Epithelia of the Digestive Tract

Objectives

- state the types of epithelia found in the alimentary tract
- Describe the functions of epithelia in different regions of the alimentary tract
- state the types of cells located in different epithelia in different regions

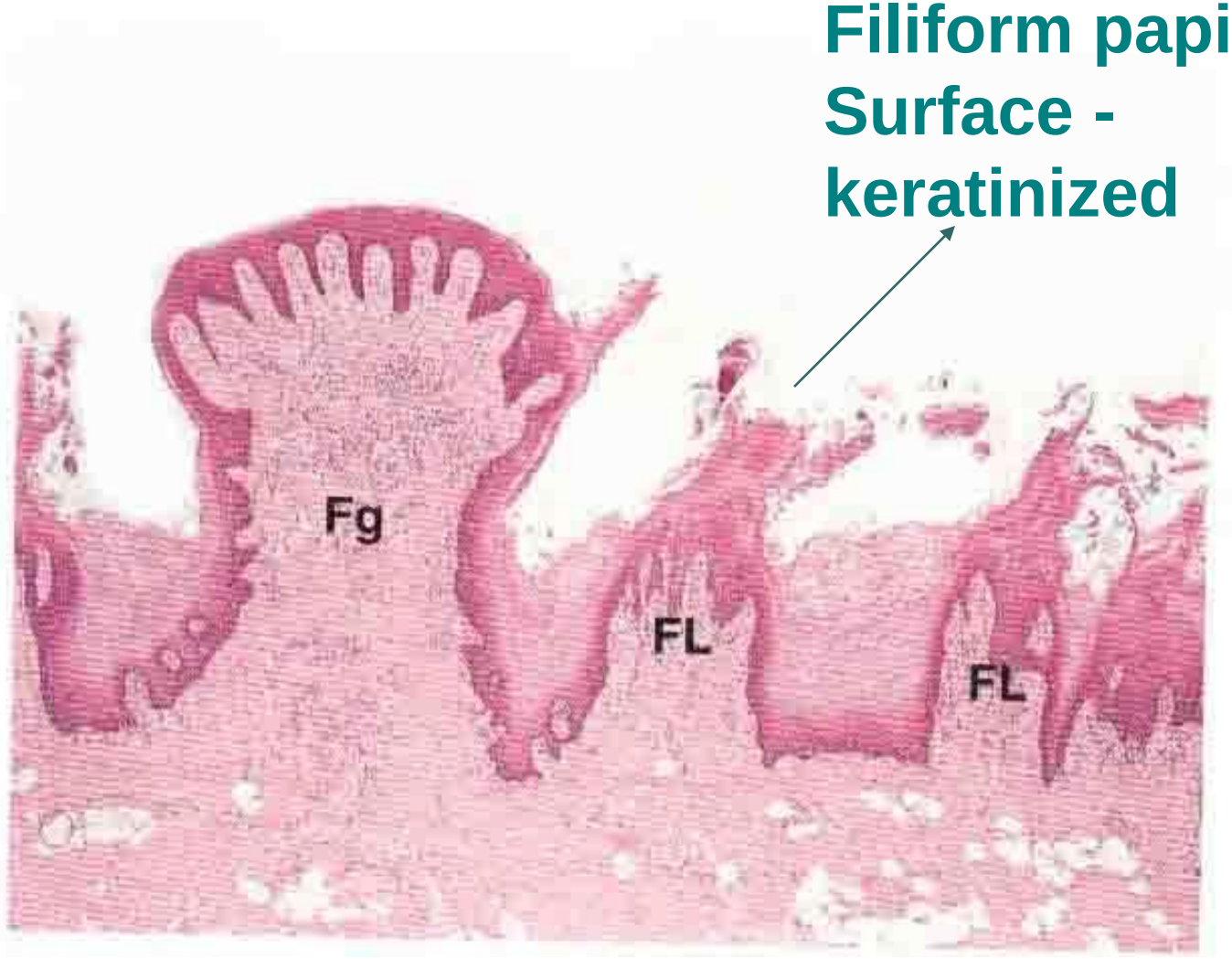
Component- parts

- Oral cavity- Tongue, Palate, Cheeks, Lip
- Pharynx
- Oesophagus
- Stomach
- Intestines
  - Small intestine
  - Large intestine
- Rectum
- Anal canal

Wet Epithelium-Stratified squamous non-keratinized

- Oral cavity to lower end of oesophagus and terminal anal canal
- Several cell layers
- Surface cells flattened, retain their nuclei
- Lubricated by mucosal glands
- Renewed continuously
- In lips transition from kertinized to non keratinized
- Tongue papillae-filiform type- keratinized

Stratified squamous epithelium



Why?

