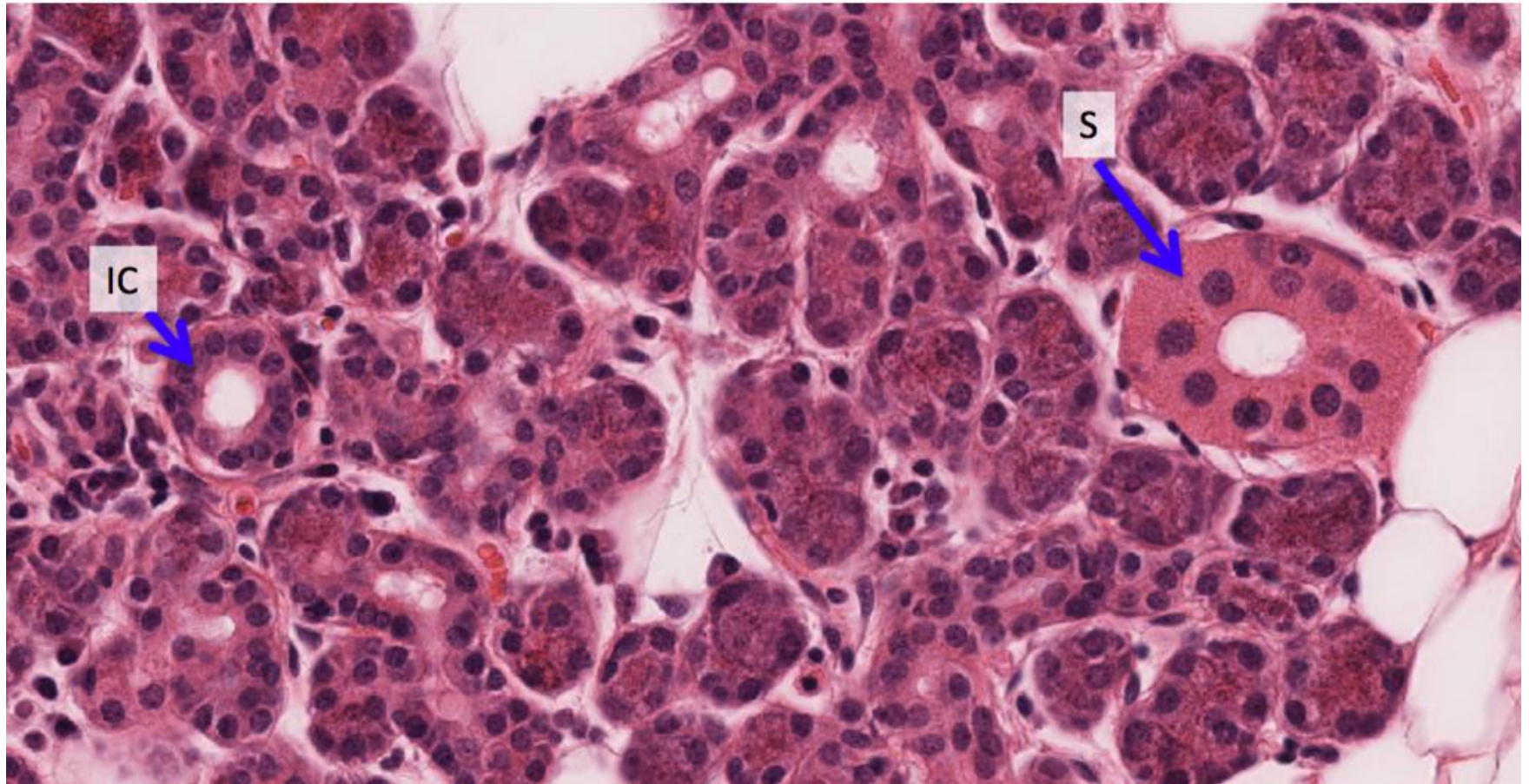




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# Intercalated Ducts

- **Small diameter**
- **Lined by small cuboidal cells**
- **Nucleus located in the center**
- **Myoepithelial cells are also present**
- **Intercalated ducts are prominent in salivary glands having a watery secretion (parotid).**





# Striated Ducts

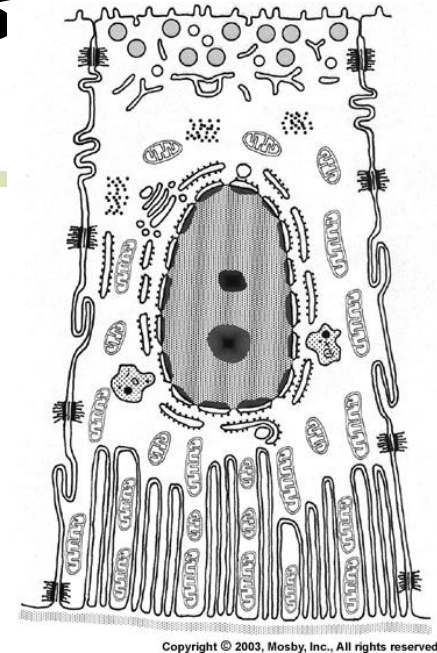
- Columnar cells
- Centrally located nucleus
- Eosinophilic cytoplasm
- Prominent striations

