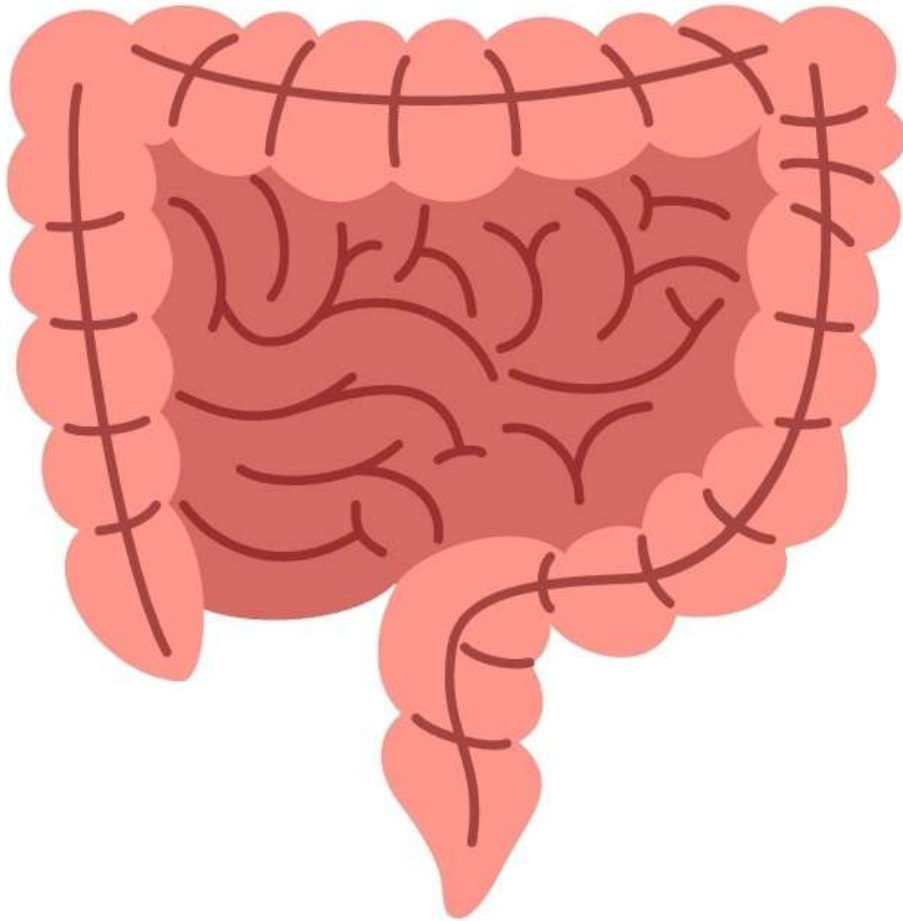


GIS



Sheet no. 1

Anatomy

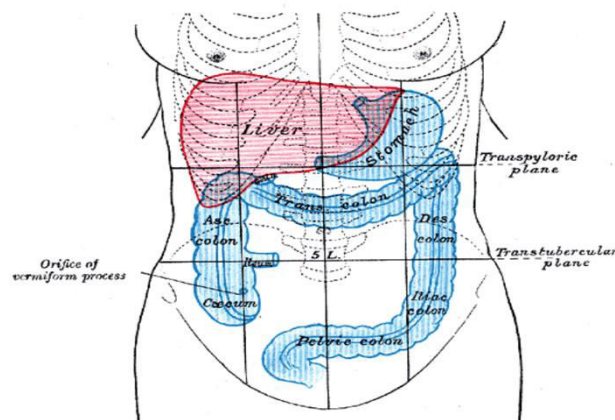


Done by: Doctor 018 + Bilal AlHamideh
Correction: Bilal Alhamaideh
Doctor: Mohammad AlMohtaseb

Ascending Colon (from midgut)

Location and Description:

- The ascending colon is about 5 inches (13 cm) long.
 - lies in the right lower quadrant.
 - It extends upward from the cecum to the inferior surface of the right lobe of the liver, where it turns to the left forming the right colic flexure (right hepatic flexure), then continues with the transverse colon.
 - Taenia coli, sacculations & appendices epiploicae are present.
 - The peritoneum covers the front and both sides of the ascending colon, fixing it to the posterior abdominal wall (Therefore, the ascending colon is retroperitoneal organ).
- ➔ Paracolic gutter presents on medial and lateral sides, this aids in the passage of fluid and infections.