- Epithelium comes in contact with hard solid food-
- Epithelium exposed to continuous wear and tear
- Renewal is by proliferation of the stratum germinativum

Simple columnar epithelium

- ***Stomach to upper part of anal canal***

Functions:

- provides a selectively permeable barrier
- facilitate transport and digestion of food
- promote absorption of products of digestion
- produces hormones that effect the activity of the digestive system
- produces mucus for lubrication and protection

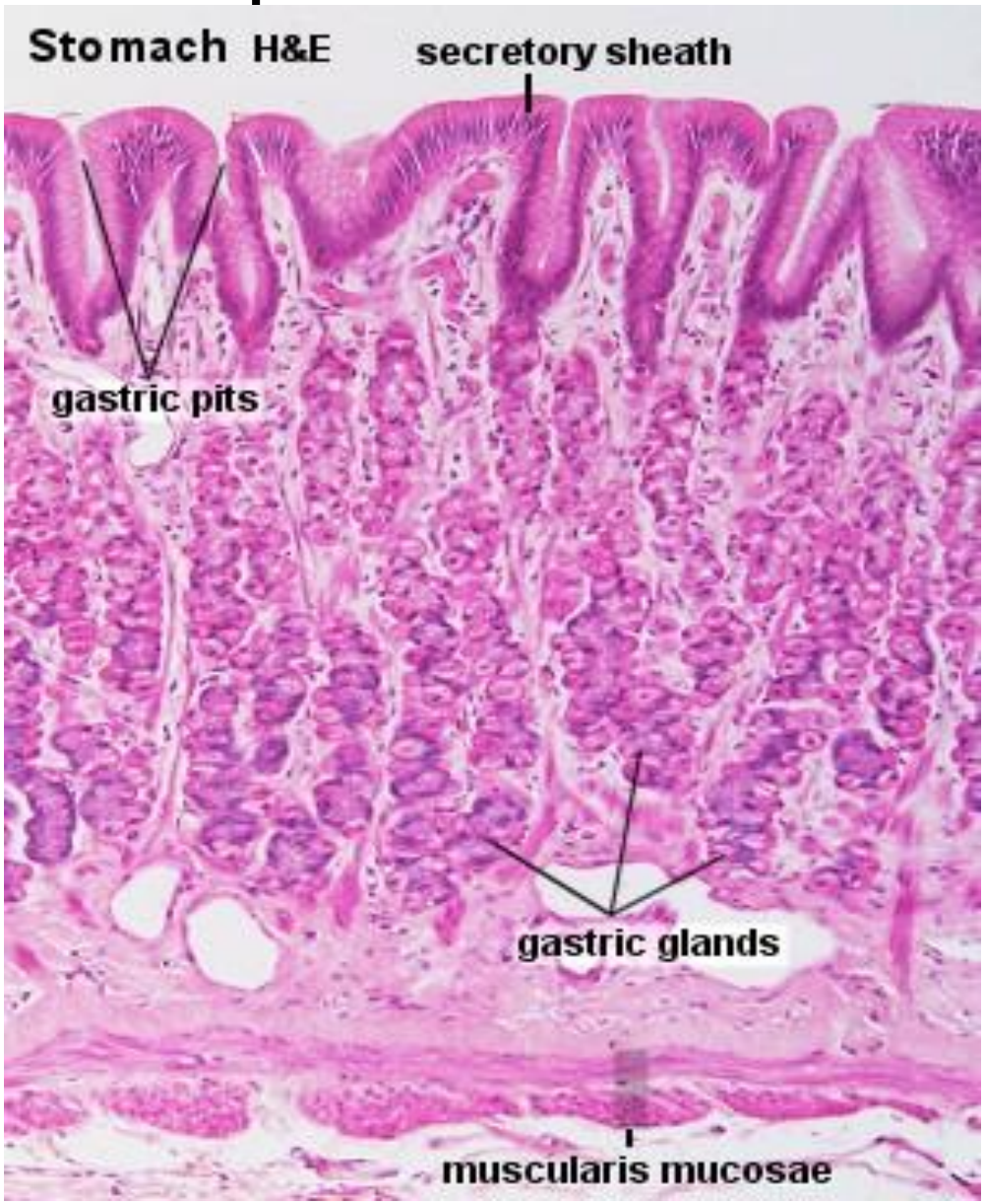
How the epithelium changes in different regions …….

