

GIT practical slides
2nd year 2021
LAB - 1

- **The assigned slides:**

- 1. Lip**
- 2. Tongue x 2**
- 3. Parotid gland**
- 4. submandibular**
- 5. Esophagus (dog)**
- 6. Stomach (fundus)**
- 7. Gastro-esophageal junction**
- 8. Pyloro-duodenal junction**
- 9. Recto-anal junction**
- 10. Duodenum**
- 11. Ileum**
- 12. appendix**
- 13. Colon (large intestine)**
- 14. Liver**
- 15. Pancreas**

T.S of Lip

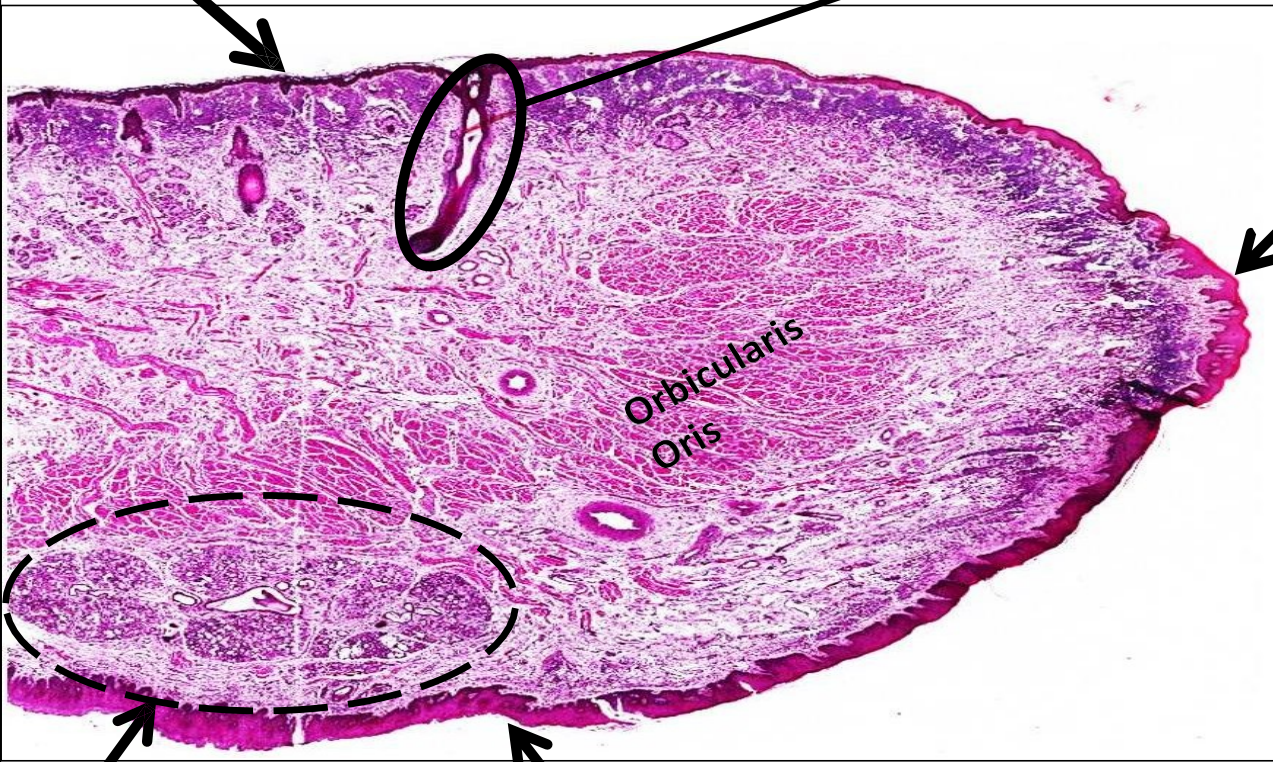
****Orbicularis oris (under the voluntary control)**

Prof Dr. Hala Elmazar

Skin : keratinized stratified squamous epithelium

Hair follicle

Lip margin



Orbicularis Oris

Q: This section can be thought that is represents the tongue , so How to differentiate between tongue section and lip section ?

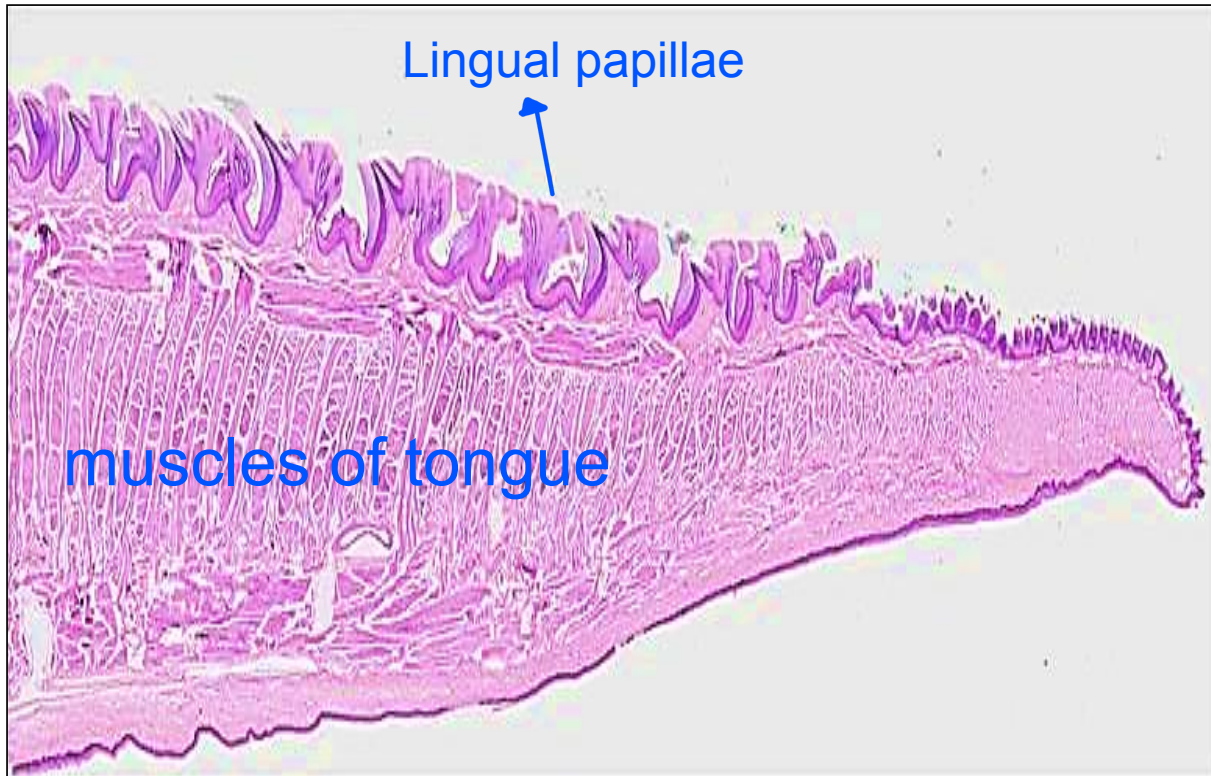
A: through the presence of hair follicles , there is no hair follicles in the tongue so this is a section of the lip

