

Epithelium

vs

Epitheloid.



- i) covers body surfaces.
- ii) lines body cavities.
- iii) constitutes glands.



close apposition &
BM ⊕.
Epithelial cells LACK
a free surface

↓
During maturatⁿ
they lose the free
surface.

Examples:

- * Interstitial cells of Leydig
- * The Lutein cells
- * Islets of Langerhans.
- * Adrenal gland parenchyma
- * Ant. lobe of pituitary
- * Epithelio Reticular cells
of Thymus.
- * Sebaceous gland

S	E	A	L
1	2	3	

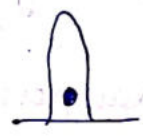
(2) factors.

based on the shape
of surface cells.



i) Squamous 

ii) cuboidal 

iii) Columnar 

no. of cell layers



i) simple

ii) stratified

iii) pseudostratified

Nomenclature is
based on Top layer

special category

i) pseudostratified columnar epithelium

ii) Urothelium / Transitional epithelium
(umbrella / Dome shaped layer
of cells on the Top).

Relaxed



dome shaped
is clearly
visible.

Stretched.



stretched urothelium
looks v. illar to
stratified squamous
epithelium

Endothelium
↓
lines blood v/s
& lymph v/s.

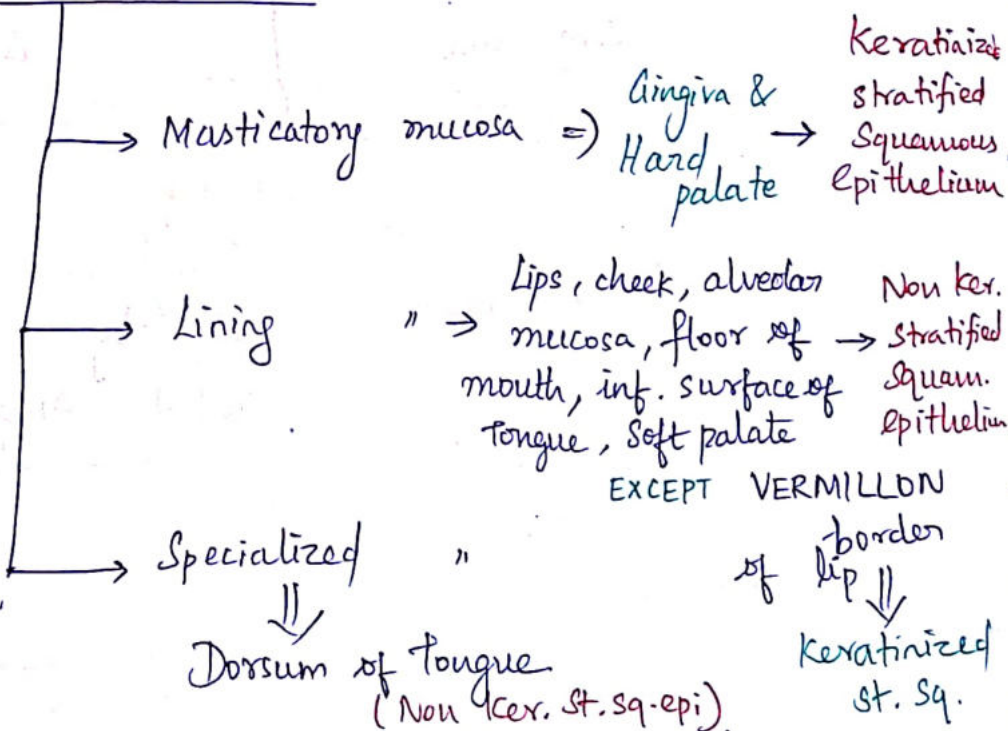
Mesothelium:
↓
lining of walls of
closed cavities like
pleural & peritoneal
cavity

Simple Squamous Epithelium

Except post capillary venules of some
lymphatic tissue (aka HEV - High End Venules)
which have CUBOIDAL EPITHELIUM.

GIT

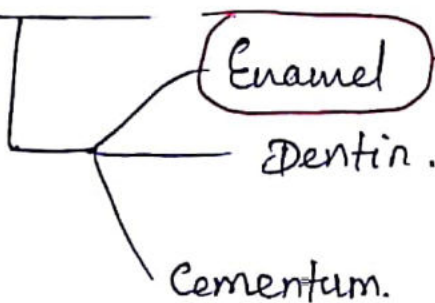
I) Oral mucosa



EXCEPT filiform papillae. (Ker. st. sq.)

