

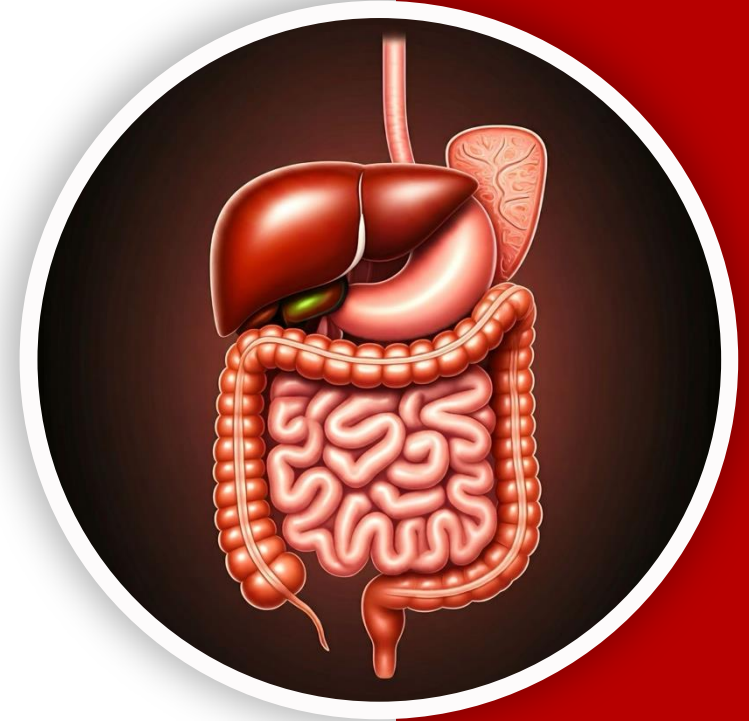
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جراح

GIS Anatomy | MID

# The Peritoneum



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Layan Bassam

# Important

*Nabd ladies and gentlemen, hope this file finds you well,  
in this file we focused on what is really important and valuable for both exam purposes and our level of  
knowledge, executing any junky info mentioned here and there.*

*Also, we replaced the majority of illustrations in the original files by more clear and illustrative figures that  
blend with the words, as the original ones are a little bit hard to be understood.*

*Wish you all the best, please be generous with your prayers and wishes for us.*

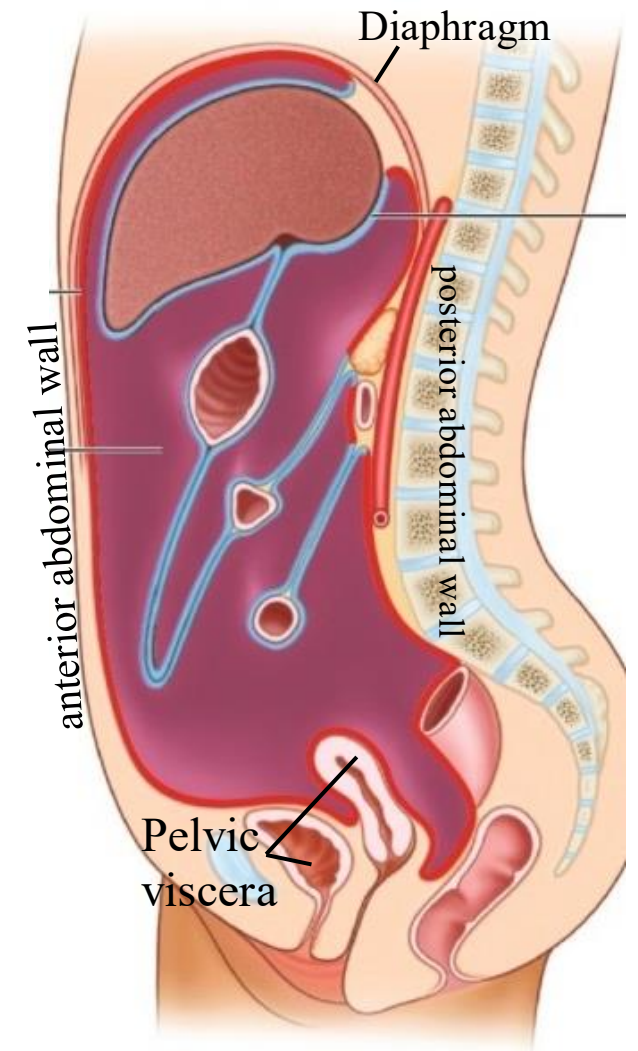
*NST*

# **L(3) - The Peritoneum**

*The doctor repeated several points in different sections, but I have organized and placed them appropriately under their relevant headings.*

# 1- The Peritoneum

- The Peritoneum is a thin serous membrane.
- **Consists of:**
  - 1. Parietal Peritoneum**
    - Lines the surface of the abdominal wall.
    - It descends from the **diaphragm**, passes deep to the **anterior abdominal wall**, continues above the **pelvic viscera**, then it reflects and ascends along **the posterior abdominal wall**, returning back toward the diaphragm.
    - Thus, the parietal peritoneum covers both the anterior and posterior abdominal walls, effectively bounding them.
  - 2. Visceral Peritoneum**
    - Covers the surfaces of abdominal organs (viscera).
    - It wraps around organs such as the stomach, jejunum, ileum, large intestine, greater part of the liver, etc.
  - 3. Peritoneal Cavity**
    - A potential space located between the parietal and visceral peritoneum.