****dorsum of the tongue is rough due to the presence of papillae**

Labial glands
(minor salivary gland, secrete mucus to lubricate the oral cavity)
****Minor salivary glands secrete 10% of saliva in a constant rate**

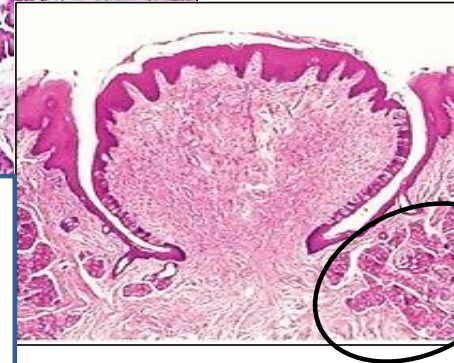
Mucous membrane:
Non-keratinized stratified squamous epithelium
(there is no hair follicles, sweat glands, sebaceous glands in m.m)

Tongue



Circumvallate papillae

Prof Dr. Hala Elmazar



Von Ebner glands

Q: How do you know that this section represents circumvallate papillae not other papillae?

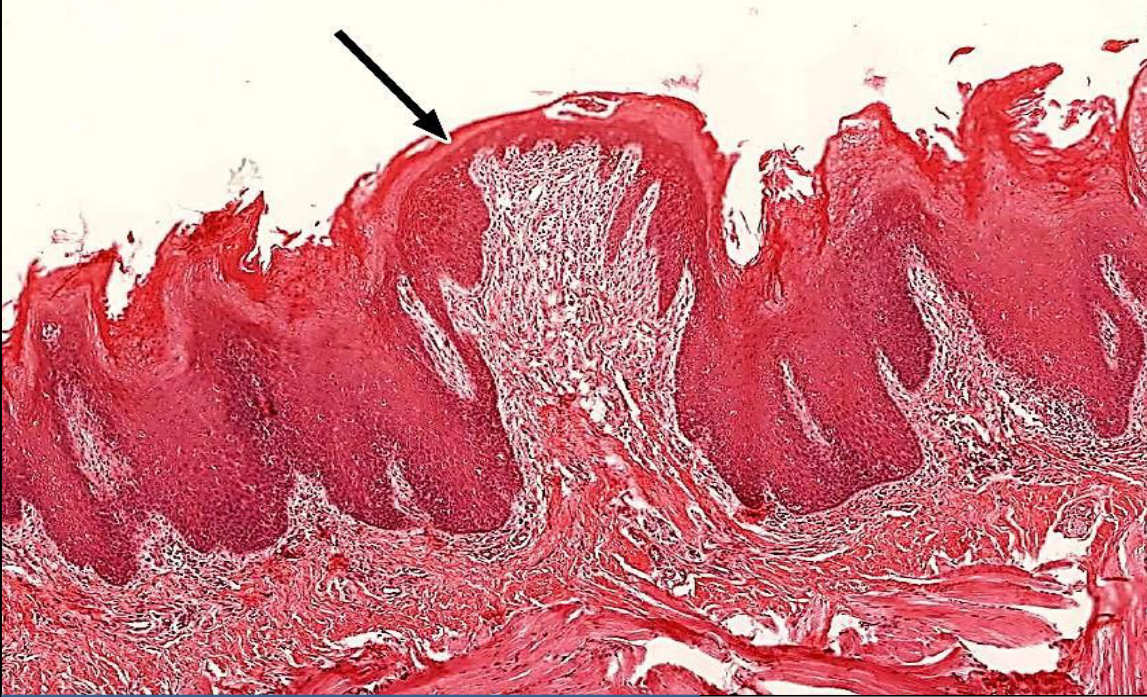
A: They don't project on the surface

****info about circumvallate papillae :**

1) Large **2)** surrounded by trench **3)** taste buds present on the lateral sides of the papillae **4)** contain Von Ebner glands which secrete the serous