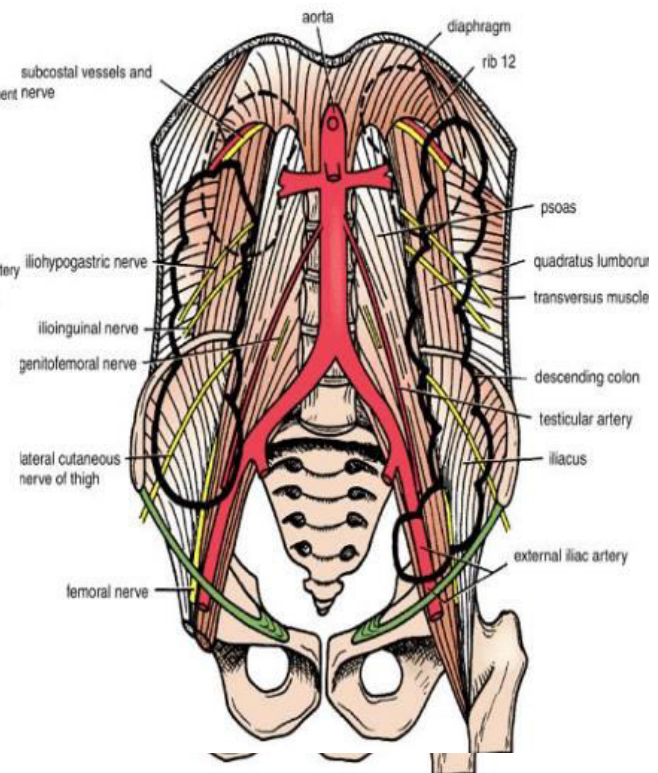
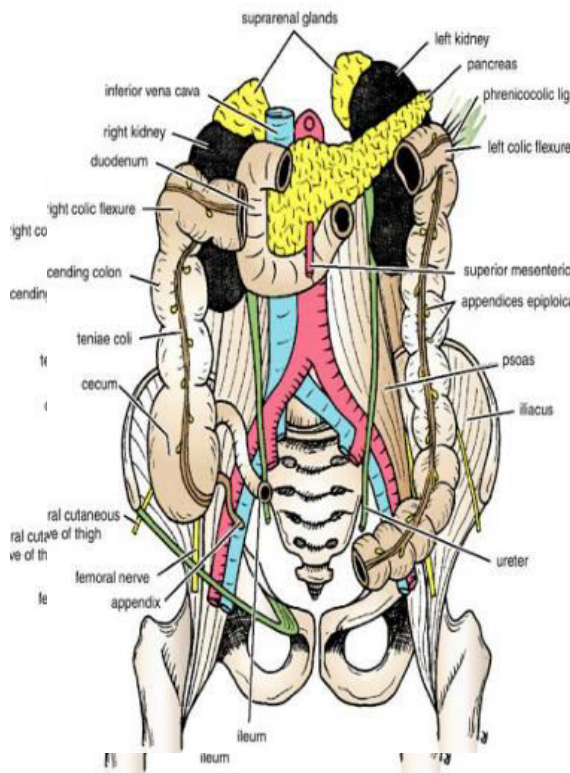


- From the pic. above, note that the left colic flexure (splenic flexure) is higher than the right colic flexure and is attached to phrenicocolic ligament.
- Phrenicocolic ligament (between the diaphragm and splenic flexure) has three functions:
 1. Fixation of the left colic flexure.
 2. Holding the spleen which lies above it.
 3. Prevent infection to pass upward under diaphragm.

Relations of ascending colon:

- Anteriorly:
 1. The anterior abdominal wall
 2. The greater omentum
 3. Coils of small intestine (ileum)
- Posteriorly:
 1. The iliopsoas muscle
 2. The iliac crest
 3. The quadratus lumborum
 4. The origin of the transversus abdominis muscle
 5. The lower pole of the right kidney
 6. The ilioinguinal and iliohypogastric nerves (L1) cross behind it.