□ *Indentations of the cytoplasmic membrane with many mitochondria present between the folds*

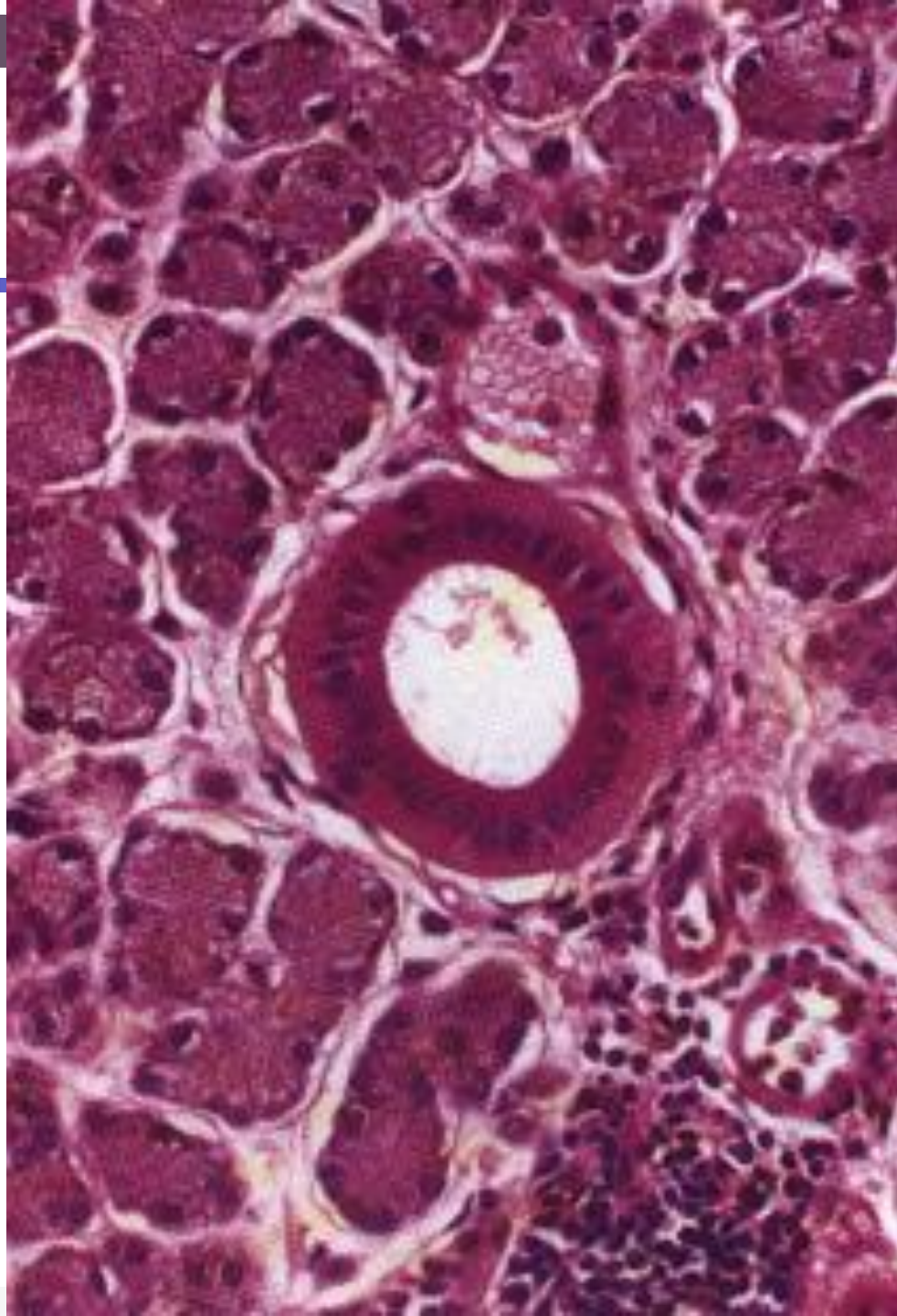
- Modify the secretion

□ *Hypotonic solution = low sodium and chloride and high potassium*