Fungiform papillae

Prof Dr Hala Elmazar

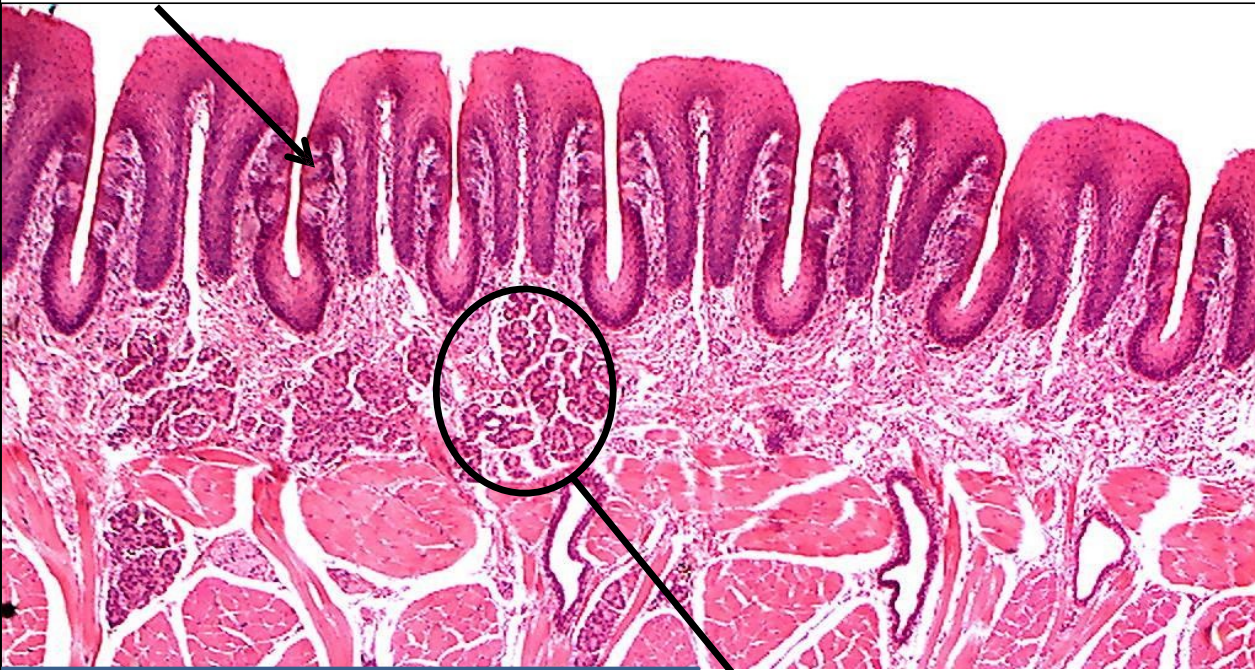


****Info about fungiform papillae:**

- 1)** Mushroom-shaped
- 2)** contain taste buds on the upper surface
- 3)** found on ant 2/3 of the tongue among Filiform papillae

Foliate papillae

Taste buds



Von Ebner glands

**Info about foliate papillae:

- 1) Cuboidal-shaped
- 2) taste buds present on the lateral sides
- 3) contain Von Ebner glands
- 4) found on sides of tongue
- 5) This type is at high risk for oral cancer

Filiform papillae

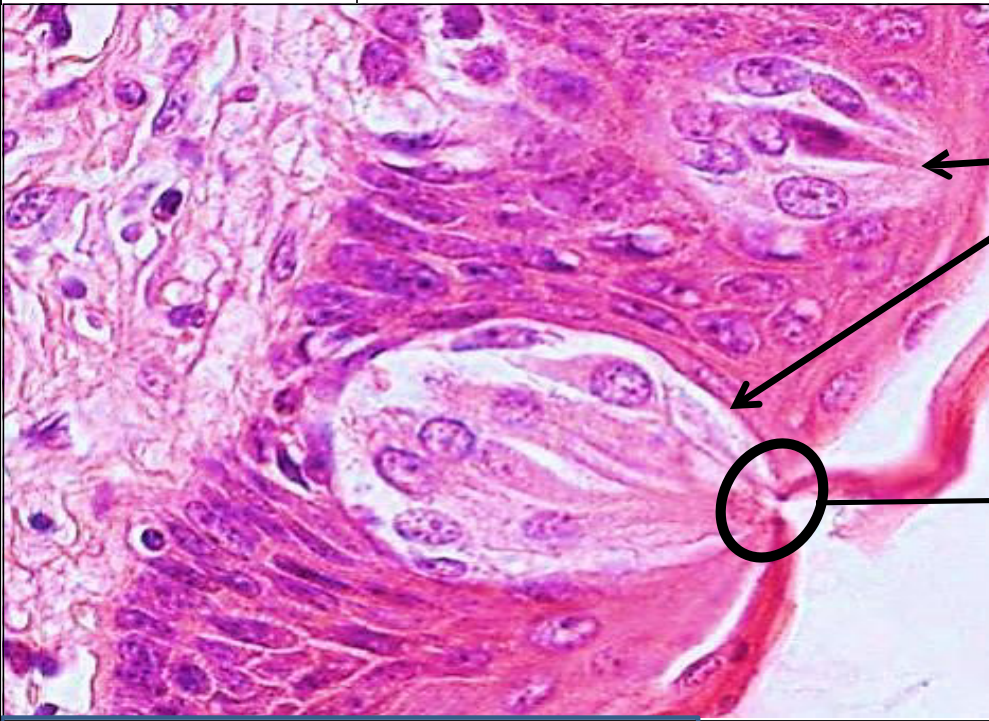
Epithelium : keratinized stratified squamous epithelium, No taste buds



****info about filiform papillae:**

1) The only one contain NO taste buds **2)** the only keratinized one **3)** rough **4)** mechanical receptor