***Stomach*: Simple columnar epithelium**

Several types of epithelial cells

- **Surface mucus cells** → **Mucus**
- **Mucus neck cells** → **Mucus**
- **Parietal cells** → **Hydrochloric acid**
- **Peptic cells** → **Pepsinogen**
- **Stem cells** → **Renewal**
- **Enteroendocrine cells** → **Endocrine**

Stomach- epithelial cells



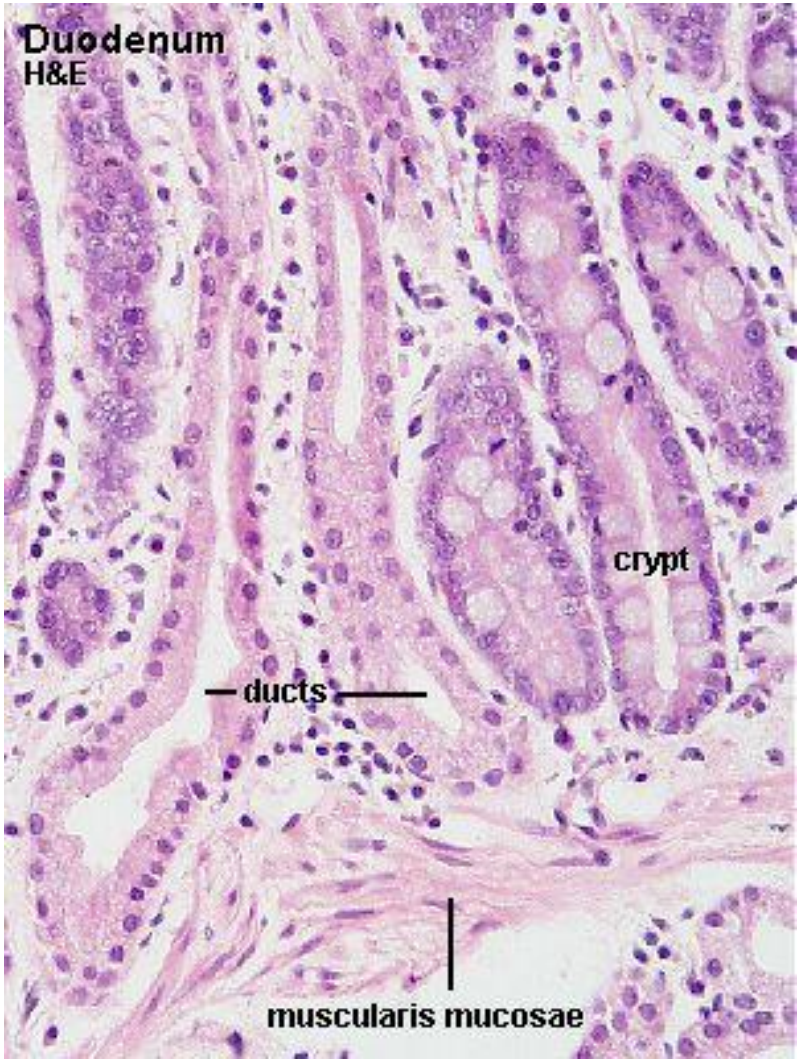
Simple columnar epithelium

Small Intestine- **Epithelium covers the surface of villi and that of glands**

Cells and their functions:

- **columnar cells → absorptive**
- **goblet cells → secretory**
- **paneth cells → secretory**
- **stem cells → renewal**
- **M cells → specialized cells**
- **Enteroendocrine cells → endocrine**