- Basal cells

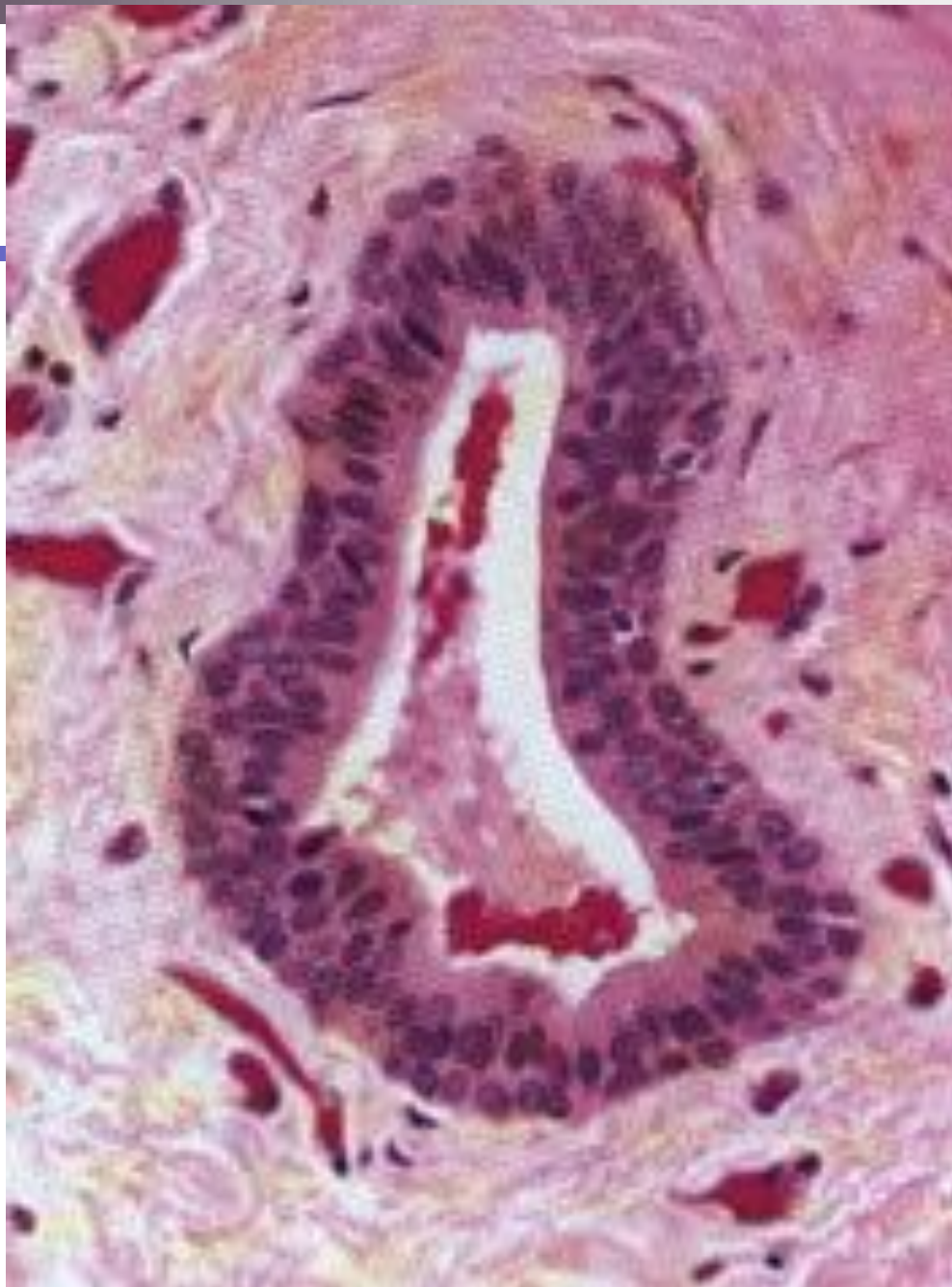






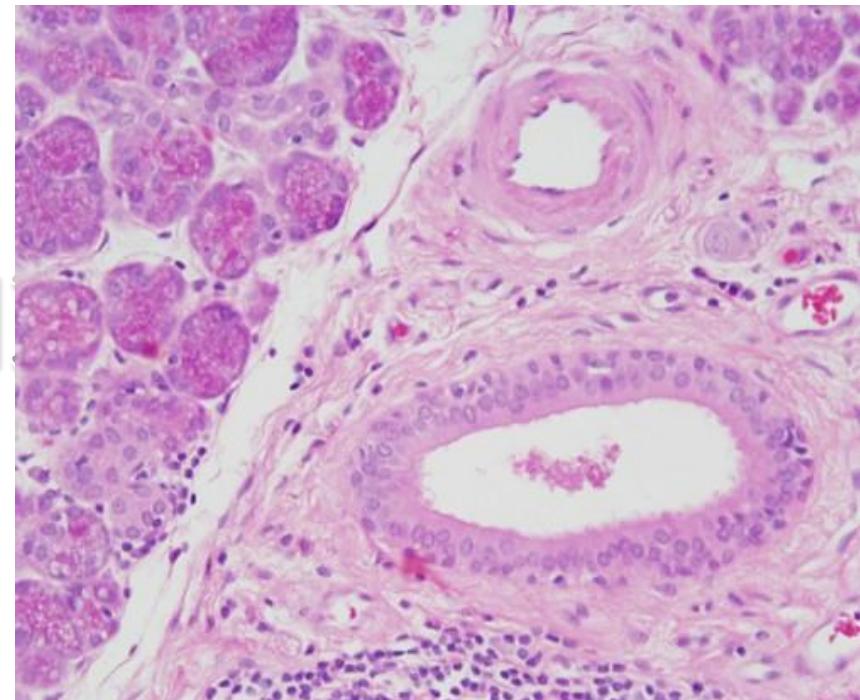
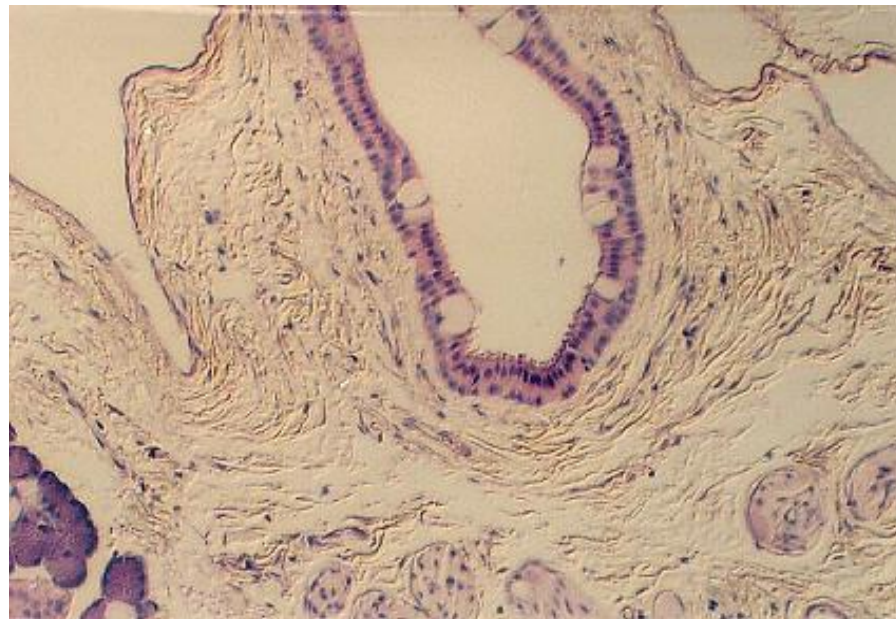
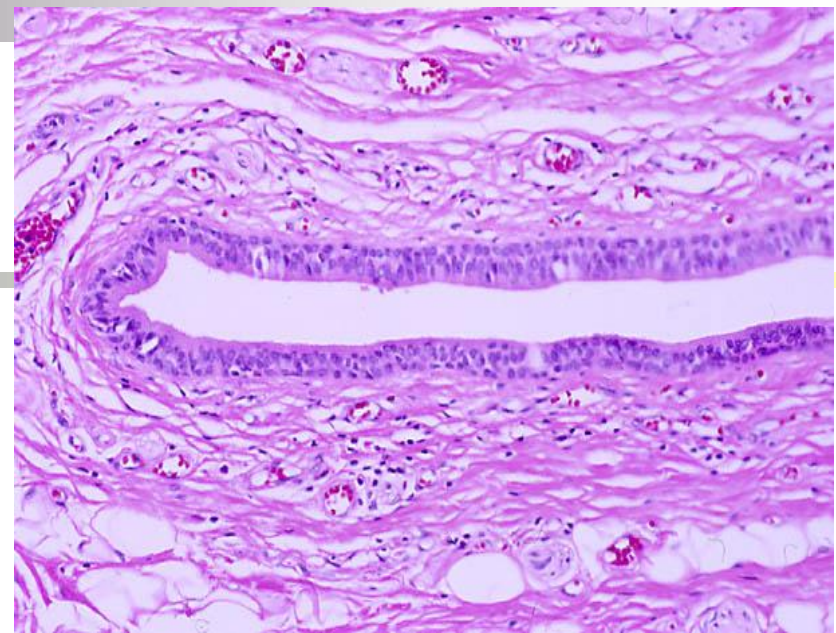
# Terminal excretory ducts

- Near the striated ducts they have the same histology as the striated ducts
- As the duct reaches the oral mucosa the lining becomes stratified
- Goblet cells, basal cells, clear cells.
- Alter the electrolyte concentration and add mucoid substance.