Taste buds

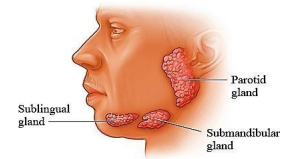


Taste pore and
hairlets get out of it

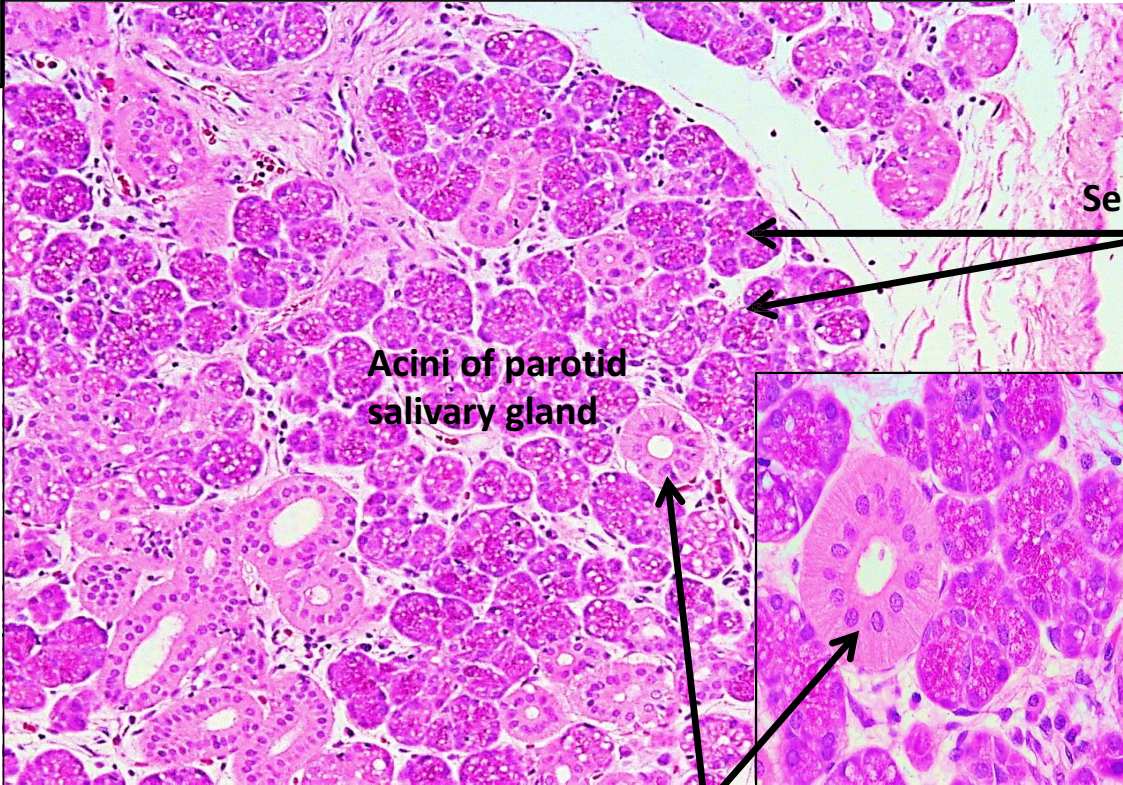
** Info about taste buds:

1) Oval structure 2) inside it there is sensory cells 3) hairlets help the taste cells in determining what we taste

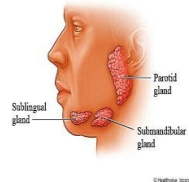
Parotid salivary gland



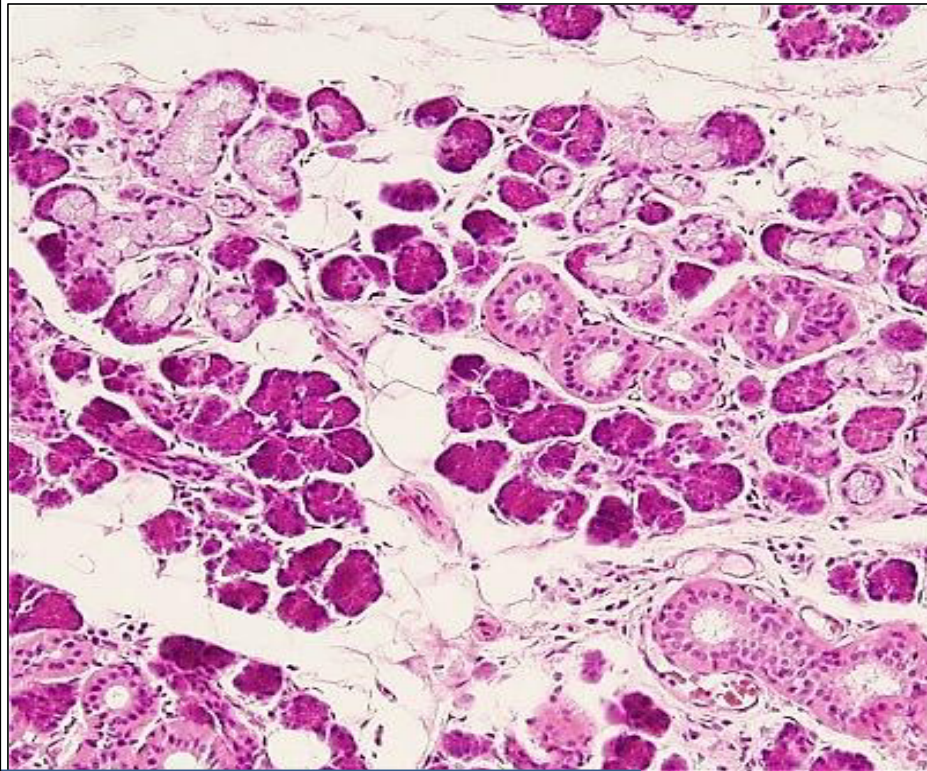
Acini of parotid salivary gland secrete **SEROUS**



