Anatomy

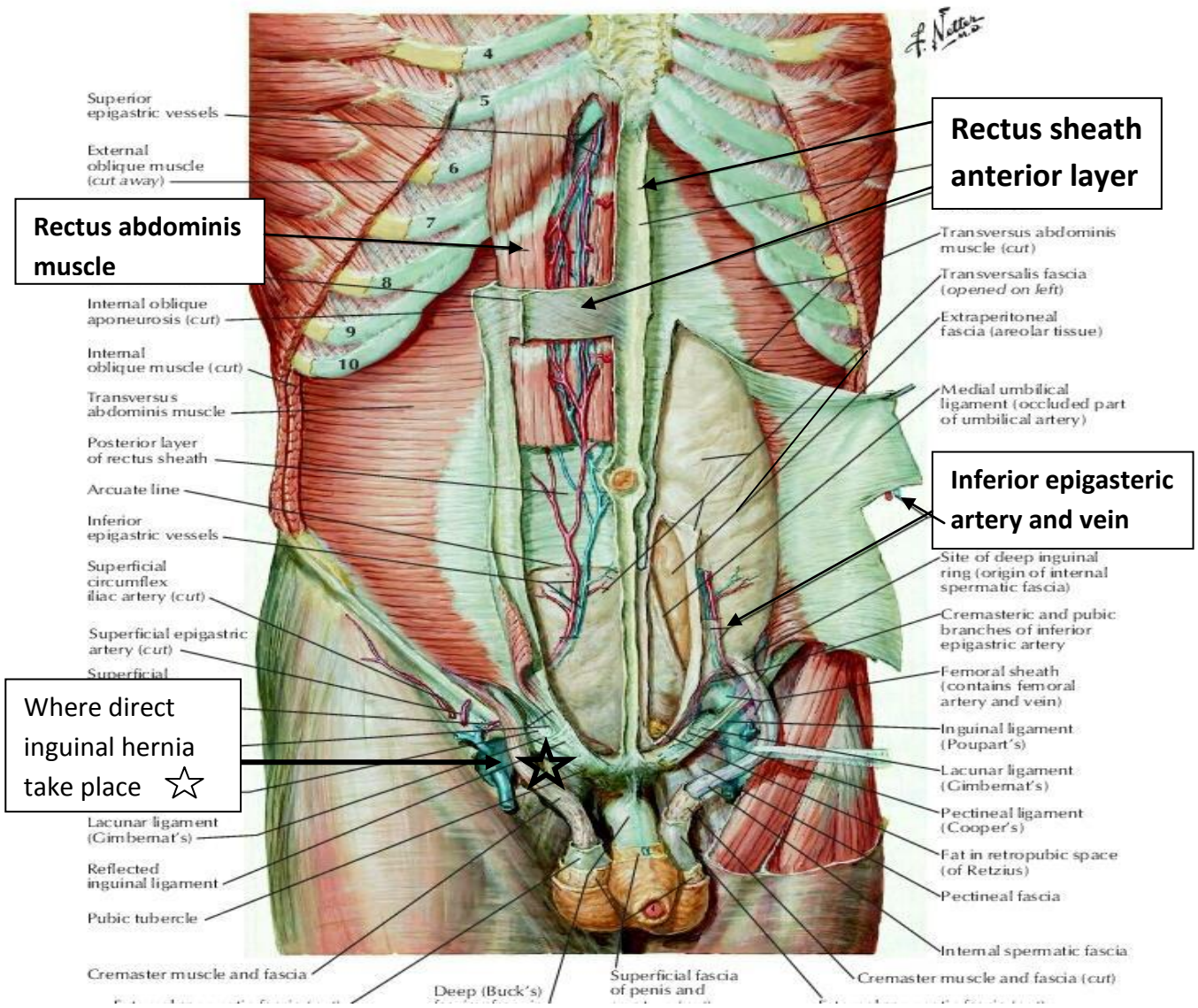
● Sheet ○ Slide

number 3

Done by Renad Zakaria

Correction Ammar Ramadan

Doctor Mohammad AL-Mohtaseb



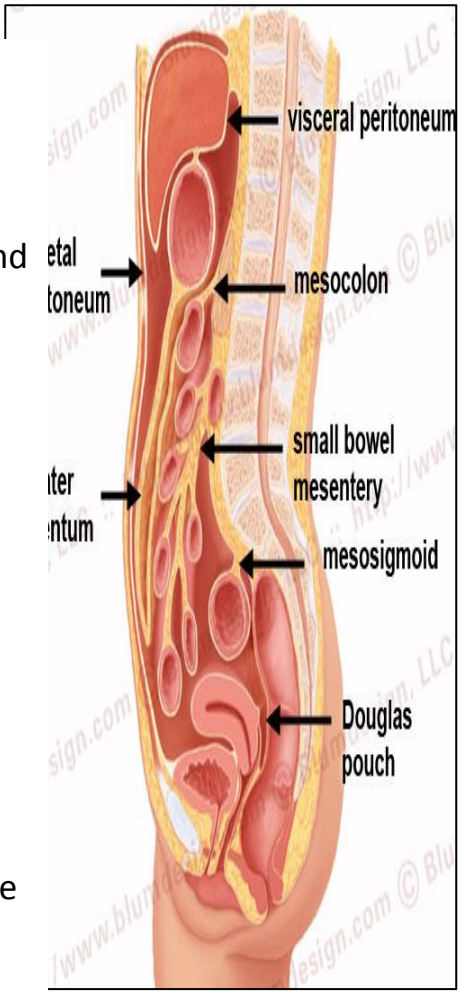
-the doctor reviews some points from previous lab.

-Deep to the rectus abdominis intercostals nerves (or thoracic).

-inferior epigastric artery a branch of external iliac artery.

**so let's start with our lab

-If we open the anterior abdominal wall we will face the abdominal cavity (abdominal cavity is the space confined by the diaphragm above, and the pelvic inlet below) surrounded by peritoneum (parietal peritoneum), imagine the peritoneum as a blown-up round balloon inside a sealed abdomen with extra peritoneal fat.



-if we start from superficial to deep we will go through: skin, superficial fascia (above the umbilicus 1 layer, below the umbilicus 2 layers), transversalis fascia,..Etc

-the diaphragm has two parts, right cupula above the liver and left cupula above the stomach and spleen

-the diaphragm attach to the pericardium of the heart, so that's why when we eat a heavy meal that enlarge the stomach, adding a pressure on the diaphragm that add a pressure on the heart so it will beat faster than usual.

-the diaphragm separates the thoracic cavity from the abdominal cavity.

-the peritoneum is two types: (important)

1- Parietal peritoneum:go on the anterior abdominal wall, cover the pelvis, then posteriorly it goes upward and it will be in front of the aorta, inferior vena cava, duodenum and pancreas. So the ant. surface of duodenum has peritoneum

2-visceral peritoneum: that covers the viscera, (<u>lesser omentum , greater omentum, mesentery, mesocolon, ligaments of the lives</u>)

** this leads to the classification of abdominal organs into two main types

A.intra-peritoneal organs: organs that are completely covered by peritoneum, like: stomach, transverse colon (have mesentery, mobile organs used in surgery).

B.retro-peritoneal: organs that remain in the posterior abdominal wall so that the peritoneum is just anterior to them, like: pancreas, duodenum, aorta, sympathetic chain, inferior vena cava, psoas muscle and ureter.

-greater omentum composed of two layers of peritoneum, lesser omentum hangs down from the liver. Imagine that the two layers of peritoneum that forms the lesser omentum has separated and covered the stomach then these 2 layers meet and form the greater omentum.