Small intestine



Simple columnar epithelium

Large intestine- lining surface and glands

Cells-

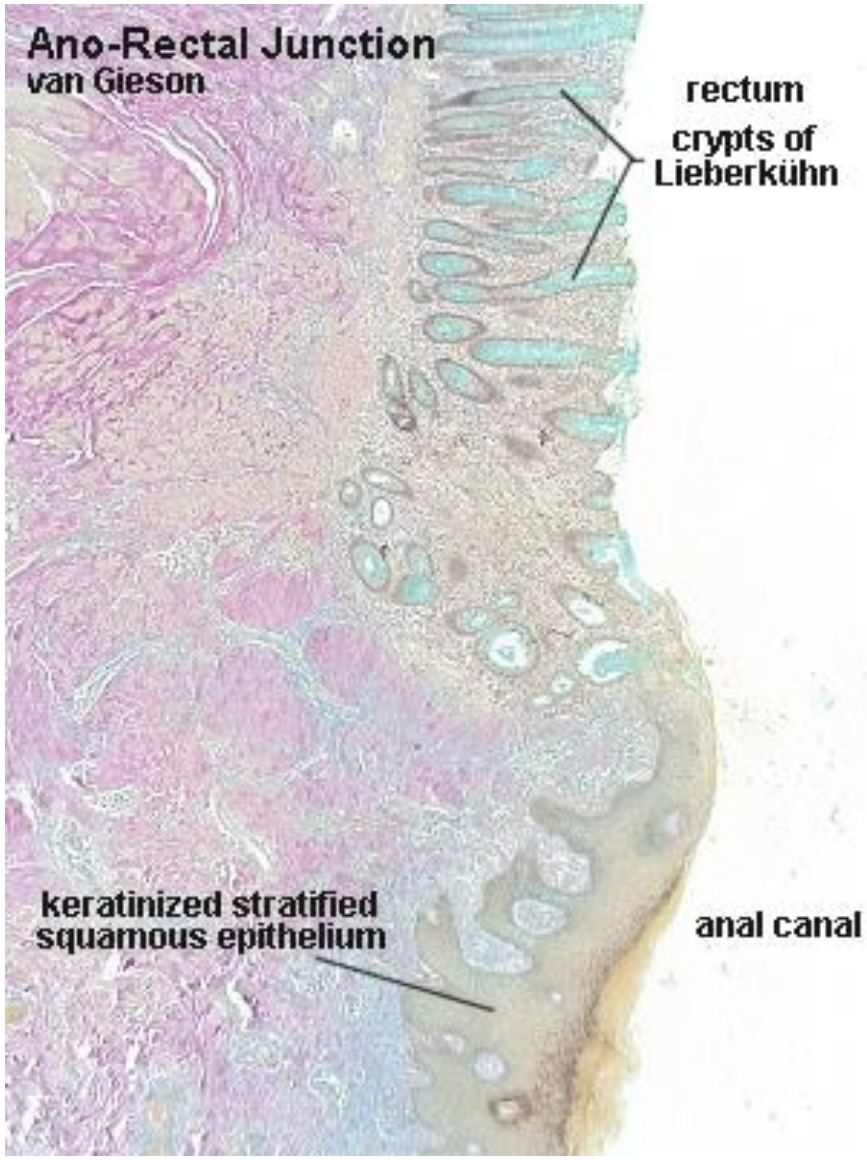
- absorptive

  water absorptive

- goblet cells

  mucus secretory

Ano –rectal Junction



Cell-Renewal

Epithelium of GIT

- Constantly being cast off
- Replace with new ones
- Mitosis of stem cells
- High rate of cell renewal in small intestine**