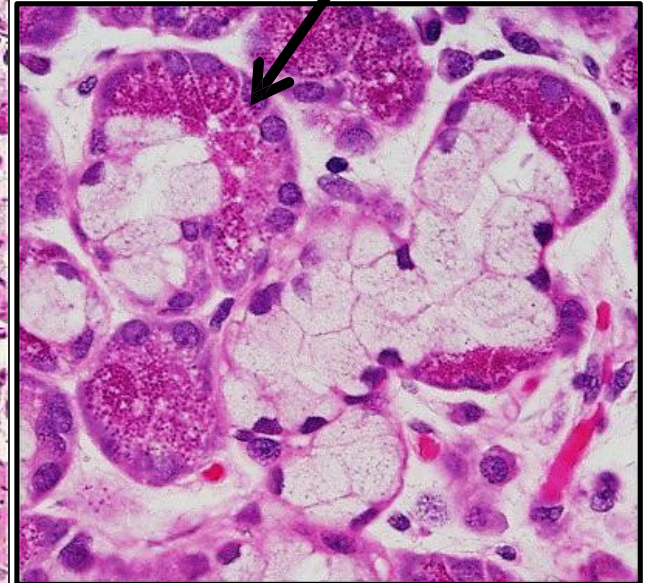
Submandibular salivary gland



Mixed muco-serous acini

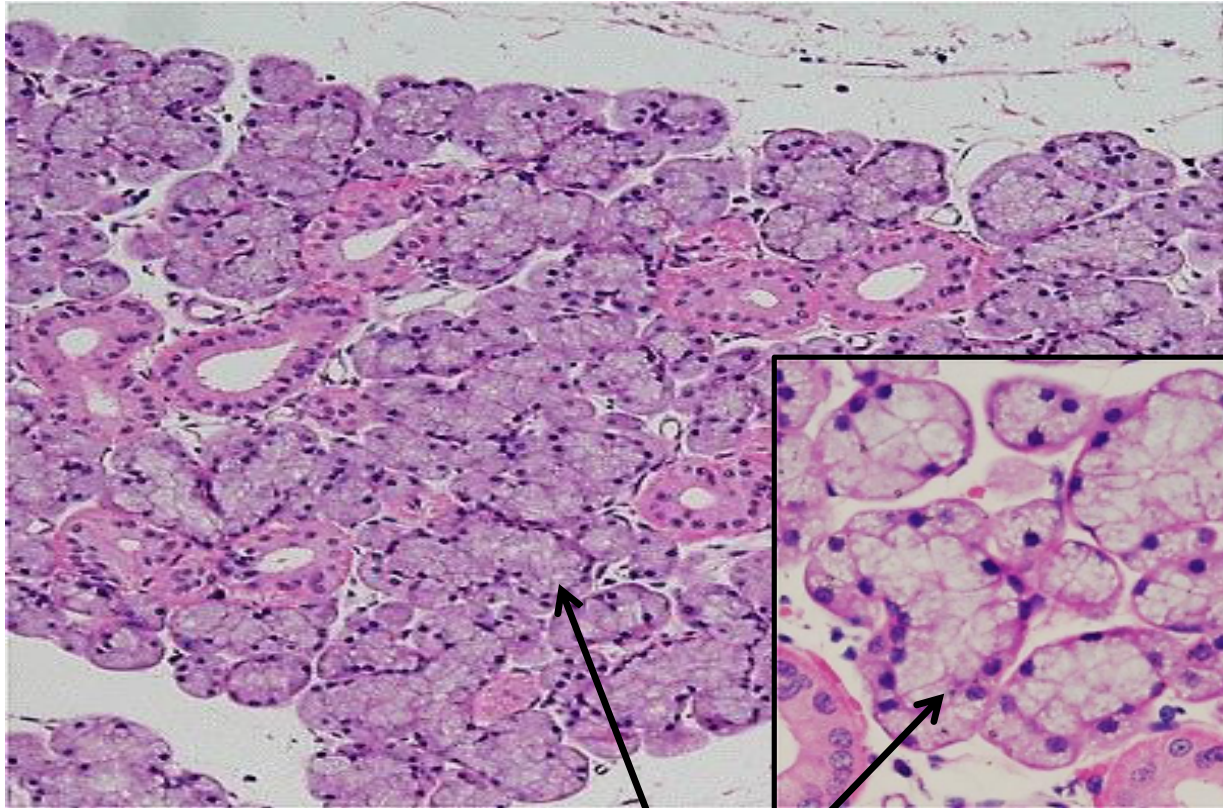


Serous demilune (Crescent of Gianuzzi)



****Submandibular salivary acini can present as mucus acini and serous acini OR crescent of Gianuzzi**

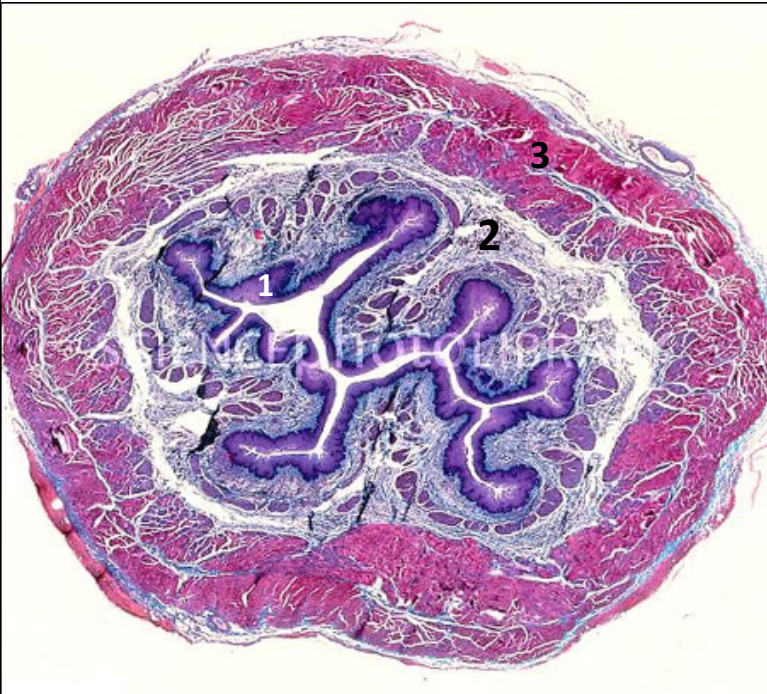
Sublingual salivary gland



Most of sublingual acini is mucus acini (90%) , crescent of Gianuzzi may present , serous acini present in a very little amount

Mucous acini

Section in the esophagus



Esophagus has thick epithelium to facilitate its function (transmission of the food from the oral cavity to the stomach), and help it to tolerate the passage of the different form of food

1) Mucosa 2) Submucosa 3) Musculosa with its 2 layers

Q:How do we know that this section in the esophagus not in other parts of GIT ?

A:through the presence of non-keratinized stratified squamous epithelium mucosa

Section in the stomach (fundus)