	<u>Constitutes</u>	<u>Lining</u>
i) Masticatory mucosa	Gingiva & Hard palate	Kerat. stratif. Squa. epith
ii) Ling Lining mucosa	Lips, cheeks, alveolar mucosa, inf. surf. of Tongue & soft palate.	Non kerat. strat. Sq. epith except Vermillion border of lip. (kerat. st. sq. epi).
iii) Specialized mucosa	Dorsum of Tongue	Non Keratinized St. Sq. epith except filiform. papillae (kerat. st. sq. epi).

TEETH :



unlike bone, the enamel is formed from Mineralizⁿ of lining epith called Ameloblast (columnar cells) by a process called Amelogenesis.

a) Mucous Acinus.

* has a lot of Mucopolysac.

↓
dye is not able to stain properly

↓
lightly coloured.

↓
Clear Cytoplasm

b) Serous Acinus.

* darkly stained due to granules.

c) Saliv. Ducts

→ intercalated duct (starts from gl.). [low CUBOIDAL Epith.]

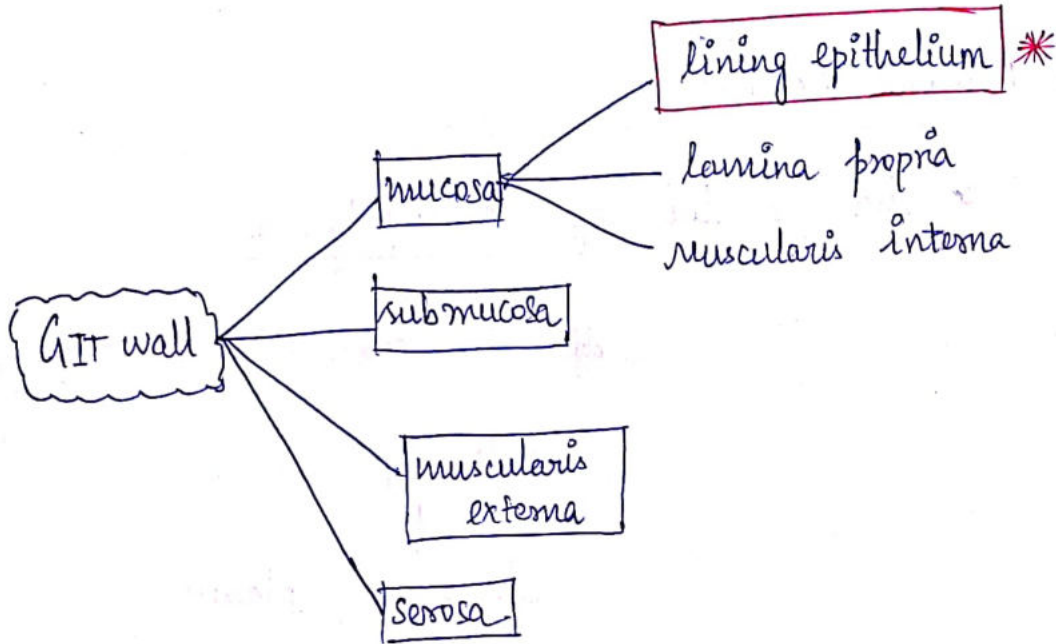
→ striated duct (Basal striations which push nucleus towards centre, & b/n infoldings MITOCHONDRIA is present.) [simple cuboidal to columnar]

↓
indicatⁿ that func. is reabsorpⁿ of electrolytes.

→ Excretory duct [Stratified COLUMNAR Epith.]

it opens into oral cavity
∴ oral cav. has Stratified Epith.
these ducts have st. col.

↓
to Anal Transition zone



III) Rest of GIT (from esophagus to Anus).

i) Esophagus:

NON-Keratinized Stratif. Squam. epi.

↓
although in kerato-Hyalin granules may be seen in surface cells.

ii) Stomach:

Simple Columnar epi. [surface mucous cells]
↓
Rich in HCO_3^- & K^+

iii) Small intestine

(Amplification of surface area).

i) Plica Circularis (valve of Kerkring)

ii) Villi

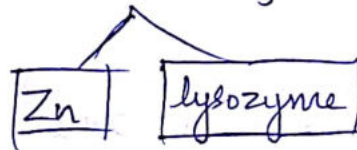
iii) MICROVILLI

* major amplification of surface area responsible for STRIATED border of ENTEROCYTES.