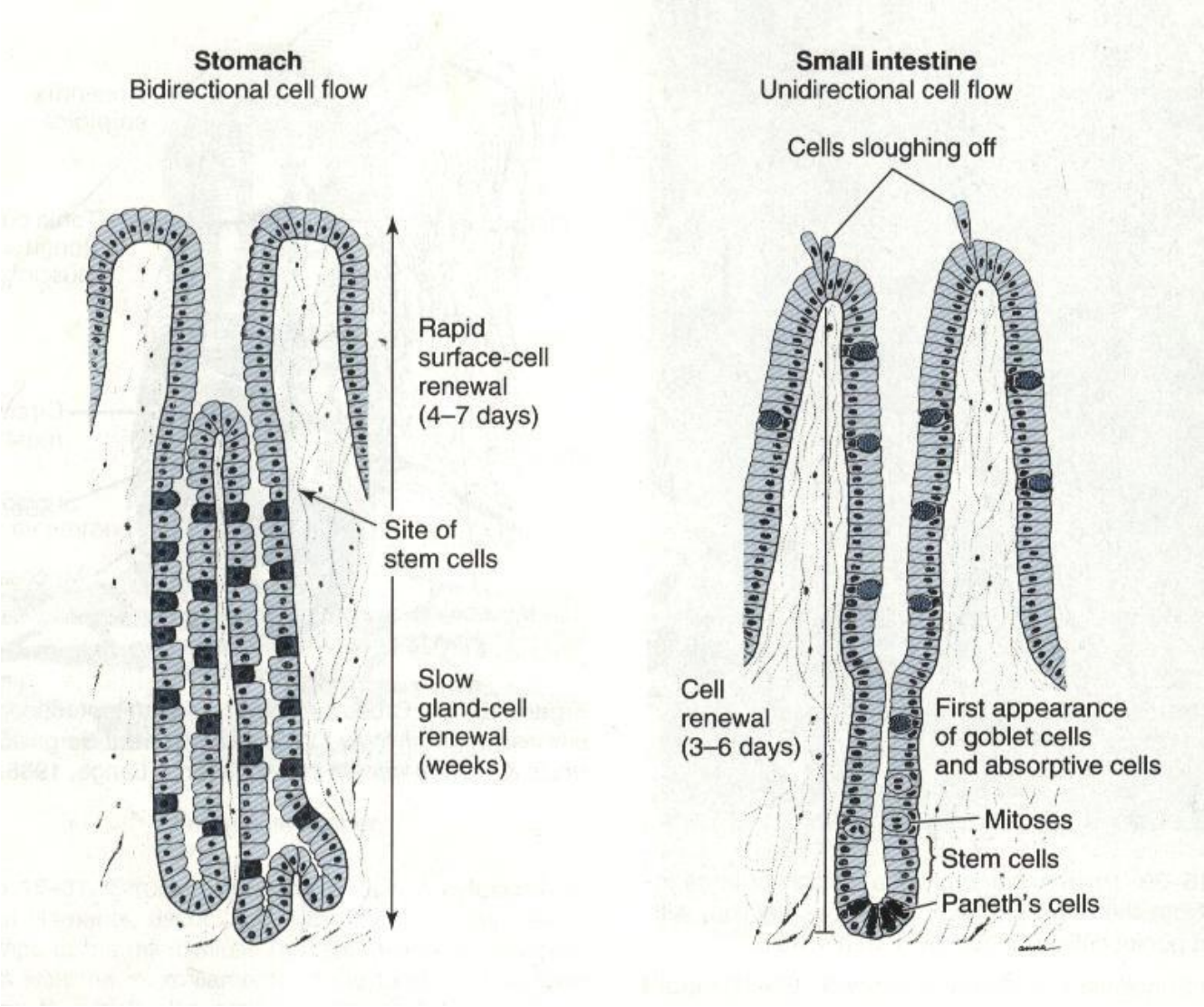
Where Stem cells are located

- Basal region in the oesophagus
- Neck region of gastric glands
- Lower half of intestinal glands
- Bottom third of crypts of large intestine
- From the proliferative zone → move to maturation area ← structural and enzymatic maturation

↓

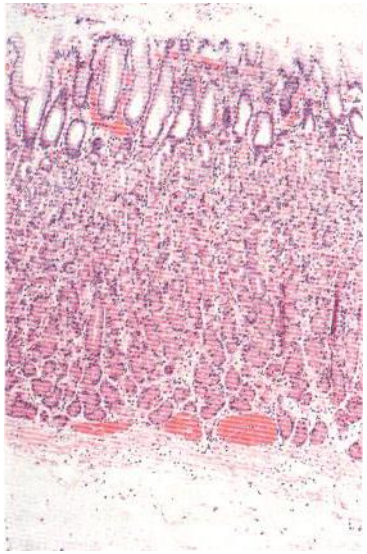
Functional cell population of each region

Cell-Renewal



Summary

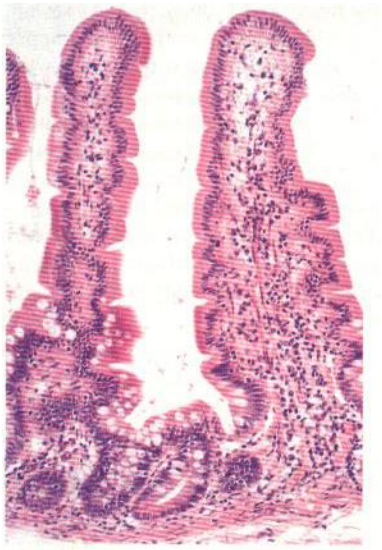
oesophagus



Body of stomach

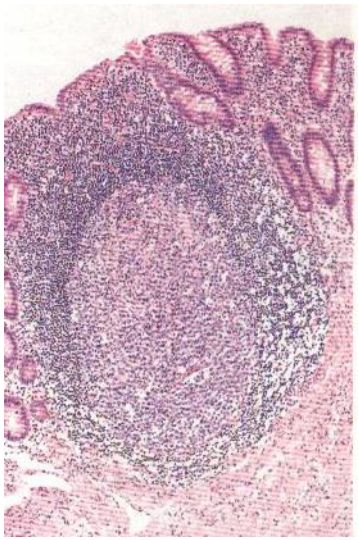
pylorus

duodenum



Jejunum /ileum

Colon/rectum



appendix

Anus

References

Basic Histology - L.U.Junqueira

Wheater's Functional Histology