Gastric pits

Fundic glands

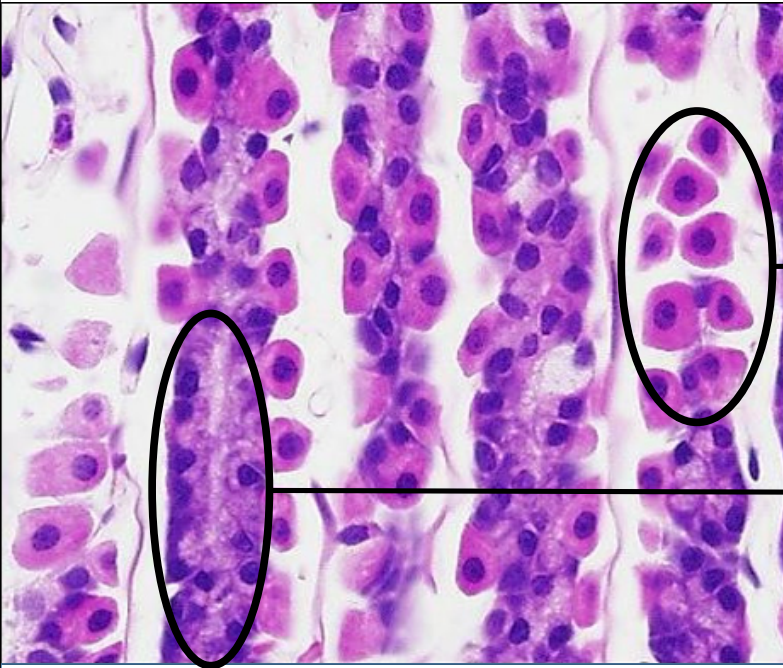
Muscularis mucosa

Q:How do we know that this section in the stomach not in other parts of GIT ?

A:through the presence of fundic glands

Info about the fundic glands: simple branched tubular, long

Fundic glands in the stomach at higher magnification



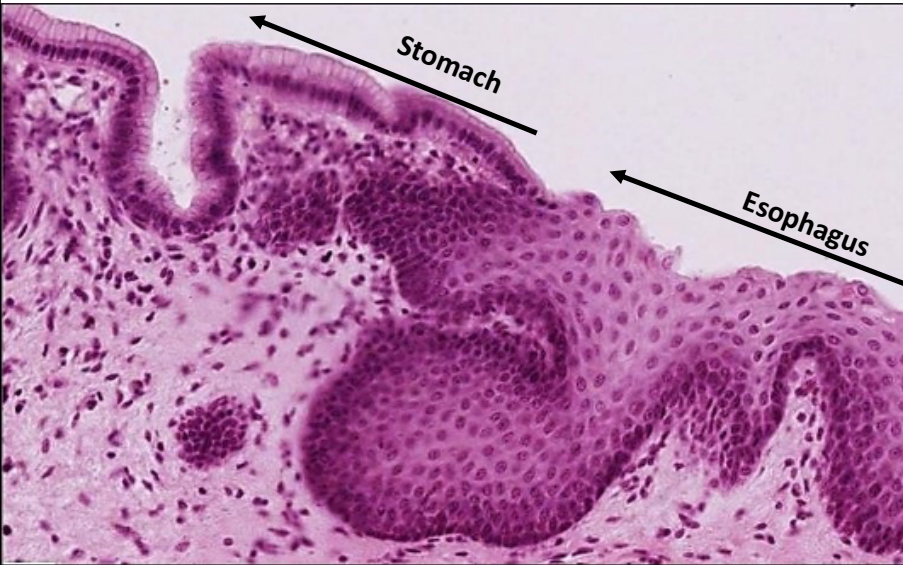
1) Parietal cells

2) Chief cells

In this section there is 2 types of cells can be identified:

- 1) Parietal cells** (oxyntic cells): triangular in shape, secretes HCl, red in color due to the presence of ↑ mitochondria and ↑ SER
- 2) Chief cells** (peptic): polyhedral, blue in color, The basal cytoplasm is basophilic due to ↑ rER, while the apical part contains ↑ zymogen granules for the storage of pepsinogen, protein secreting cells (secrete pepsinogen)

Gastro-esophageal junction



Q:How do we know that this section in the Gastro-esophageal junction not in other parts of GIT ?

A: through **1**) the epithelium (stratified squamous in the esophagus, simple columnar in the stomach) **2**) the presence of gastric glands

Gastro-duodenal junction



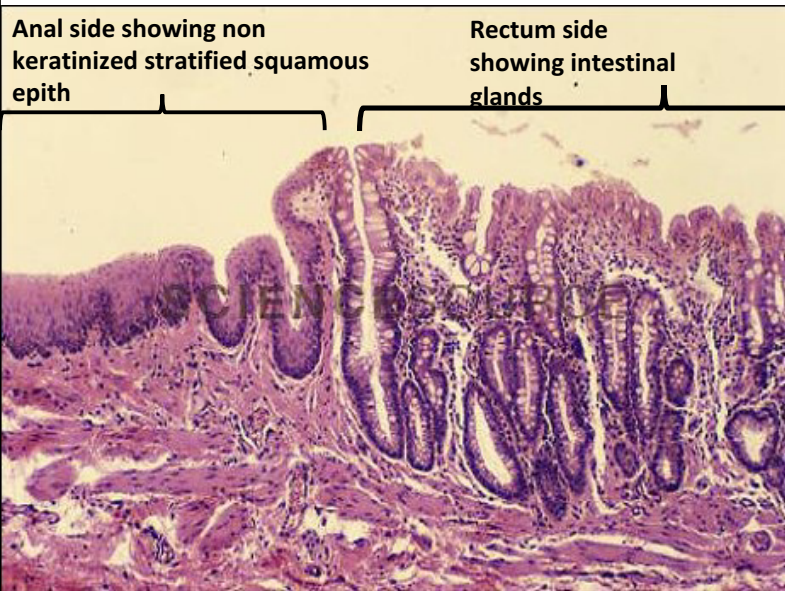
gastro-duodenal junction =
pyloro-duodenal junction