**Parotid Gland - H&E**





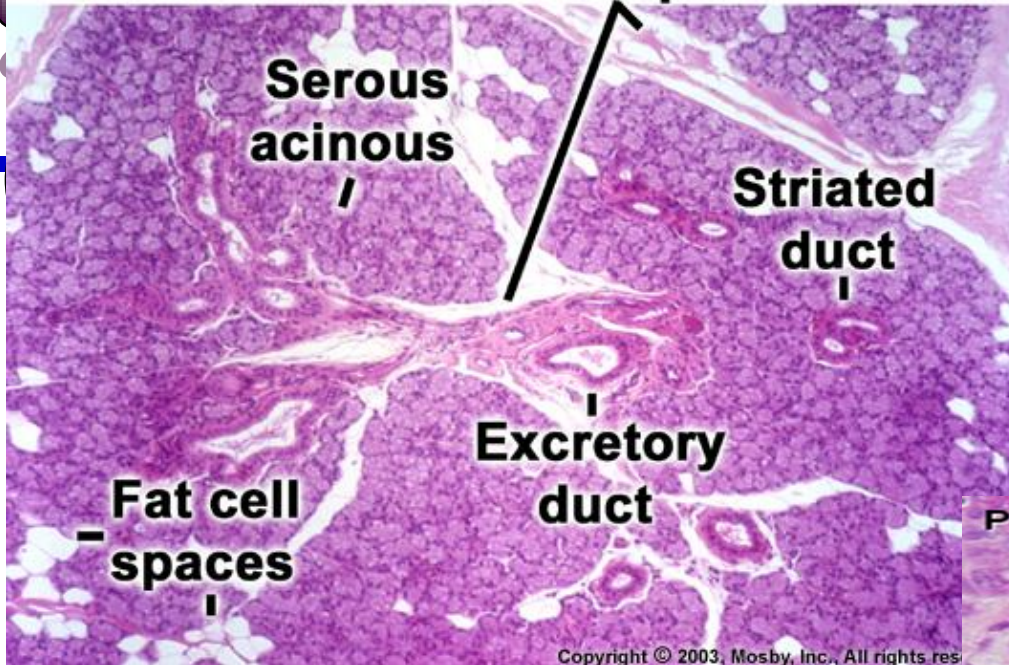
## Connective tissue septum

Serous acinous

Striated duct

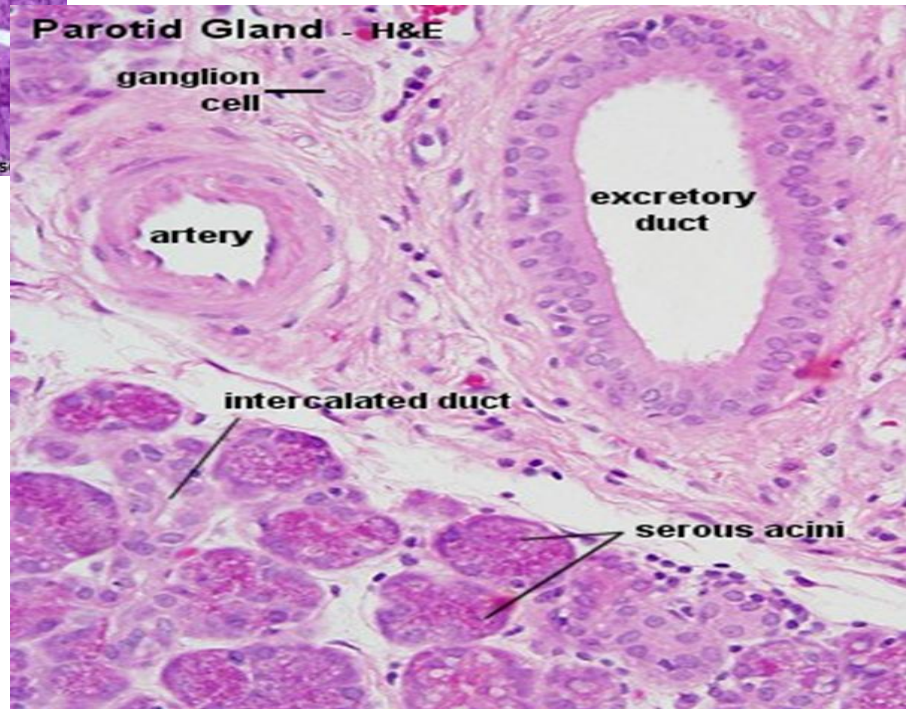
Excretory duct