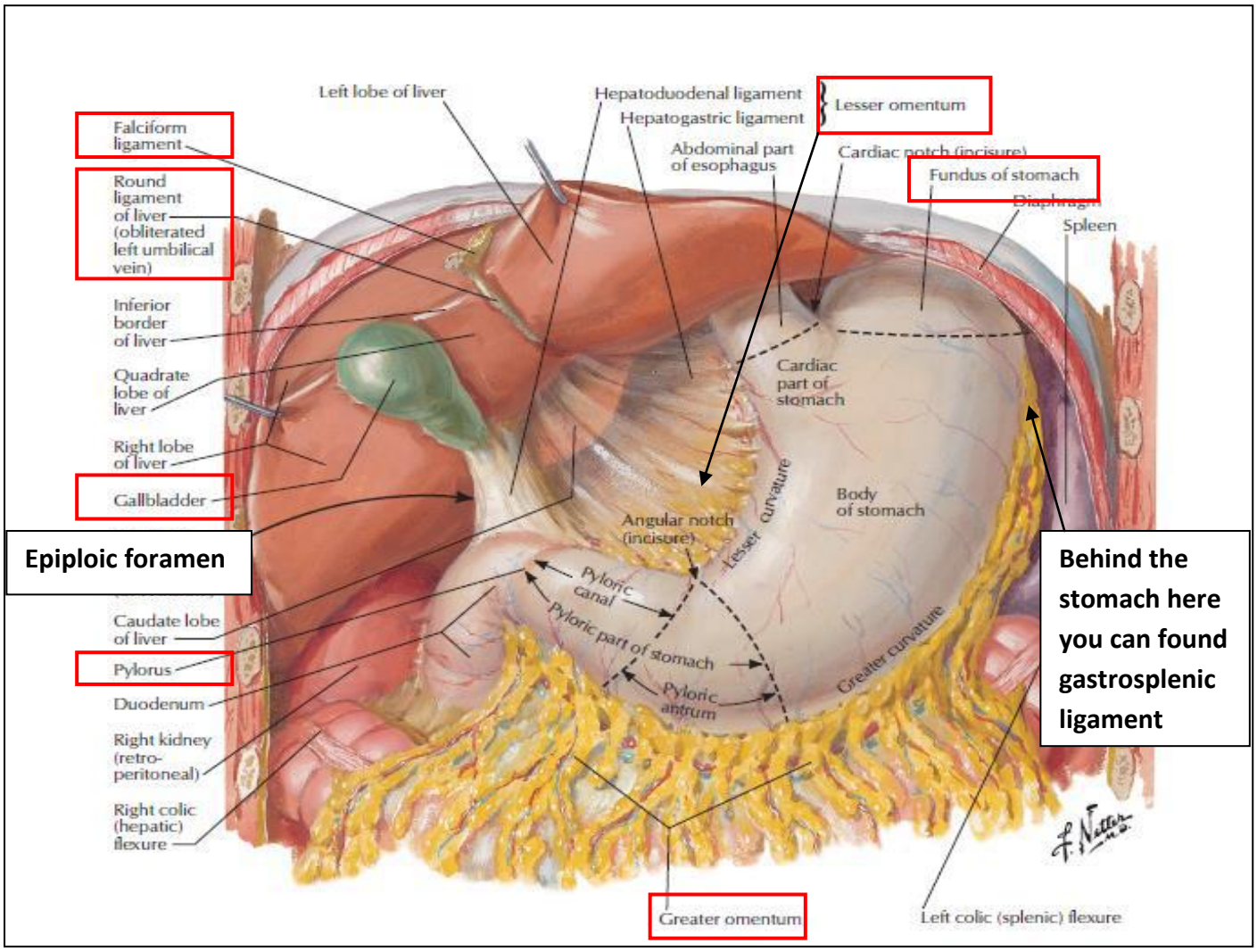
-gastrosplenic ligament connect stomach to the spleen.

-the liver need to remain in its place so it has two ligaments(this ligament is a two-layer peritoneum) :

1-falciform ligament, attach to the diaphragm and anterior abdominal wall it separate the left lobe from the right lobe of the liver.

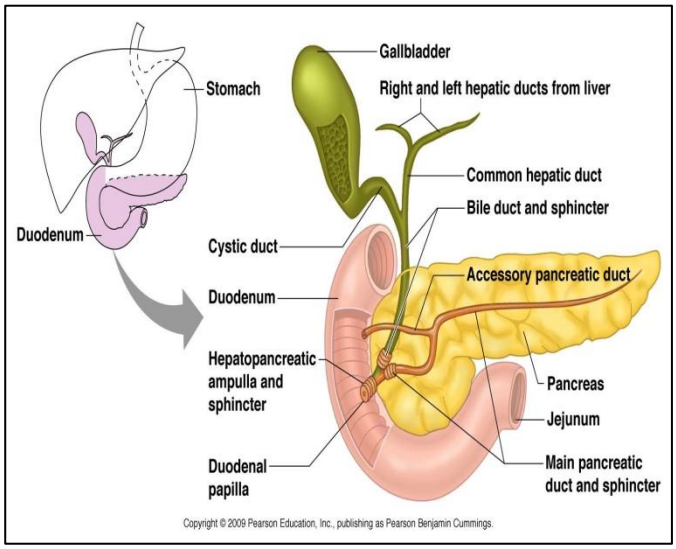
2-ligamentum teres on the free edge, its obliterated umbilical vein, also known as round ligament.