NOTE: The ant. Relations are (same for both ascending and descending colons)



Blood Supply of Ascending colon:

Arteries

- The ileocolic & right colic branches of the superior mesenteric artery supplies this area.

NOTE:

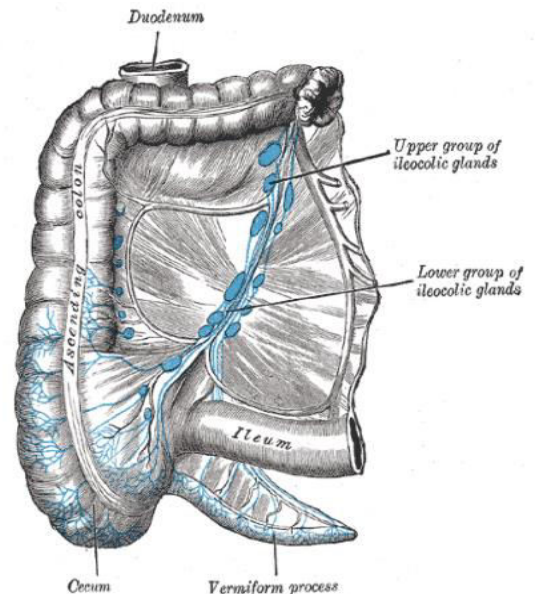
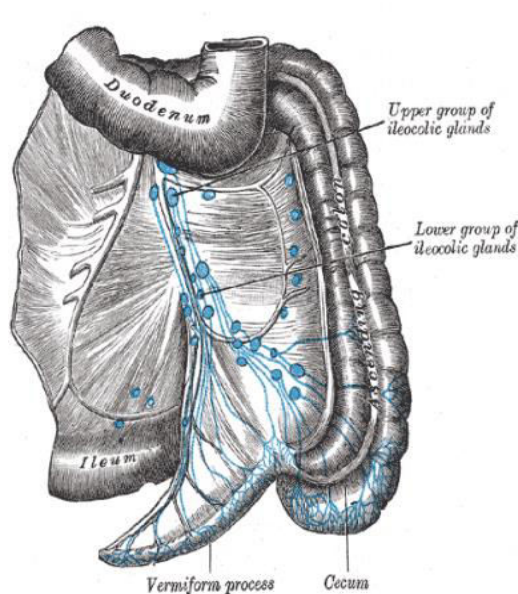
- The ileocolic artery supplies the ileum, caecum and the beginning of the ascending colon.

Veins

- The veins correspond to the arteries and drain into the superior mesenteric vein. The superior mesenteric V. meet the splenic V. behind neck of pancreas to form the portal vein.

Lymphatic drainage of Ascending colon

-The lymphatic vessels drain into lymph nodes lying along the course of the colic blood vessels then the superior mesenteric nodes around the origin of the superior mesenteric artery.



Nerve Supply of ascending colon:

-Sympathetic (from greater and lesser splanchnic nerves, from superior mesenteric ganglia, from (T6-T9)) and parasympathetic (vagus) nerves from the superior mesenteric plexus.

Transverse colon

- The transverse colon is about 15 in. (38 cm) long.
 - extends across the abdomen.
 - occupying the umbilical region.
 - It begins at the right colic flexure below the right lobe of the liver then ascends to the left colic flexure below the spleen.
 - Hangs downwards.
 - It is intraperitoneal organ (completely covered by peritoneum), has a mesentery called transverse mesocolon.
 - Suspended by the transverse mesocolon from the pancreas.
 - Transverse mesocolon is formed by the two ascending layers of greater omentum (anterior and posterior) covering superior and inferior surfaces of the transverse colon, respectively.
- Then, these two layers blend together and go to posterior abdominal wall, specifically the anterior border of pancreas.
- Some books state: it begins from the anterior border of pancreas as two layers reaching the two layers of greater omentum to surround the transverse colon
- It contains blood vessels, lymphatic vessels, lymph nodes, sympathetic and parasympathetic fibers
- The position of the transverse colon is extremely variable and may sometimes reach down as far as the pelvis.
 - Taenia coli, sacculations & appendices epiploicae are present

Relations of Transverse colon:

- Anteriorly:
 1. The greater omentum
 2. The anterior abdominal wall (umbilical and hypogastric regions)
- Posteriorly:
 1. The second part of duodenum
 2. The head of pancreas
 3. The coils of jejunum and ileum

Blood Supply of transverse colon:

Arteries:

-The transverse colon: is divided into:

- The proximal (medial) two thirds (mid gut): is supplied by the middle colic artery, a branch of the superior mesenteric artery.