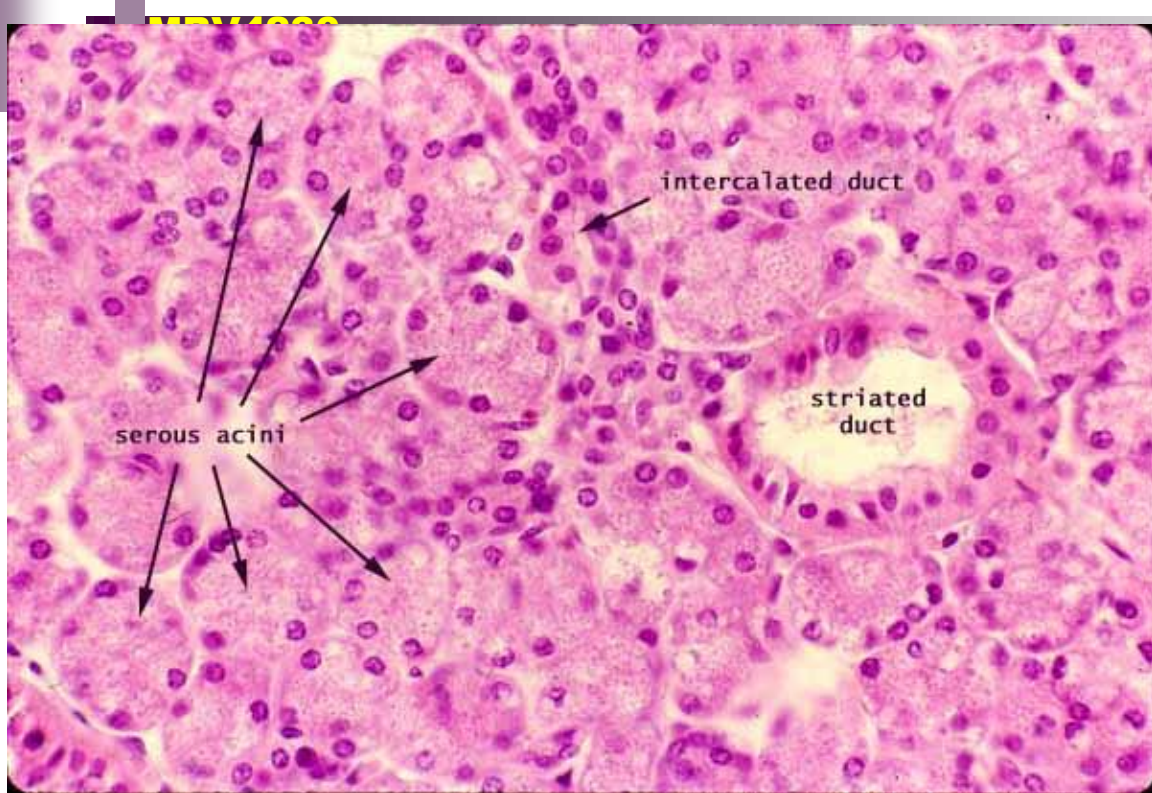
Fat cell spaces



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# Parotid gland

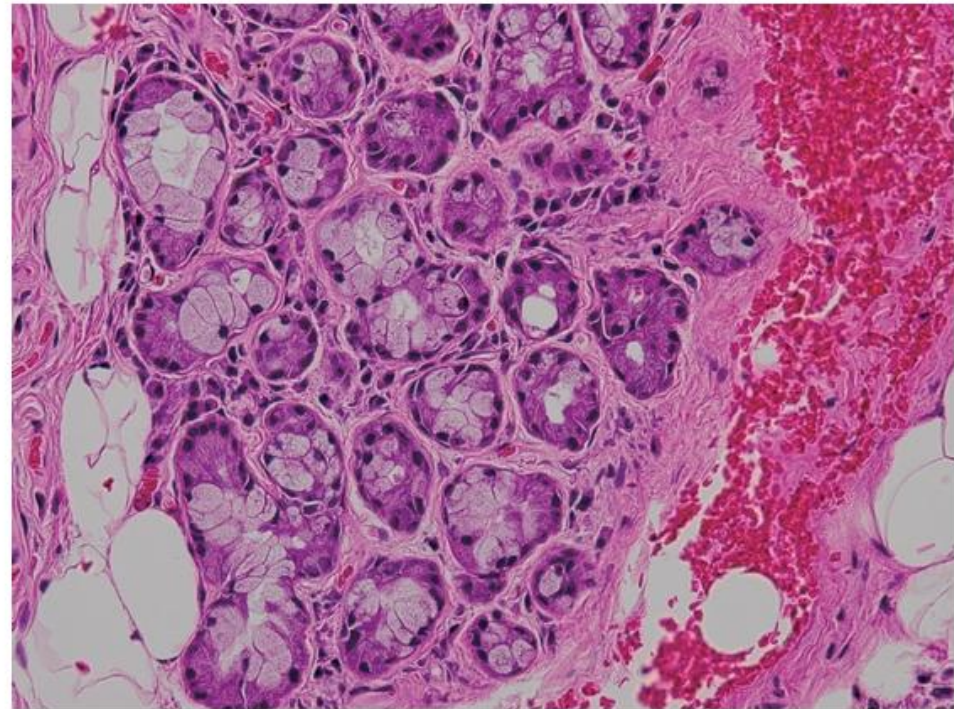
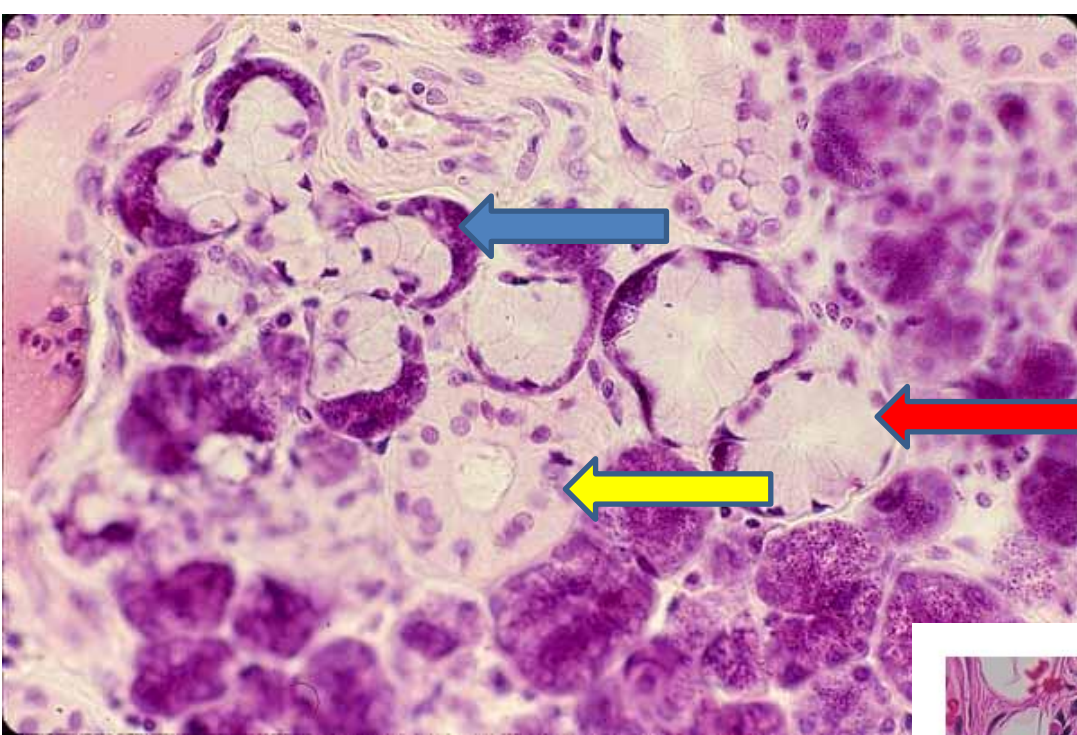




