LARGE INTESTINE

- **Objectives:**

By the end of this lecture the student should be able to:

1. Identify the histological structure of the 4 layers of colon.

2. Identify the histological structure of the 4 layers of appendix.

LARGE INTESTINE

■ It is divided anatomically into:

- – Appendix,
- – Cecum,
- – Colon (ascending, transverse, descending & sigmoid),
- – Rectum, and
- – Anal canal.

Regions of the large intestine

transverse colon
ascending colon
descending colon
cecum
sigmoid colon
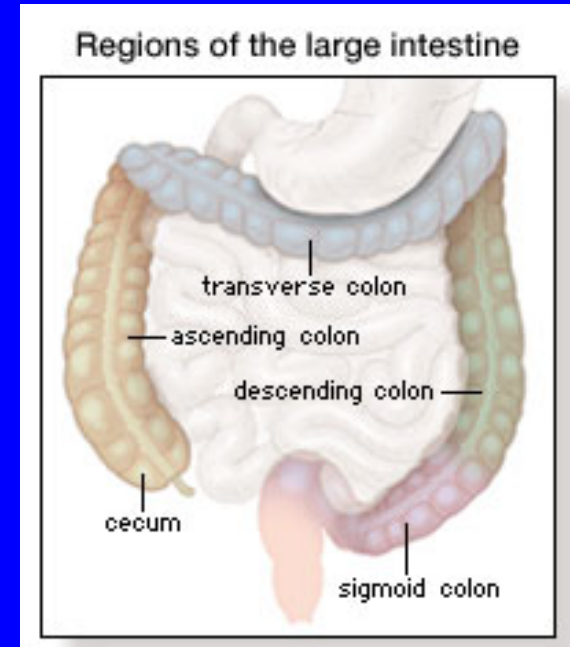
Colon
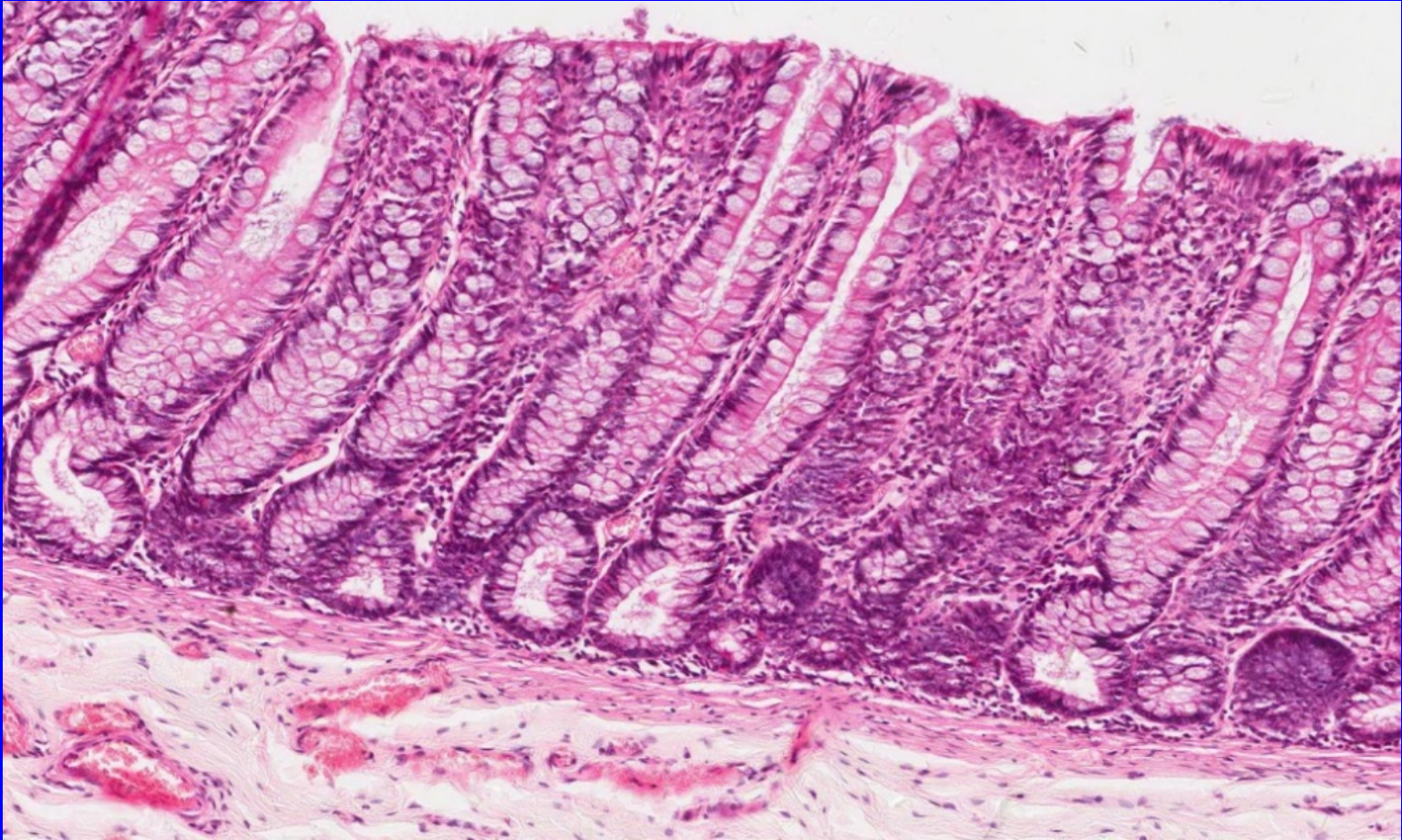
1. **Mucosa:**