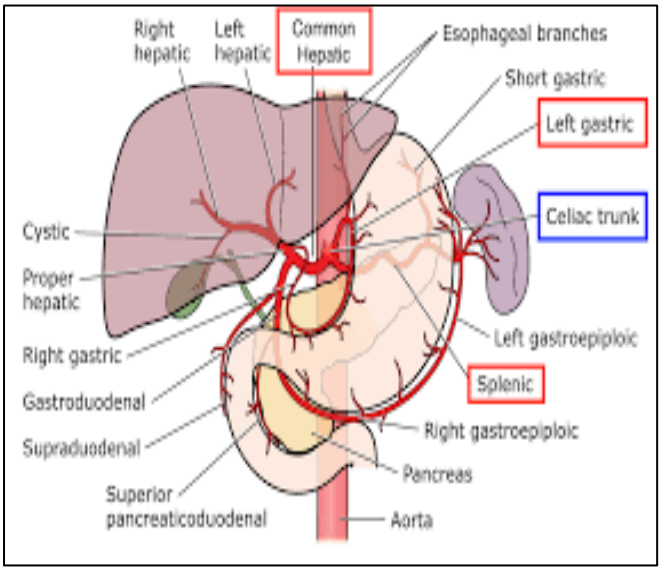
-all of the liver is covered by peritoneum (shiny) except bare area below the diaphragm lie on it 3- coronary ligament on the edges form triangular ligament (will covered in the liver lab).



-portal vein is formed behind the neck of pancreas, from superior mesenteric and splenic veins.

common bile duct pass - posterior to 1st part of duodenum composed of cystic duct and common hepatic, that open in the 2nd part of duodenum (major duodenal papilla)





Celiac trunk that gives three branches:

1- Left gastric to the stomach and esophagus.

2- Tortuous Splenic artery behind the stomach.

3- Hepatic artery, that divides to left and right, that branches to gastroduodenal then it gives right gastro epiploic on the greater curvature.

It's called trunk because it's very short

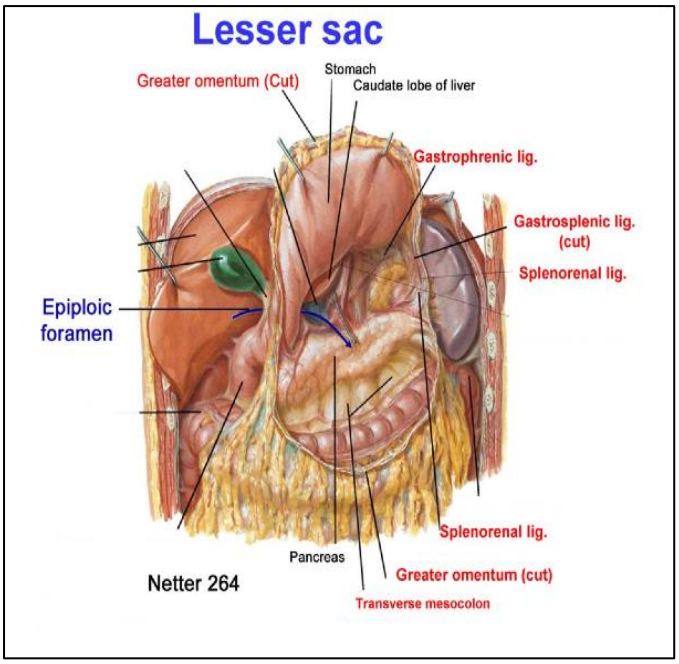
-let's talk about the borders of epiploic foramen that reach the lesser sac behind the lesser omentum and the stomach

Anterior border: common bile duct, portal vein, hepatic artery (these structures found in the free edge of lesser omentum)