# Parotid gland

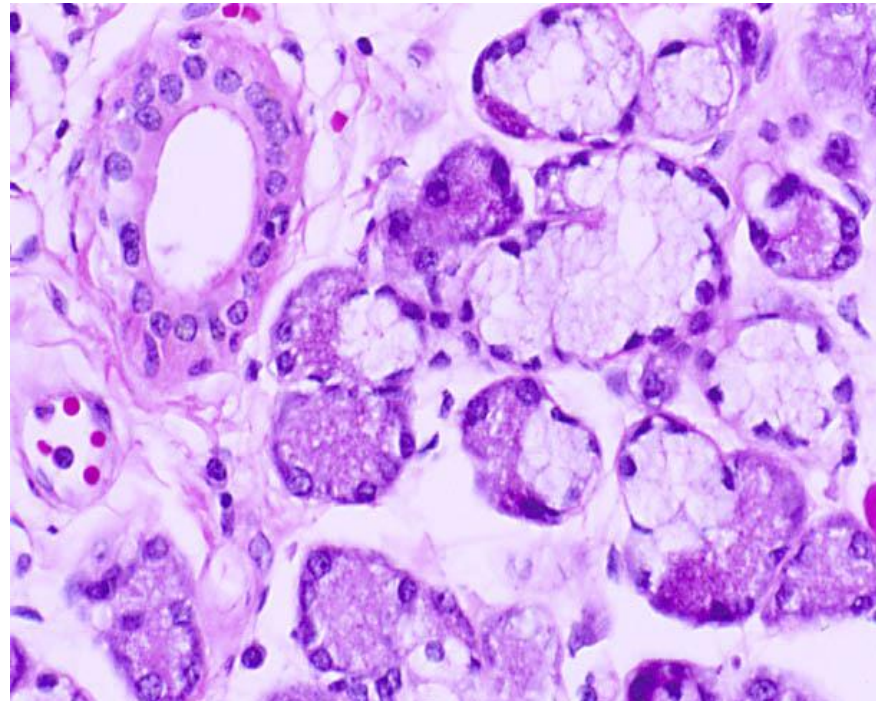
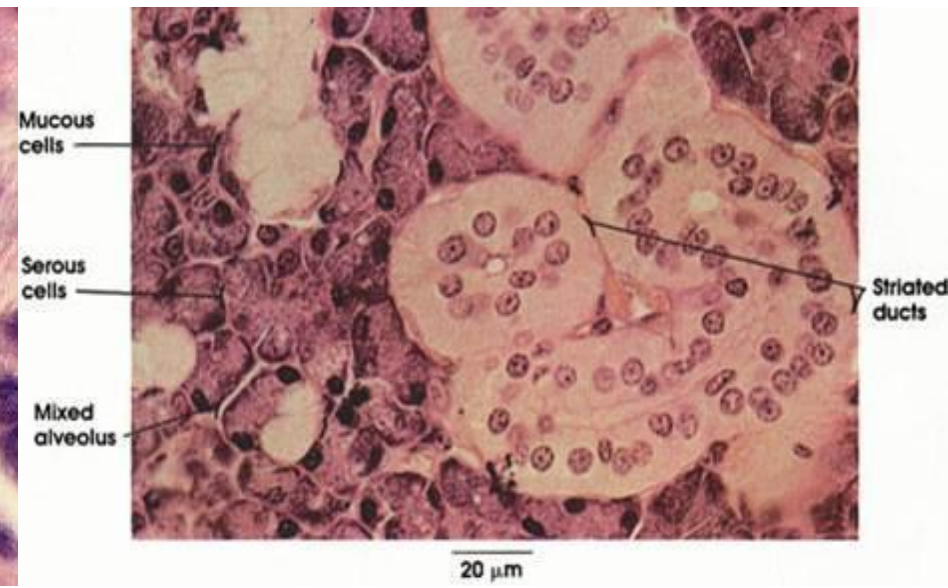
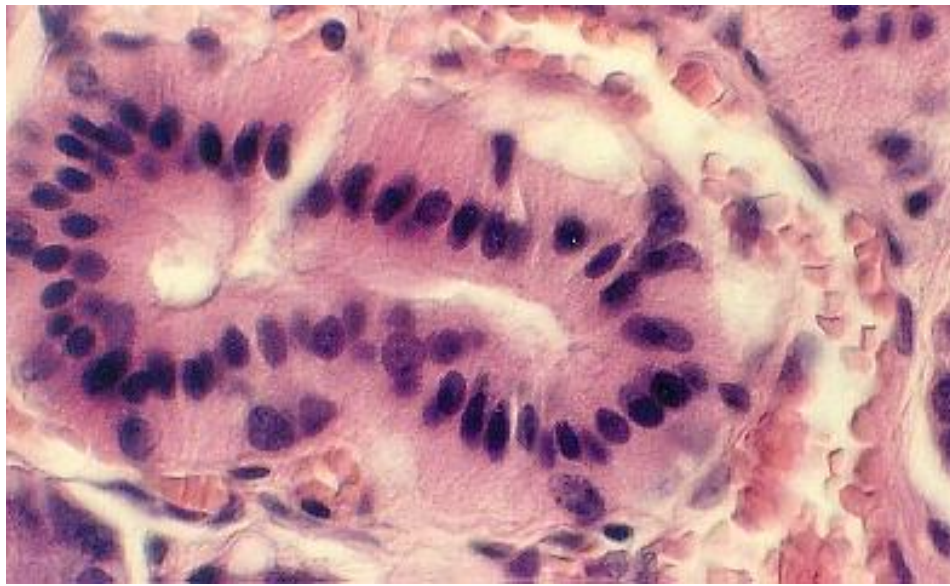




