LARGE INTESTINE

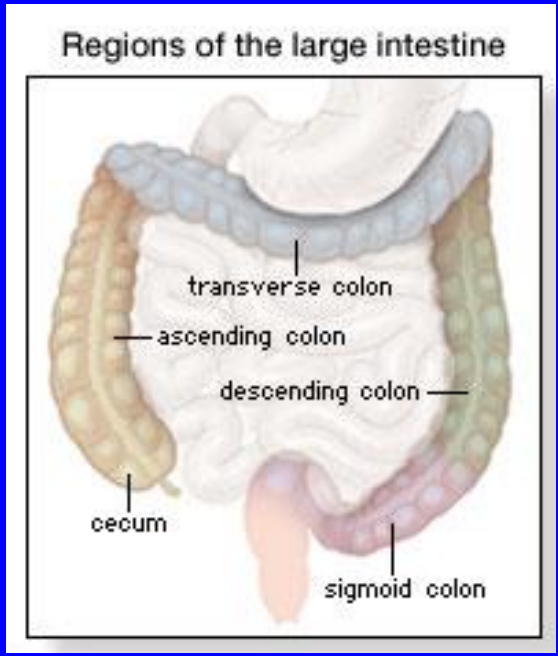
- **Objectives:**

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.



Colon

1. **Mucosa:**

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

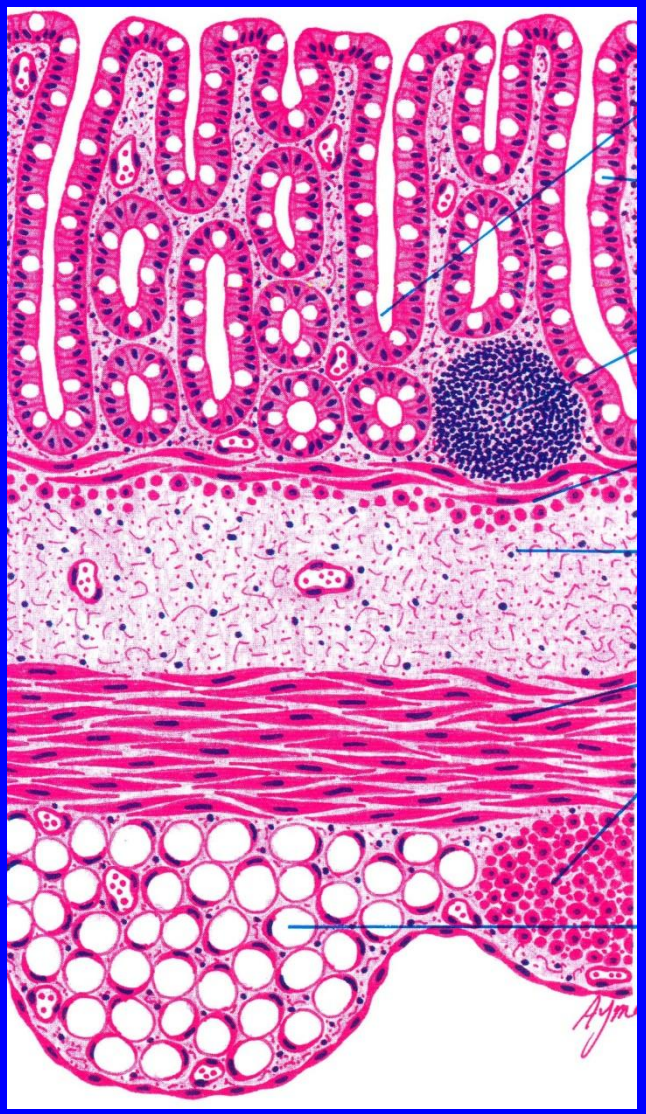
   –Epithelium: simple columnar epithelium with **numerous goblet cells**.