Posterior border: inferior vena cava

**greater sac found between the anterior abdominal wall, and the stomach and liver (in front of them)

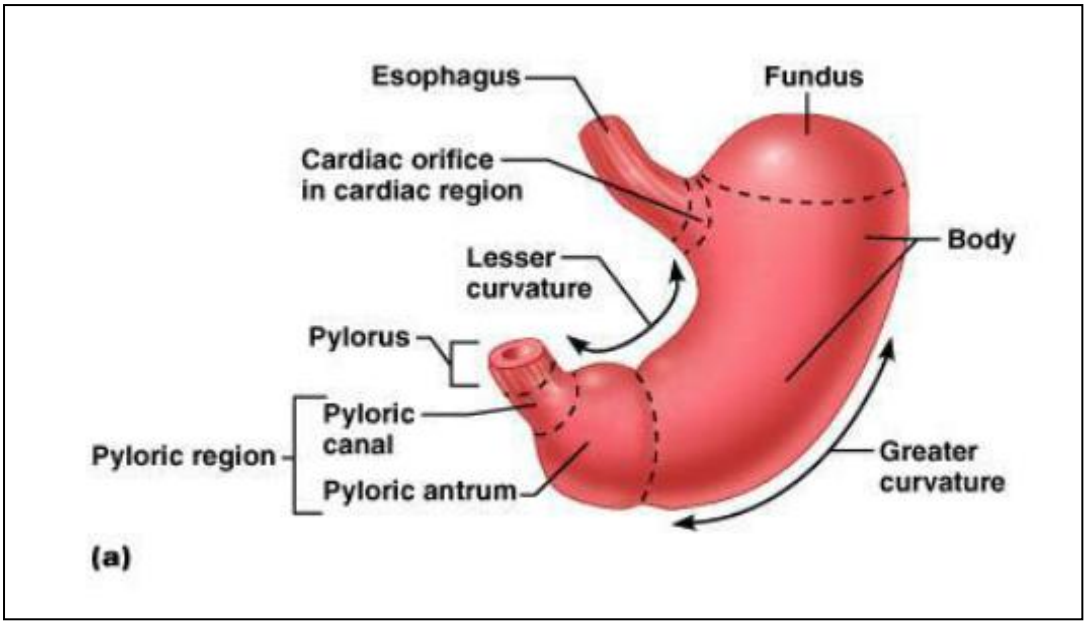
**lesser sac lies behind the lesser omentum and stomach, between four layers of greater omentum (we know that greater omentum goes backward and forward into two layers and attach to the transverse colon, so the transverse colon located behind the stomach may become anterior if the mesentery long)



-the two sacs were developed and formed during the embryonic period, they known to be an easy way for surgeons to reach the organs, also the lesser sac give the stomach the enough space to enlarged.

-epiploic foramen also known as foramen of Winslow.

**the stomach and its parts, you have to memorize its blood supply so refer to the slides:



-be attention to the difference between physiological (no thickening, like the lower esophageal sphincter) and anatomical sphincter (thickening of the muscles, like the pyloric sphincter).