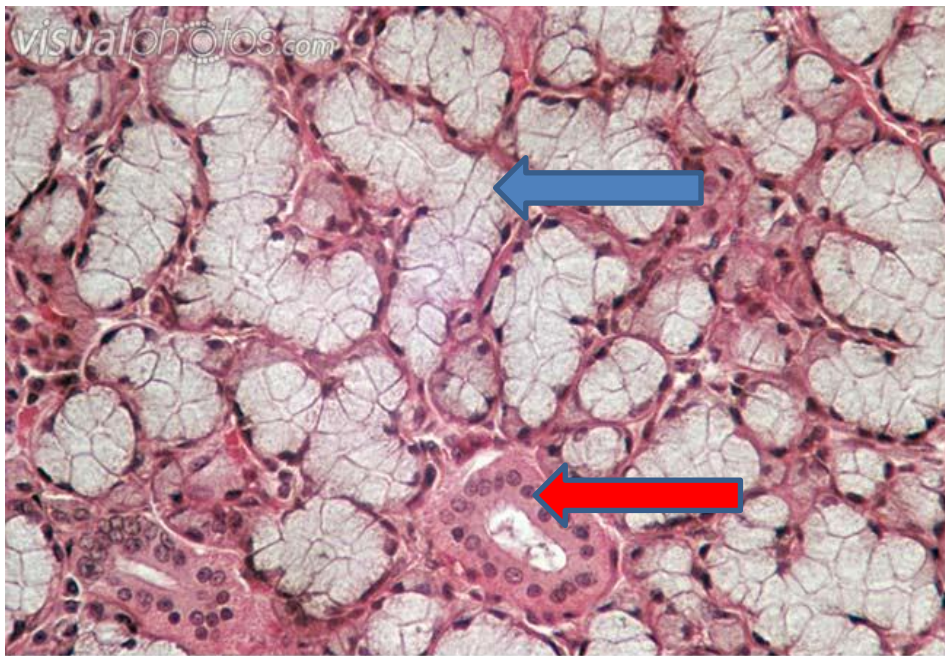


**Submandibular gland**

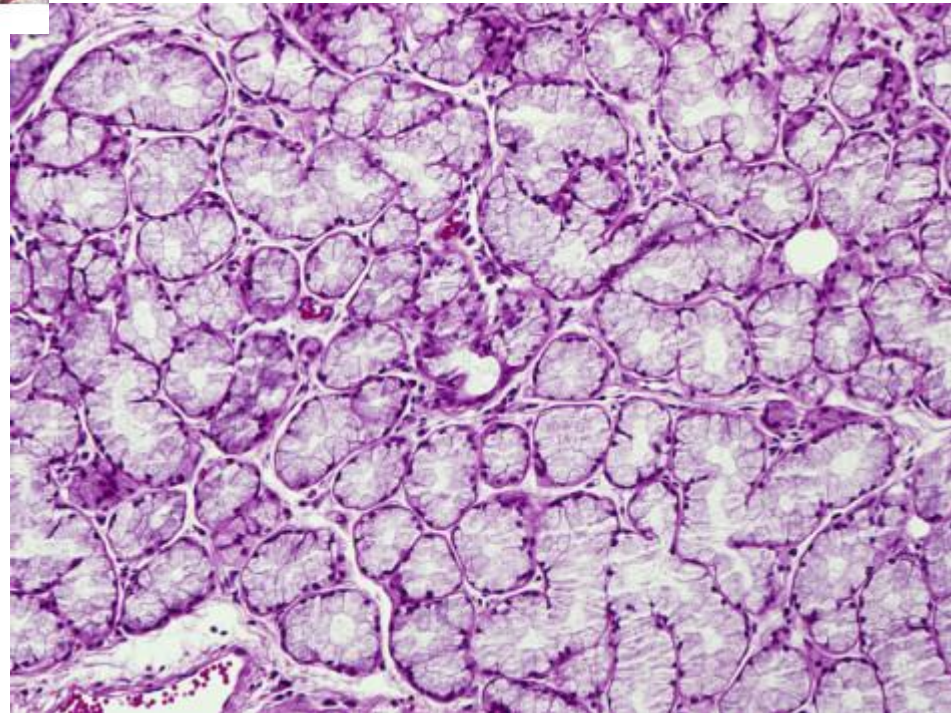








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**Sublingual gland**