- The distal(lateral) third (hind gut): is supplied by the left colic artery (has superior & inferior branches), a branch of the inferior mesenteric artery.

■ **Veins:**

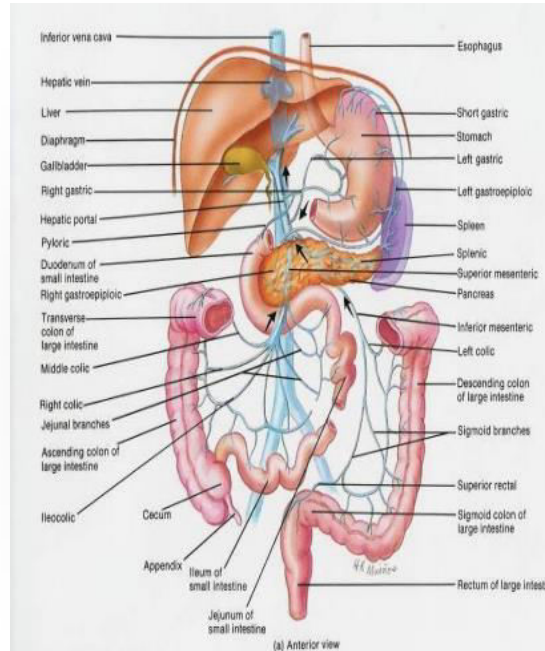
- The veins correspond to the arteries and drain into the superior & inferior mesenteric veins.

Lymphatic Drainage of transverse colon:

- The distal third drains in the colic nodes and then into the inferior mesenteric nodes
- The proximal two thirds drain in the colic node and then into the superior mesenteric nodes.

Nerve Supply of transverse colon:

- The proximal two thirds are innervated by sympathetic (superior mesenteric ganglia) and parasympathetic (vagus nerves) fibers through the superior mesenteric plexus around superior mesenteric artery.
- The distal third is innervated by sympathetic (inferior mesenteric ganglia L1-L2) and parasympathetic (Sacral spinal nerves S2-S4) fibers through the inferior mesenteric plexus around inferior mesenteric artery.



Descending Colon (from hind gut)

Location and Description:

- The descending colon is about 10 in. (25 cm) long.
- It extends downward from the left colic flexure to the pelvic brim (inlet of pelvis), where it continues as sigmoid colon.

- the peritoneum covers the anterior and both sides of descending colon (retroperitoneal organ).
 - ➔ Paracolic gutters present on medial and lateral borders of descending colon
- Taenia coli, sacculations & appendices epiploicae are present

Relations of Descending colon:

- Anteriorly
 1. Anterior abdominal wall
 2. The Greater omentum
 3. Coils of small intestine
- Posteriorly
 1. The later border of the left kidney
 2. The origin of the transversus abdominis muscle
 3. The quadratus lumborum
 4. The iliac crest
 5. The iliacus muscle
 6. The left psoas
 7. The ilioinguinal and iliohypogastric nerves
 8. The lateral cutaneous of the thigh
 9. The femoral nerve

Blood Supply of Descending colon:

- **Arteries:**
 - The left colic (mainly) and the sigmoid branches (mainly supplying sigmoid colon, but some branches supply the end of descending colon), which are branches of the inferior mesenteric artery.
- **Veins:**
 - The veins correspond to the arteries → into the inferior mesenteric vein.

Lymphatic Drainage of descending colon:

- The colic lymphatic nodes & the inferior mesenteric nodes around the origin of the inferior mesenteric artery.

Nerve Supply of Descending Colon:

- The sympathetic (inferior mesenteric ganglia L1-L2) and parasympathetic (sacral spinal nerves S2-S4) through the inferior mesenteric plexus around inferior mesenteric artery.