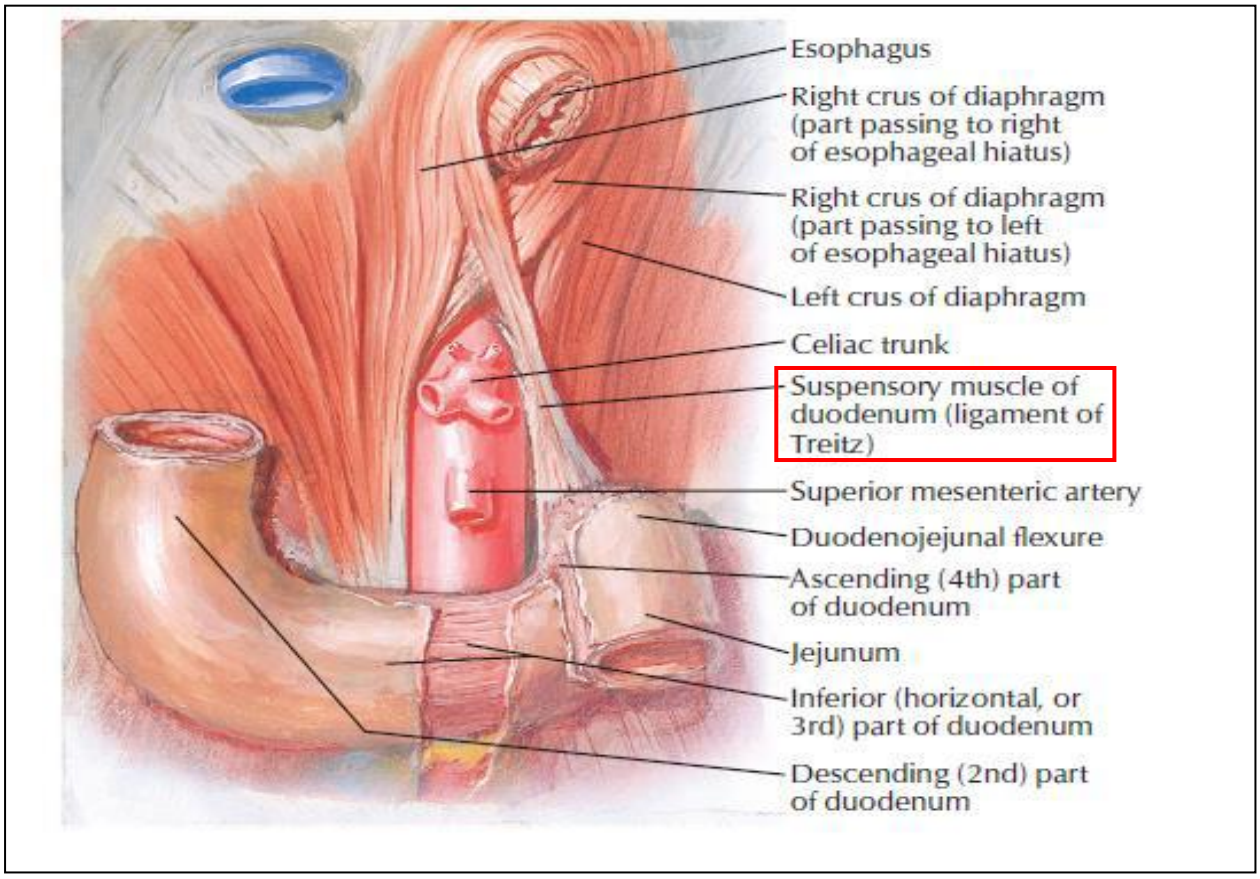
**Lesser omentum: composed of two layers, located on the porta hepatis, its contain between the two layers:

Gastric vessels, fat, lymphatic, branches from the vagi (they locate around the esophagus with two branches (left anterior and right posterior), these two branches reach the lesser curvature of the stomach and they give their small branches to the stomach)

-stomach bed, notice there is structure named spinule which is a small part of the spleen that doesn't attach to it (it tell also that the spleen come from a lobule).

-notice these structures: tinea coli, appendices epiploic with large intestine, sacculation, secum (locate in the right iliac fossa), appendix, and ileum(you have to differentiate between large and small intestine, so refer to the slides).

