



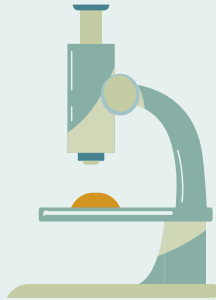
MED439
KING SAUD UNIVERSITY

Revised & Approved



Bassam Alasmari
Rania Almutiri

جامعة
الملك سعود
King Saud University



Histology Team
439

Large Intestine

Color index:

Slides



Important



Doctors notes



Extra



Editing file

► Objectives:

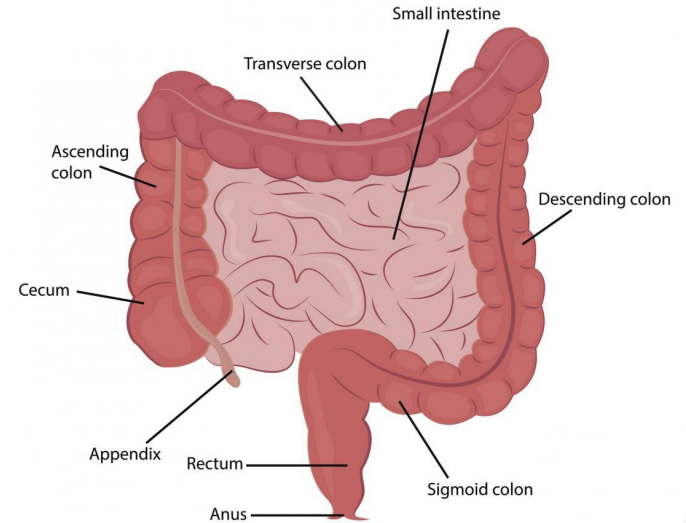
- Identify the histological structure of the 4 layers of colon.
- Identify the histological structure of the 4 layers of appendix.

► Large Intestine

All the large intestine similar except the appendix
The function of large intestine is mainly storage or reservoir.

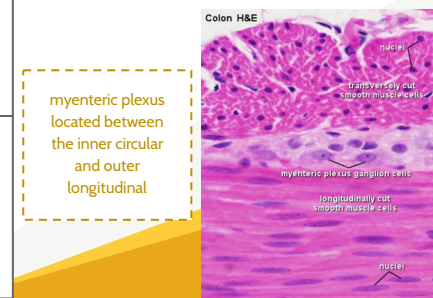
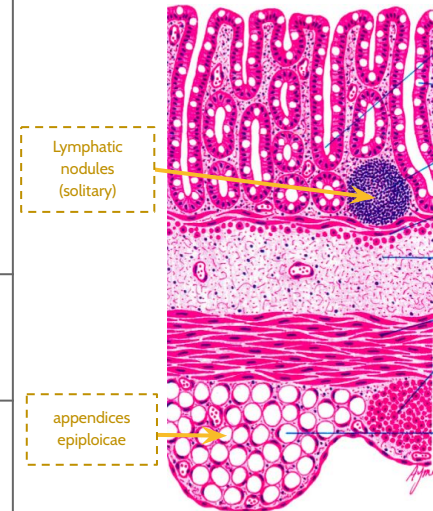
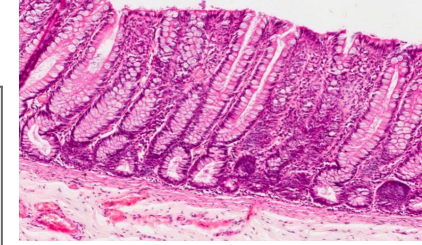
It is divided anatomically into:

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



▶ Colon

<p>Mucosa</p>	<p>Shows only crypts, NO villi</p> <p>A- Epithelium: <u>simple columnar epithelium</u> with numerous goblet cells that increases gradually and becomes more in the rectum for lubrication of feces and prevent the anal canal injury.</p> <p>B- Lamina propria: Connective tissue containing numerous crypts.</p> <ul style="list-style-type: none"> -Cells of the crypts are the same as in small intestine but NO Paneth cells (because they kills the bacteria and the bacteria of the large intestine is needed ربتنا خلى فيها paneth cells وعشان مافيهما lymphatic nodules to kill the harmful bacteria). -Lymphatic nodules (solitary 'زى الخاتم اللي له فص الالمانس'): frequent originated from the mucosa and if it becomes large it protrudes into the submucosa . <p>C- Muscularis mucosae (thin): 2 layers of smooth muscle cells.</p>
<p>Submucosa</p>	<ul style="list-style-type: none"> ● Meissner's nerve plexus. ● NO glands. (Like the jejunum and ileum)
<p>Muscularis Externa</p>	<ul style="list-style-type: none"> ● Inner circular & outer longitudinal smooth muscle layers. ● The outer longitudinal is not continuous but in the form of 3 longitudinal ribbons or bands (teniae coli). يشبها دائما بالشعر لما تقسميه الى ثلاث ظفائر واحدة ع الشمال من الامام وواحدة على اليسار وواحدة ورا (space in between the bands is adipose tissue from the serosa) والكثف واضح ويبقى ظاهر ● Auerbach's nerve plexus.
<p>Serosa</p>	<ul style="list-style-type: none"> ● C.T. covered by mesothelium. ● Has fat-filled pouches (pendulous masses) called appendices epiploicae. (component of adipose tissue from the serosa filling the space between bands of Teniae coli and when the muscle contracted is bulging)