① Enterocytes (Tall Columnar with striated border)
covered with glycocalyx $\Rightarrow$ ^{help in} absorpn of A.A & A.sugar

② Goblet cells. [secrete mucus].

③ Paneth cells. [maintains immunity & gut flora]



④ Enteroendocrine cells.

⑤ M-cells (MICROFOLD cells) covers the lymphatic nodules in lamina propria. (GALT)

PGMEE

Note:

* Epithelium over GALT is lined by M-cells

* GALT, MALT etc present in LAMINA PROPRIA

IV) Large intestine & Appendix:

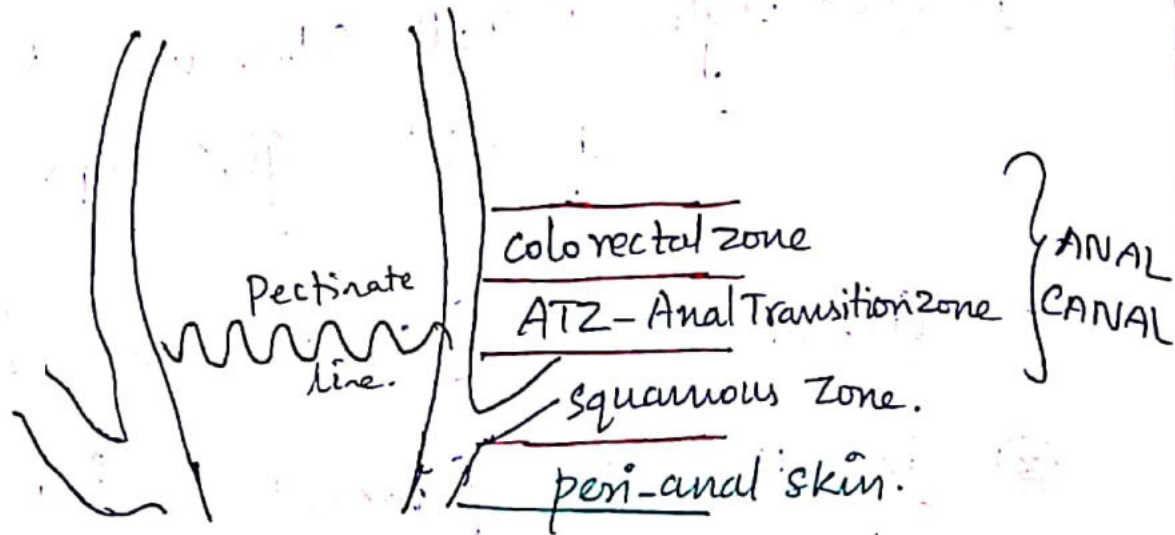
Plica ~~circum.~~ $\rightarrow$ X

villi $\rightarrow$ X

Crypts of Lieberkuhn $\rightarrow$ ✓



Mucous lining is same as S.I EXCEPT PANETH
& Mucous cells in enormous
-CELLS.



i) Colo-rectal. Zone

→ Simple columnar epithelium
(ie) same as above epithelium in large Int.).

ii) ATZ

→ STRATIFIED Columnar epithelium

iii) Squamous Zone

→ Stratified Squamous epithelium
(same as peri-anal skin)

* Gingiva & Hard plate - Kerat. Stratif. Squam epi.

Lips, cheek, alveolar
mucosa, floor of
* mouth, inf. surf - Non Kerat. stratif. Squam. epi
of Tongue &
soft palate.

* Dorsum of Tongue. - " " "

* Intercalated duct - Low cuboidal epi.

* Striated duct - Simple cuboidal to Columnar epi

* Excretory duct - Stratif. cuboidal/Columnar epi

* Esophagus. - Non Kerat. Stratif. Squam. epi

* Stomach - Simple columnar.

* S.I - Tall columnar with striated border

* L-I - Tall " " "

* Anal canal

→ Colo Rectal zone - Simple columnar epi
→ ATZ - Stratifi. column. epi
→ Squamous zone. - Stratif. Squam. epi.

X ————— X