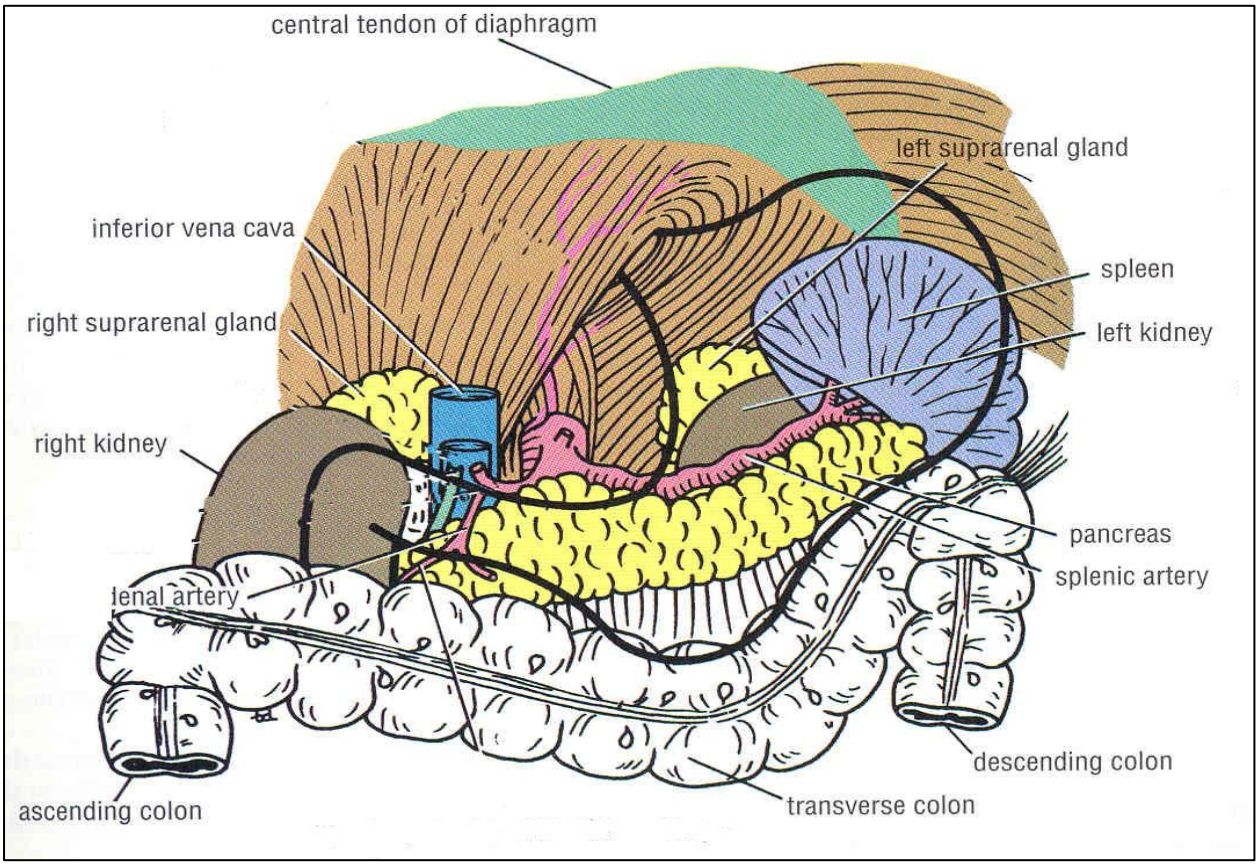
-ligament of Treitz that goes posteriorly to the right crus of diaphragm, also named suspensory muscle of the duodenum.



-so what are the structures found in the stomach bed (posterior relation)

Pancreas, splenic artery from celiac trunk on the upper border, left and right crus of the diaphragm, left kidney and left suprarenal gland.

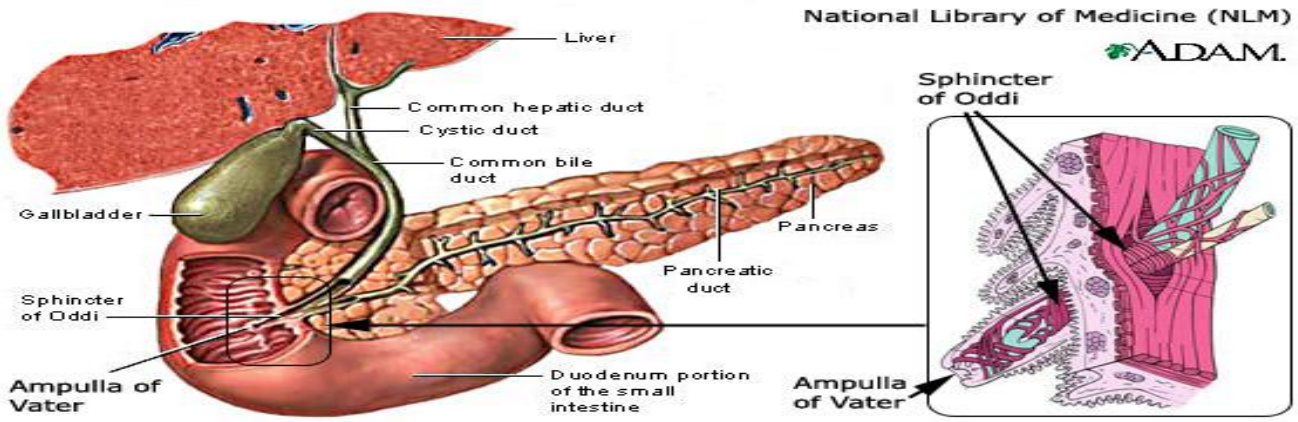
-notice the vein (splenic vein) is behind the pancreas not the stomach.



-lets talk about the duodenum, its C shaped , where the head of pancreas is in the concavity .