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

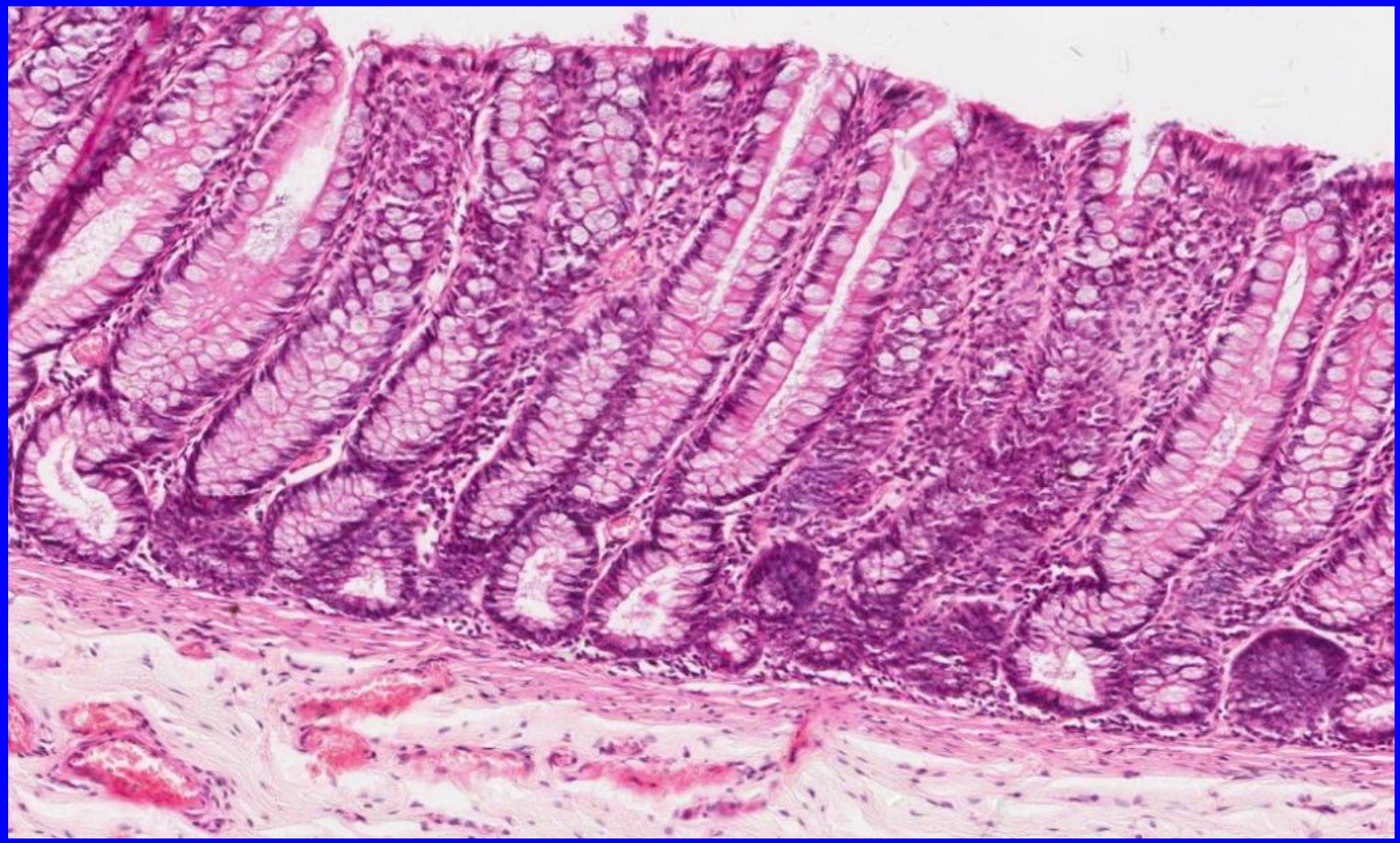
   Lymphatic nodules (solitary): frequent.

   –Muscularis mucosae:

   2 layers of smooth muscle.