Brunner's glands in
the submucosa

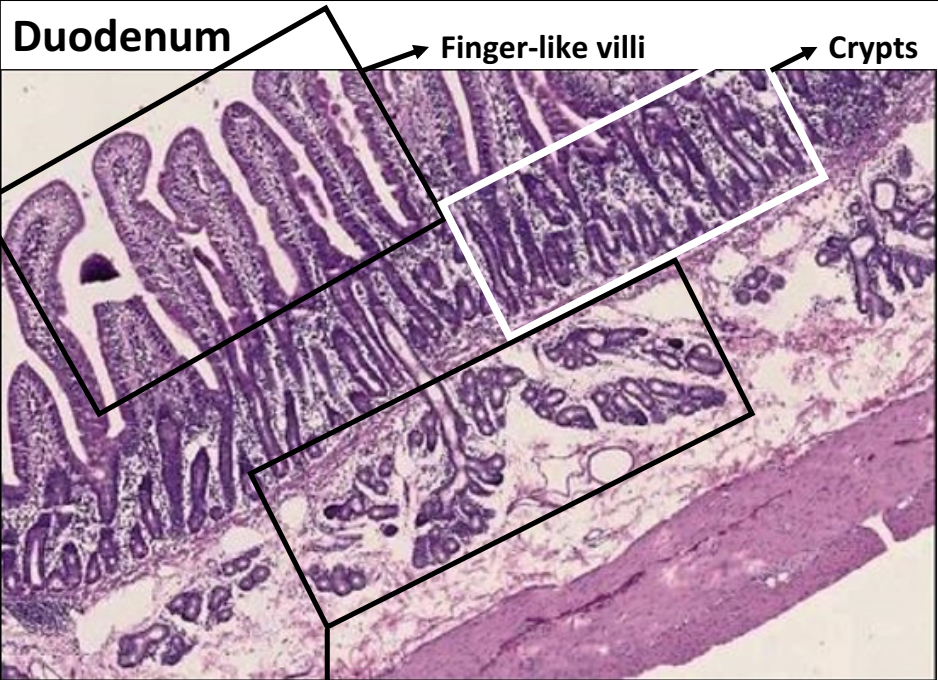
Q:How do we know that this section is in the Gastro-esophageal junction not in other parts of GIT ?

A: through the thickness of Musculosa (**IN** the pylorus is Thicker, formed of 2 layers of muscles. Thick IC to form the p. sphincter & OL. **IN** the duodenum its thinner)

Recto-anal junction



There is an important difference between the intestinal glands and the gastric glands: the intestinal glands contain a large amount of **goblet cells** which secrete mucus help in the protection of the intestinal wall from the waste products, goblet cells **not found** in the gastric glands



Duodenum

Finger-like villi

Crypts

**Brunner's glands
in the submucosa**

Duodenum

Intestinal villi & crypts



Goblet cells start to appear in the duodenum

****There's no goblet cells in the stomach**

****there is small amount of goblet cells in the duodenum**

****large numbers of goblet cells found in the large intestine**

colon



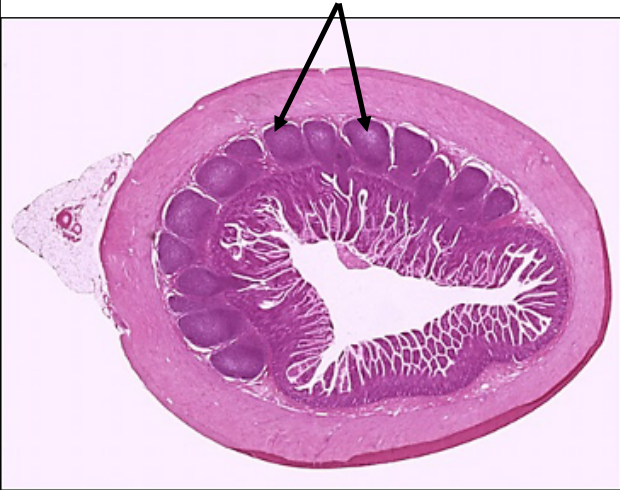
Intestinal crypts
contain numerous
goblet cells

Q: How to differentiate colon section from another section?

A: from the num. of goblet cells, colon contain numerous goblet cells

Ilium

Payers patches



Payers patches: lies in the side opposite to the mesenteric attachment, Can be considered as a MALT because it's a aggregations of lymph follicles

Colon- taenia coli



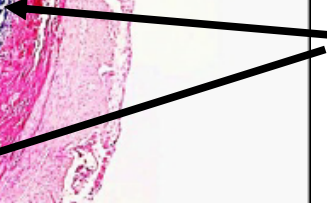
taenia coli (muscle) formed from the outer longitudinal layer of the musculosa

Appendix

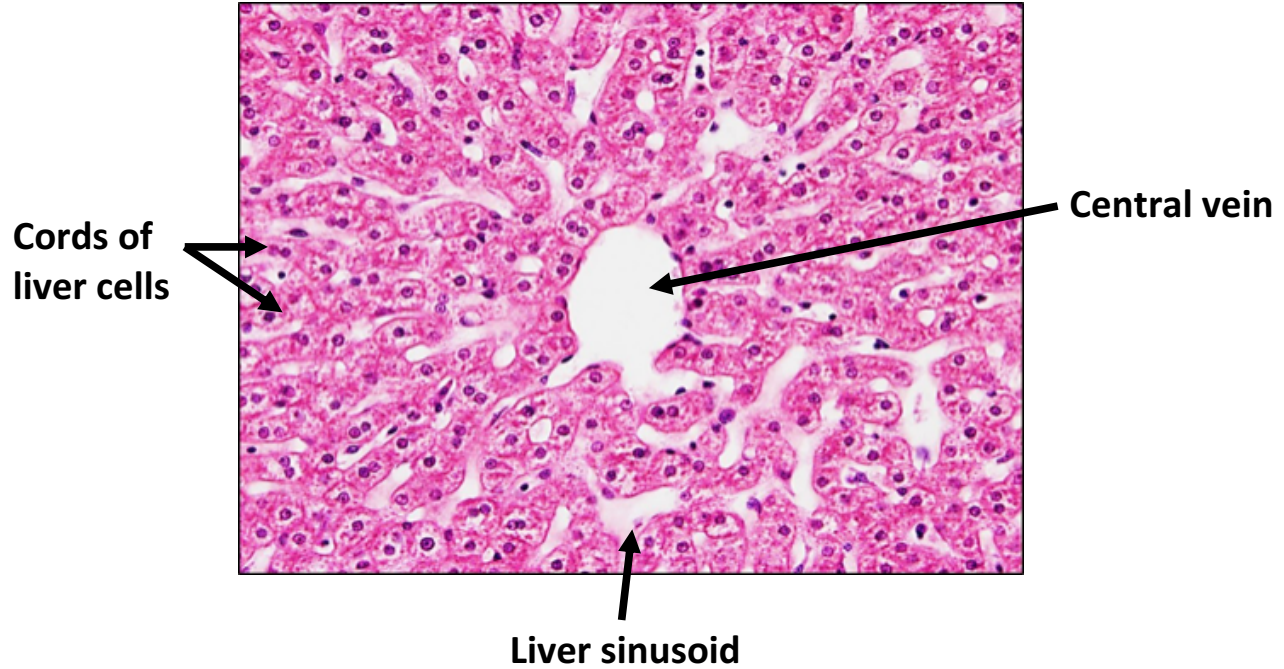
In the appendix lymphoid follicles found throughout the lumen.
Intestinal glands over the lymphoid follicles form a converted Y shape