-The uncinate process of the pancreas, in front of it you find superior messenteric vessels

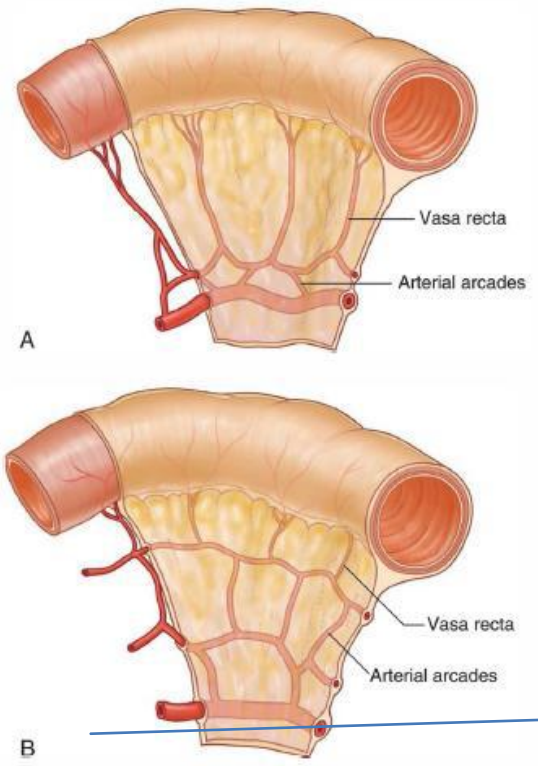
-major duodenal pappilla and minor duodenal pappilla that 1 inch above it, you will see sphincter of odde, Ampulla of Vater that is located in the major pappilla which is the pulge of the common bile duct.



-posterior to the duodenum: aorta, inferior vena cava, portal vein, lymph nodes, ureter and kidney behind the second part of duodenum, all of these structures are retro peritonum.

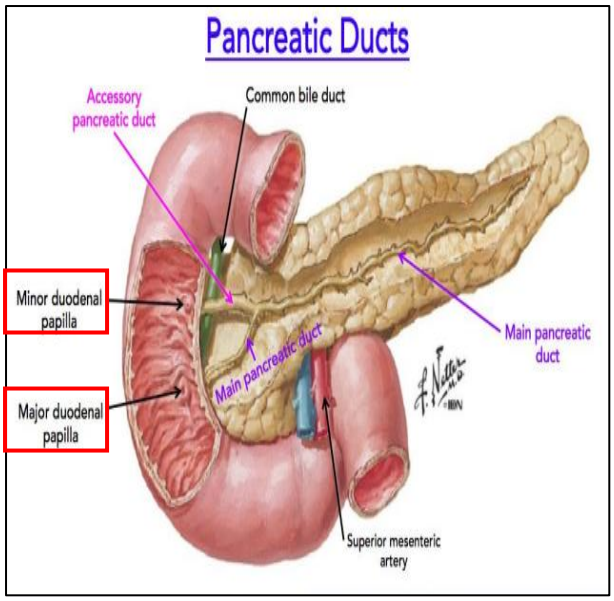
You have to know the differences between the jejunum and ileum.
Arcades
Vasa recta
Fat

-Please refer to Netter atlas page 272.



314 Fig. 4.66 Differences in the arterial supply to the small intestine. A. Jejunum. B. Ileum.

This is the superior mesenteric artery and vein (not shown) in the root of mesentery



Please refer to the slides since they are the main source and look at the pictures they contain

You can go to Netter Atlas I found it very helpful

-	- Jejunum	- Ileum
- Length	- Proximal 2/5	- Distal 3/5
- Site	- In the upper part of the peritoneal cavity below the left side of the transverse mesocolon	- In the lower part of the abdominal cavity + the pelvic cavity
- Wall	- Thicker and more reddish	- Thinner and less reddish
- Arcades in the mesentery (Arcades are connections between the branches of the superior mesenteric artery). See figure 23 -	- Simple, one or two arcades with long infrequent branches. - long vasa recta	- Numerous - short terminal vessels arising from 3-4 or more arcades - short vasa recta
- Fat	- Small amount (mainly around the root the mesentery)	- Larger amount (present throughout the mesentery)
- Diameter	- Wider	- Smaller
- Villi	- Numerous	- Less
- Plicae circulares	- Larger and more numerous	- Smaller and less numerous (widely separated).
- Lymphatic follicles	- No or few	- Peyer's patches (aggregations of lymphoid tissue