   Shows *only crypts* (**NO villi**)

   – **Epithelium: simple columnar epithelium** with **numerous goblet cells**.

   – **Lamina propria:** Connective tissue containing numerous **crypts**. Cells of the crypts are the same as in small intestine but **NO Paneth cells**.
   Lymphatic nodules (solitary): frequent.

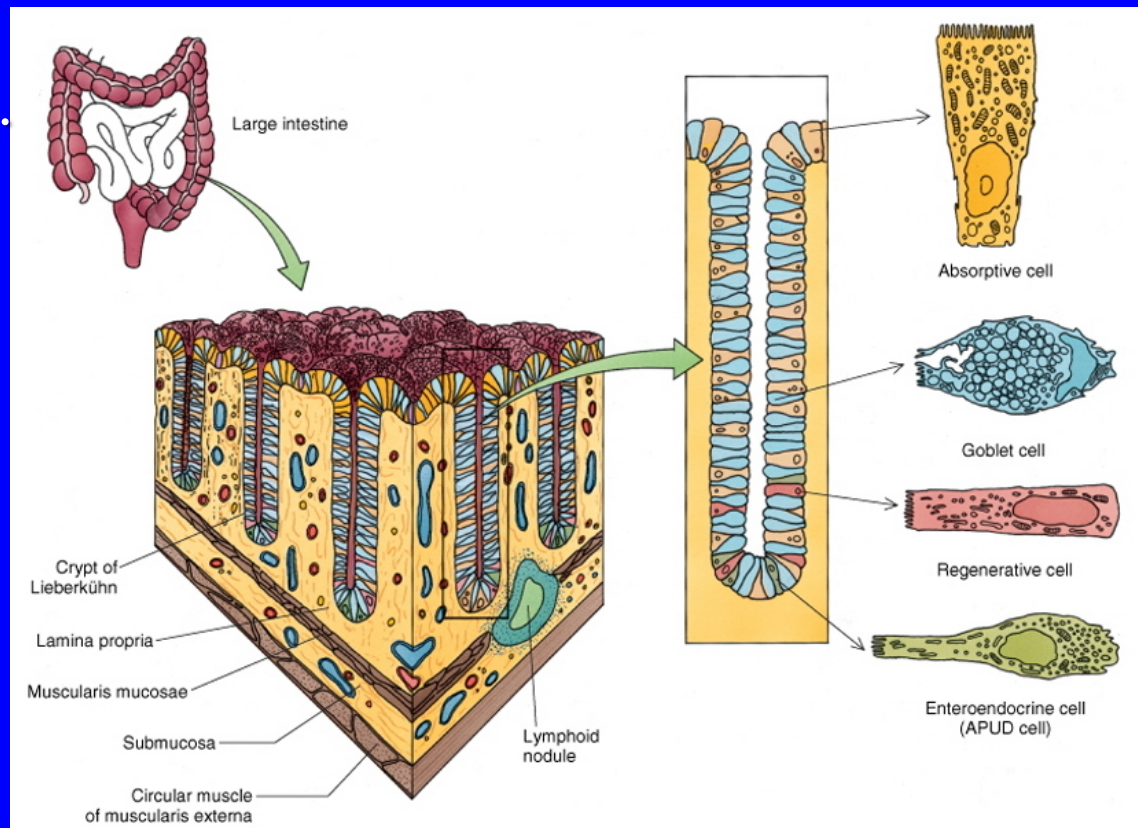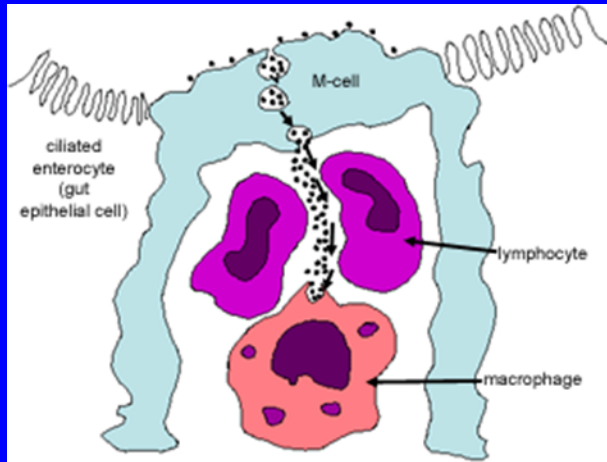   – **Muscularis mucosae:** 2 layers of smooth muscle.
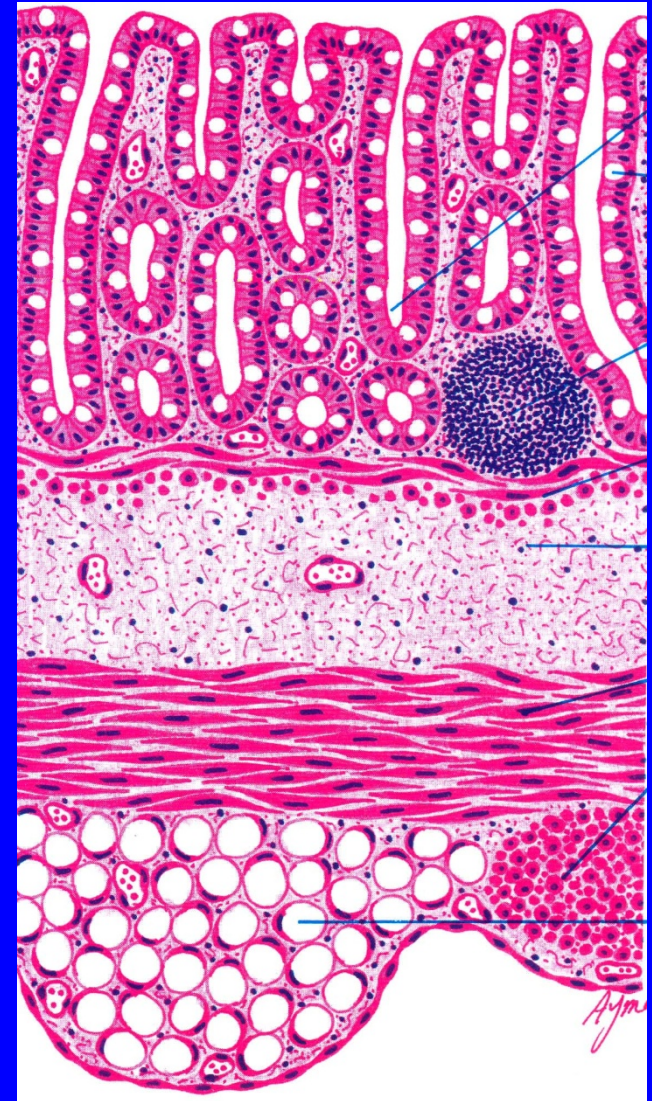
Mucosa of Colon