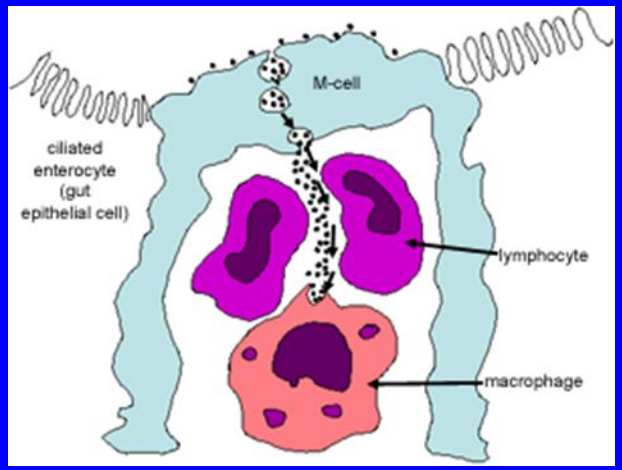
Mucosa of Colon

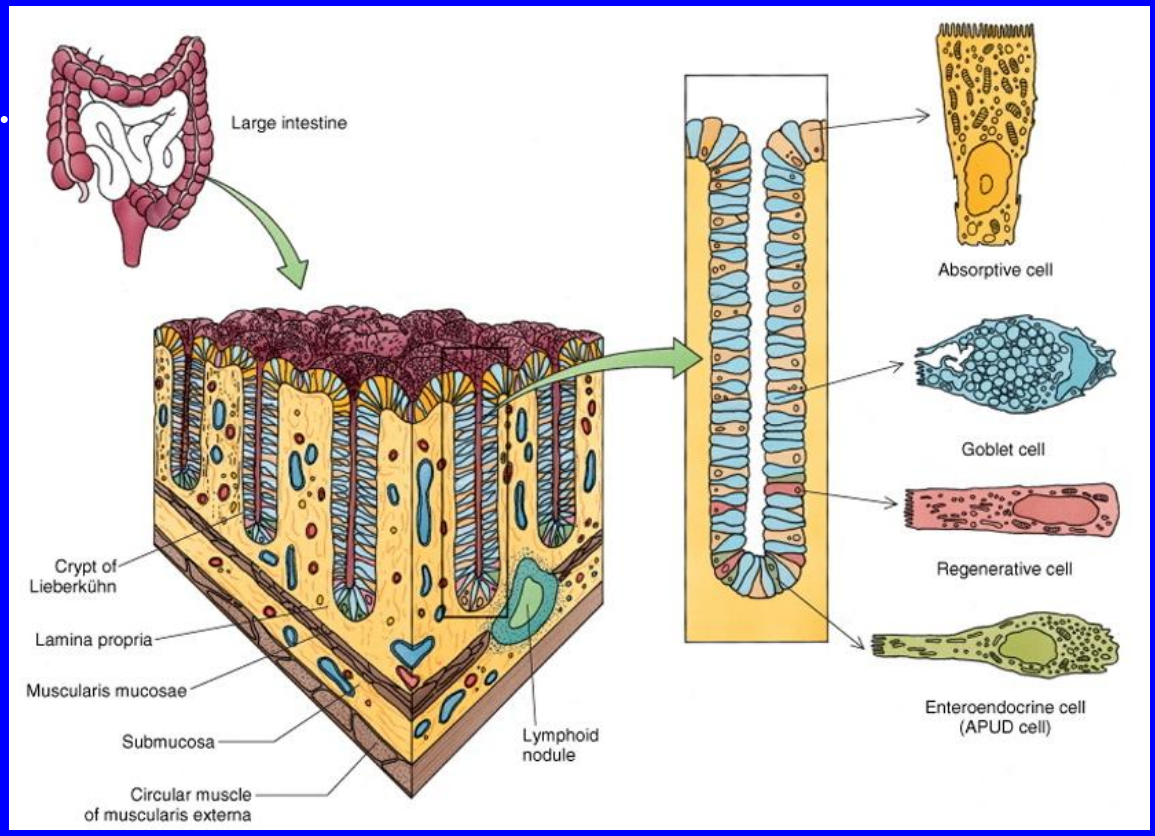


Intestinal Crypts of Colon

Cells lining the crypts are:

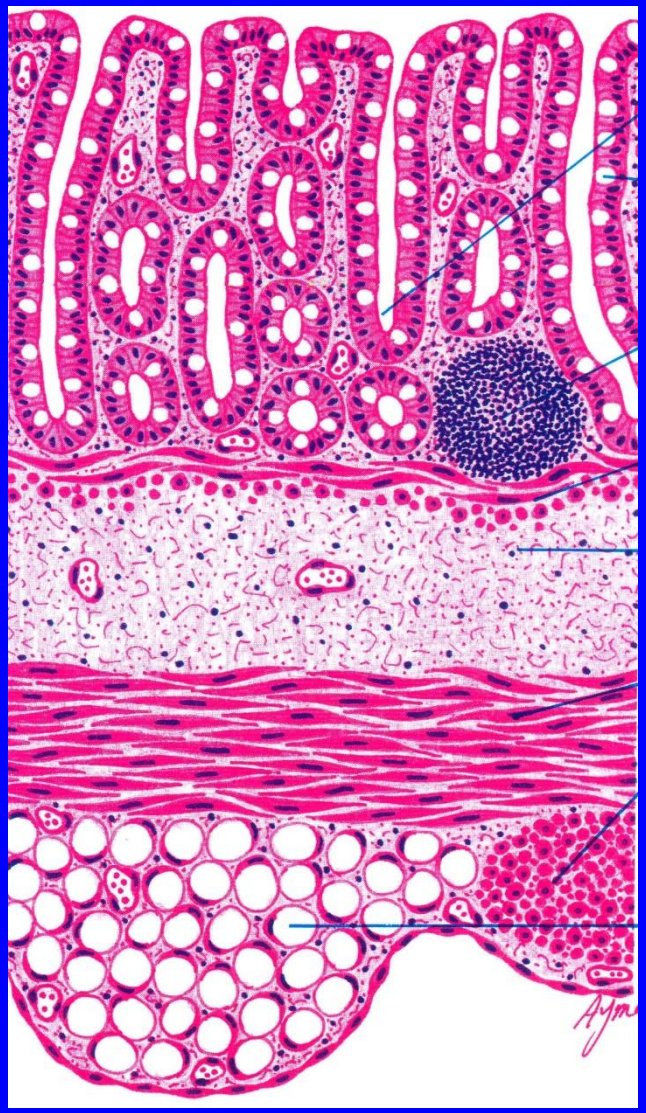
1. Surface columnar absorptive cells.
2. Goblet cells.
3. Enteroendocrine cells.
4. Stem cells.
5. M-cells.