Lymphoid follicles



Liver



Pancreas

Exocrine pancreas



Islets of Langerhans

**islets of Langerhans
present as aggregations in
the middle of exocrine part

Hepatocytes in the Liver

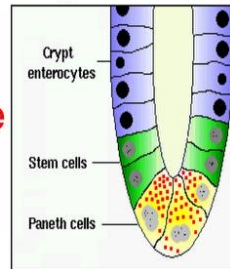
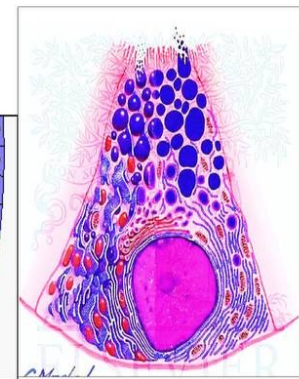
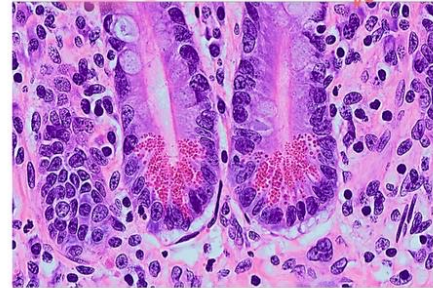


Binucleated hepatocytes

Binucleated hepatocytes: present in the liver normally, its not a pathological landmark, active cells with high regeneration rate

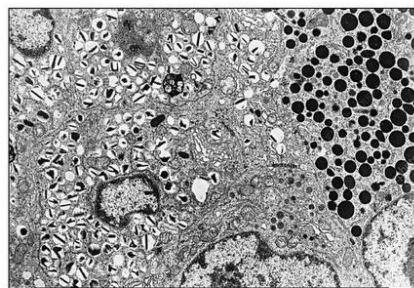
Present in groups at bottoms of crypts only

- Pyramidal cells e basal oval nuclei & narrow apical part
- Basal cytoplasm is basophilic due to ↑ rER , apical part has acidophilic zymogen granules
- They secrete **intestinal lysozyme** which has bactericidal effect

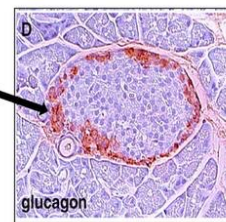
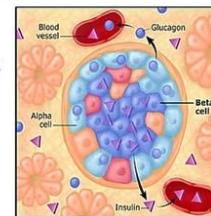


Alpha (A) cells (15%):

- Produce **glucagon H** that **increases** blood sugar
- Cells **larger in size**, **fewer** in number, **peripheral** location in Islets
- EM the secretory granules are numerous with homogenous dense core

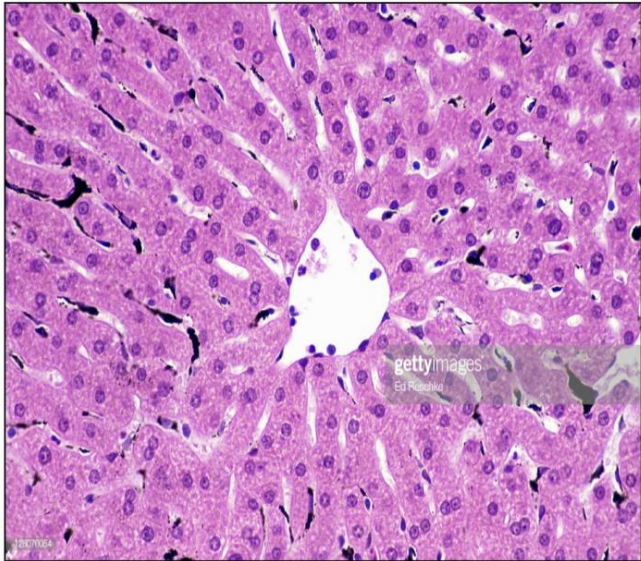


Insulin granules vs glucagon granules 15

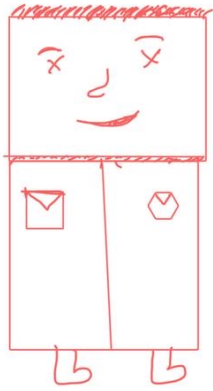
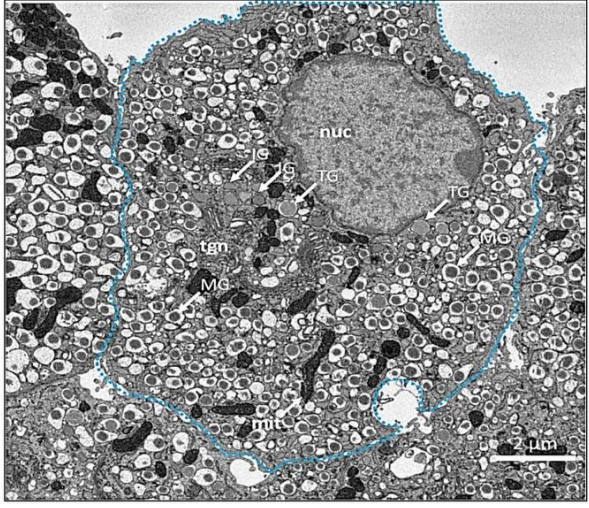


Alpha cells

Delta cells:



Kupffer cells seen in liver lobules as black cells with special stains (India ink). Found more near portal areas



With EM the secretory granules that contain insulin inside B cells have a unique appurtenance have a rectangular crystalline dense core surrounded by an electro lucent halo