Intestinal Crypts of Colon

Cells lining the crypts are:
1. Surface columnar absorptive cells.
2. Goblet cells.
3. Enteroendocrine cells.
4. Stem cells.
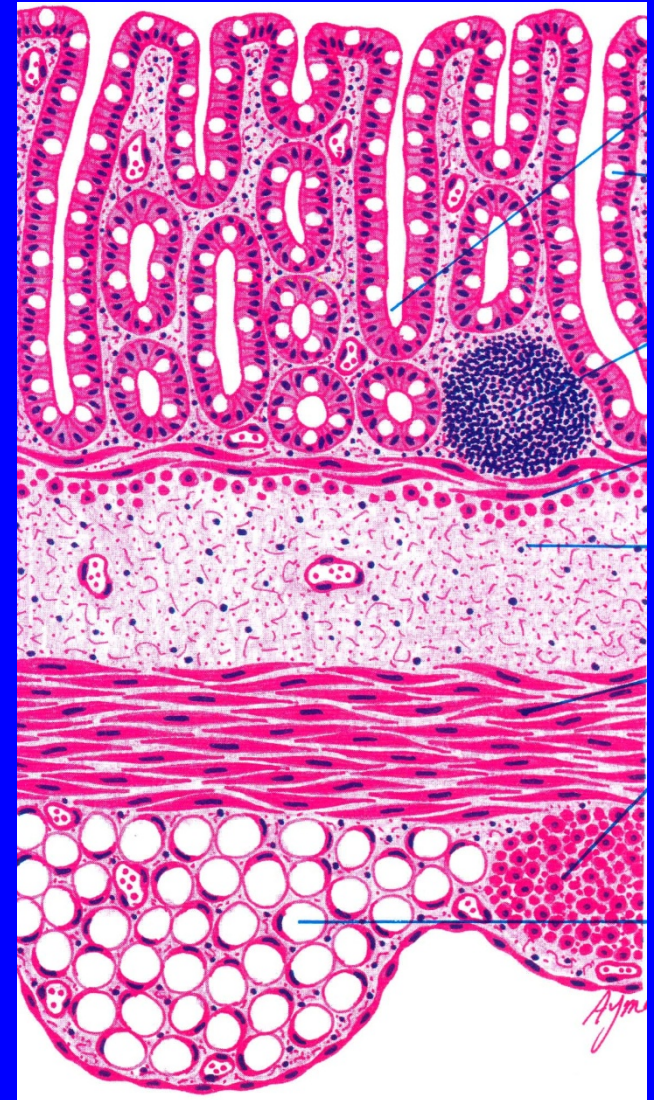5. M-cells.

Colon

2. **Submucosa:**
   - **NO glands**.
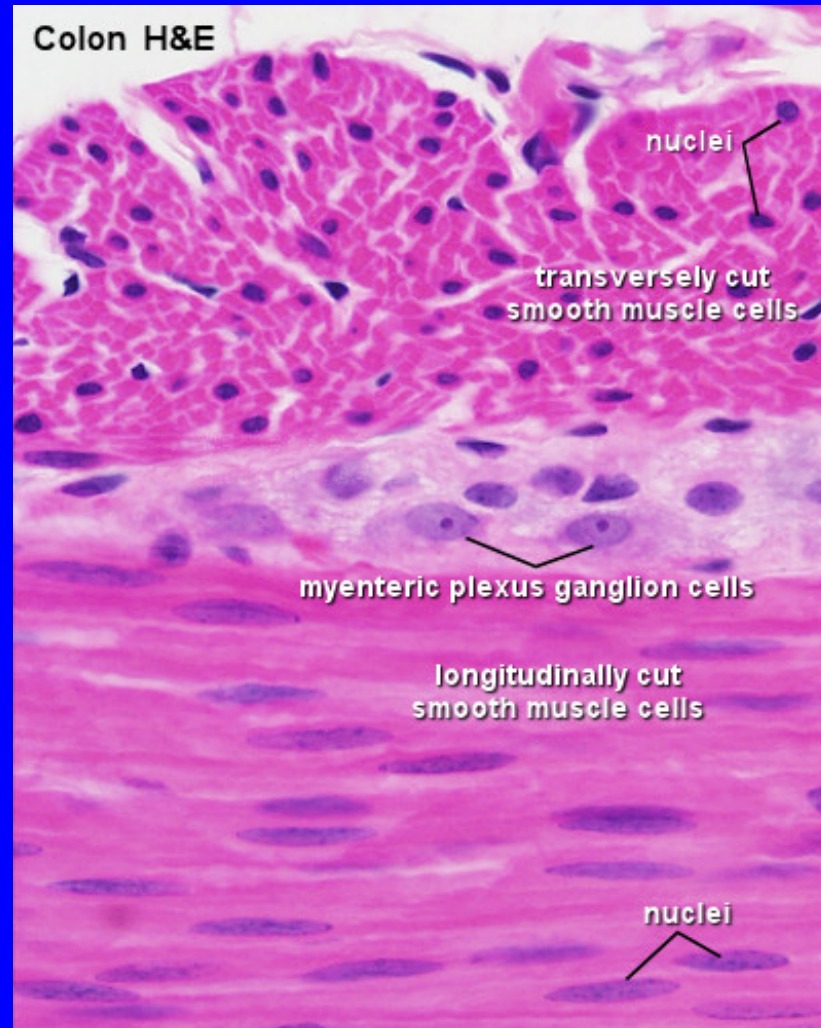   - Meissner's nerve plexus.
3. **Muscularis Externa:**
   - Inner circular & outer longitudinal smooth muscle layers.
   - The longitudinal layer is not continuous but in the form of 3 longitudinal ribbons or bands (**teniae coli**).
   - Auerbach's nerve plexus.
4. **Serosa:**
   - C.T. covered by mesothelium.
   - Has fat-filled pouches (pendulous masses) called **appendices epiploicae**.