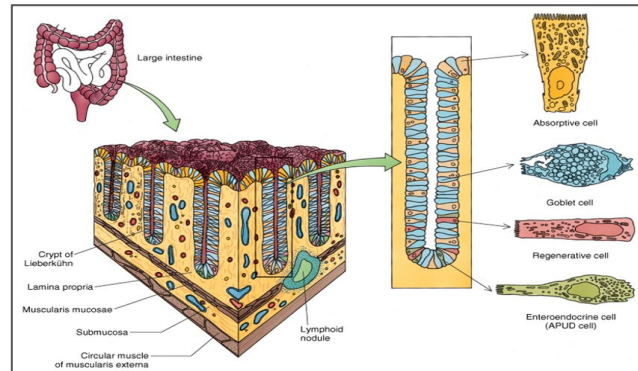
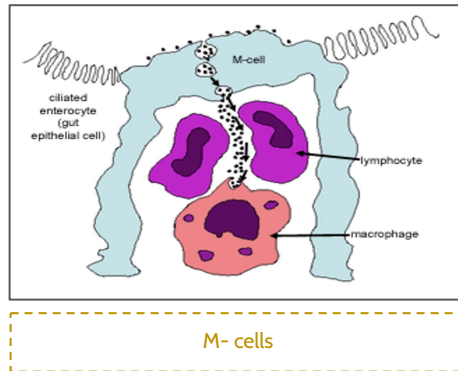


► Intestinal Crypts of Colon

Cells lining the crypts are:

- Surface columnar absorptive cells.
- Goblet cells.
- Enteroendocrine cells (for secretion of hormones that facilitate the movement and the secretion).
- Stem cells (to replace the cells).
- M-cells. Immune cells كانت خلية عادية حصل فيها infolding وصارت تحمل زي البوكيت فيه

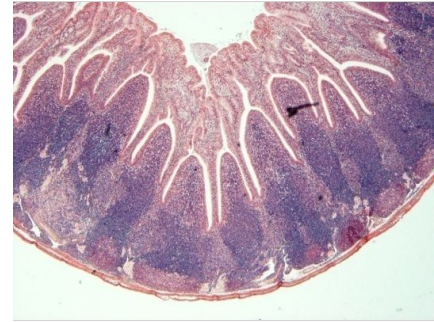
Wall thickness is thin to allow Ag to pass through to present it .



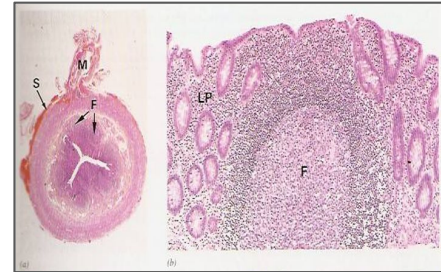
► Vermiform Appendix

- Similar to the colon, but with:
 - 1-**Much** smaller diameter
 - 2-**More** lymphoid nodules (aggregated lymphoid nodules, all around, in lamina propria and extending into submucosa),
 - 3-**More** EE (DNES) cells.
 - 4-**Shallow** crypts.
 - 5-**Few** goblet cells (cuz no feces here).
- Cells lining the crypts are the same as the colon (Surface columnar absorptive cells, Goblet cells, Enteroendocrine cells, Stem cells, M-cells)
- Muscularis mucosae is **not** continuous.
- Muscularis externa: **No teniae coli** (well developed inner and longitudinal for supporting the wall only), and is invested by **serosa**.

Vermiform appendix is a finger like projection, lymphoid organ (منه اطفال عند الاطفال من immune system formation سنة ٤ وتحت لأنها تشارك في so here it's function not for storage)



Lumen is slit like space with no food (if there's food = بيبقى فيه انفلاميشن=)



Rabbit appendix

MCQs

Q1) What is the lining epithelium of the colon ?

- A- Simple columnar with goblet cell
- B- Simple columnar epithelium only
- C- Simple squamous epithelium
- D- Transitional epithelium

Q2) Which one of the following is true about Vermiform Appendix?

- A- Has teniae coli
- B- Has many goblet cells
- C- Covered by serosa
- D- Continuous muscularis mucosae

Q3) Which of the following is true about colon?

- A- Covered by adventitia
- B- Composed of squamous epithelium
- C- The longitudinal muscle layer is not continuous
- D- Has submucosal glands

Q4) the Lymphatic nodules are found in which layer of the colon?

- A- Serosa
- B- Lamina propria
- C- Submucosa
- D- Muscularis mucosae

Q5) Which of these cells are not found in the colon?

- A- Goblet cells
- B- Paneth cells
- C- M cells
- D- EE cells

Q6) The appendices epiploicae has pouches filled with?

- A- Fat
- B- Protein
- C- Glucose
- D- Maltose

Team leaders

Mariam Alruhaimi

Mohamed Albabtain

Team members

Abdullah Alburikan

Fayez AlTabbaa

Mohammed Alhejji

 Nawaf Alshahrani

Nawaf Alghamdi

Yazeed Alomar

Afnan AlMohsen

Joud Alarifi

Maha Alqahtani

Nourah Alklaib

 Rania Almutairi

Shahad Alrasheed

 Sumo Abdulrahman

 Histology439team@gmail.com