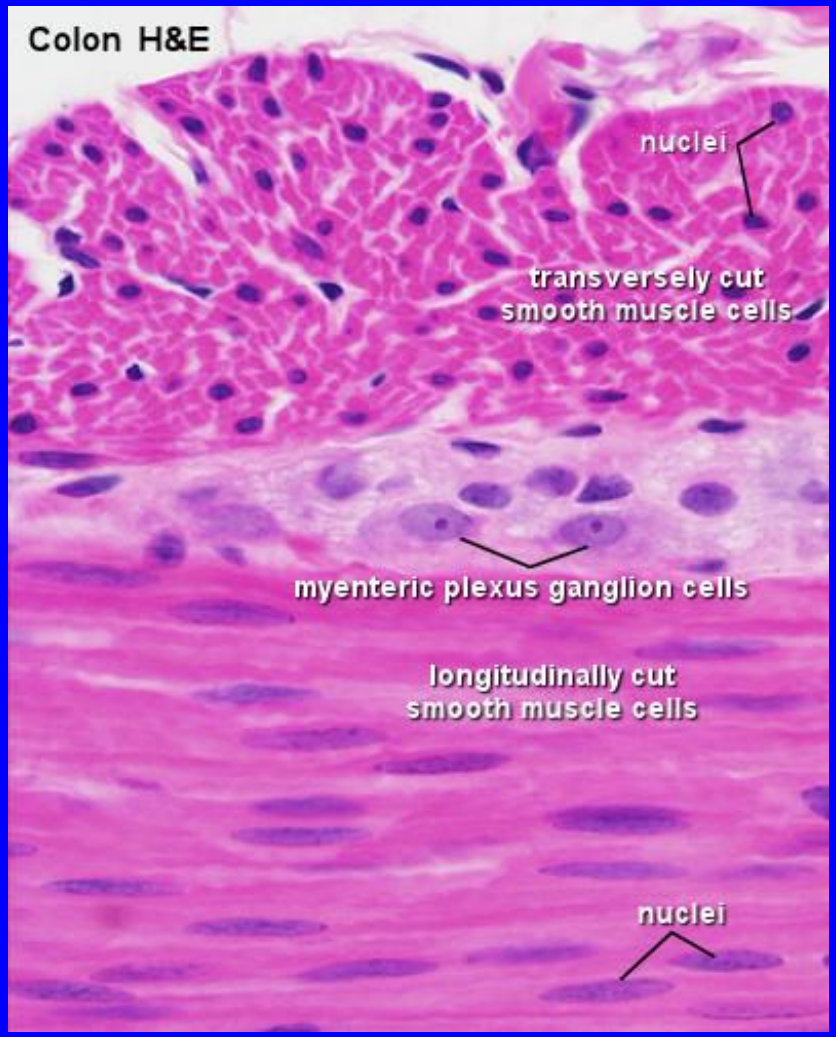


Colon

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

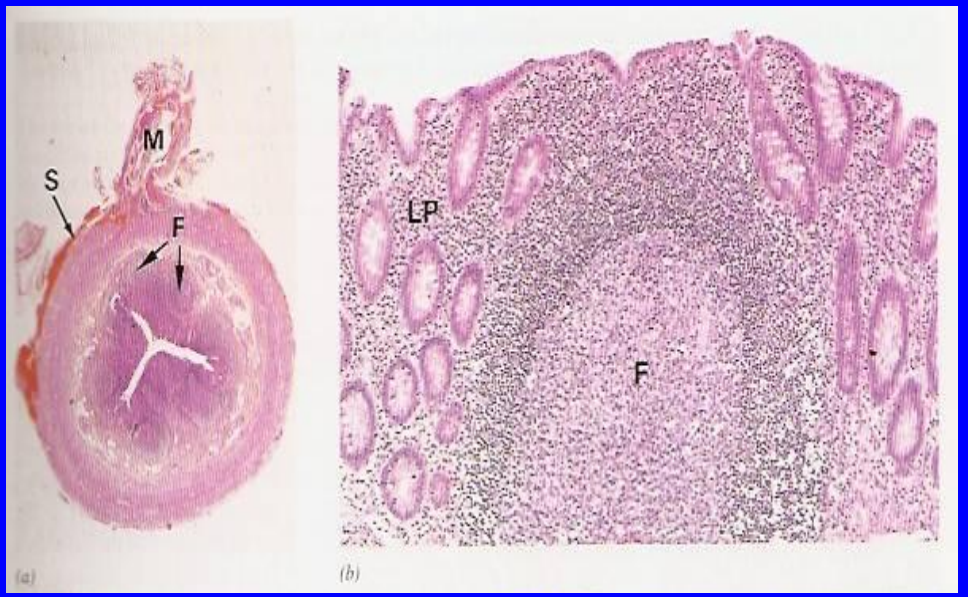
- Similar to the colon, but with much smaller diameter, shallow crypts, more lymphoid nodules (aggregated lymphoid nodules, all around, in lamina propria and extending into submucosa), Few goblet cells and more EE (DNES) cells.
- **Cells lining the crypts are:**
  1. Surface columnar absorptive cells.
  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