Colon

Colon H&E

nuclei

transversely cut
smooth muscle cells

myenteric plexus ganglion cells

longitudinally cut
smooth muscle cells

nuclei

Vermiform Appendix

- Similar to the colon, but with much smaller diameter, shallow crypts, more lymphoid nodules (aggregated lymphoid nodules, all around, in lamina propria and extending into submucosa), Few goblet cells and more EE (DNES) cells.

- **Cells lining the crypts are:**

    1. Surface columnar absorptive cells.

    2. Goblet cells.

    3. Enteroendocrine cells.
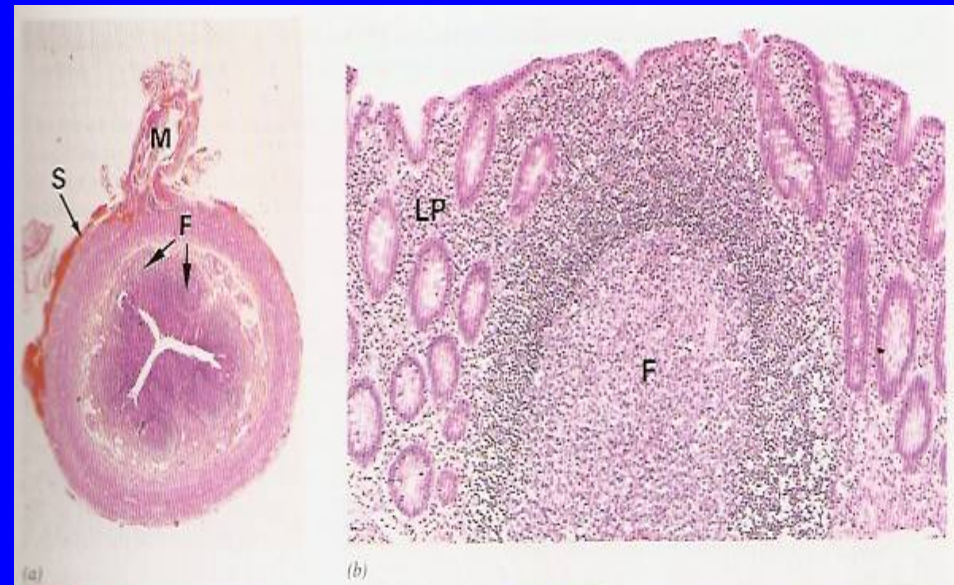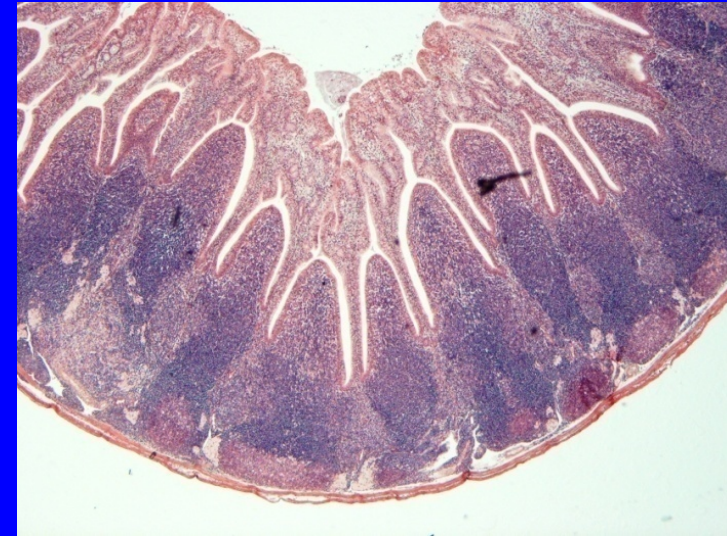
    4. Stem cells.

    5. M-cells.

    Muscularis mucosae:

    Not continuous.

    Muscularis externa:

    No teniae coli.
    It is invested by **serosa**.

Thank You