- **Parietal Peritoneum**
- **Visceral Peritoneum**
- **Peritoneal Cavity**

# 1- The Peritoneum

## Balloon–Fist Analogy for the Peritoneum:

Didn't get it? Think of it as:

Balloon = Peritoneal sac

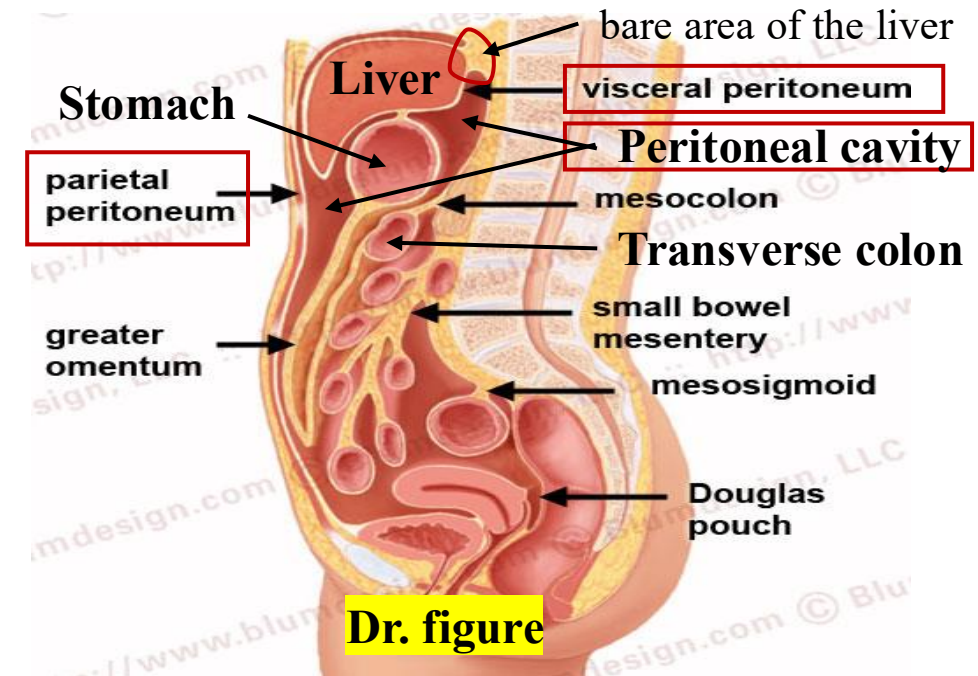
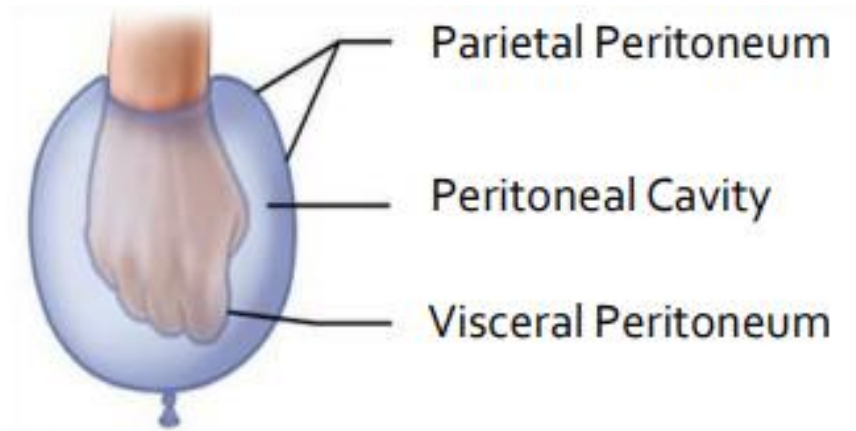
Fist = Abdominal organ

- **Visceral peritoneum** = Inner Layer touching the fist
- **Parietal peritoneum** = Outer lining of the balloon
- **Peritoneal cavity** = Space between the two layers

Notice: The **visceral peritoneum** covers the outer surface of abdominal organs, but not all are covered to the same extent.

*To be explained” — Just observe the figure for now.*

- **Completely** covered by visceral peritoneum.  
Examples: Stomach, jejunum, ileum, etc..
- **Mostly** covered, with uncovered areas.  
Example: Liver – Most of its surface is covered, except for the bare area, which is in direct contact with the diaphragm and not covered by peritoneum.



# 1- The Peritoneum

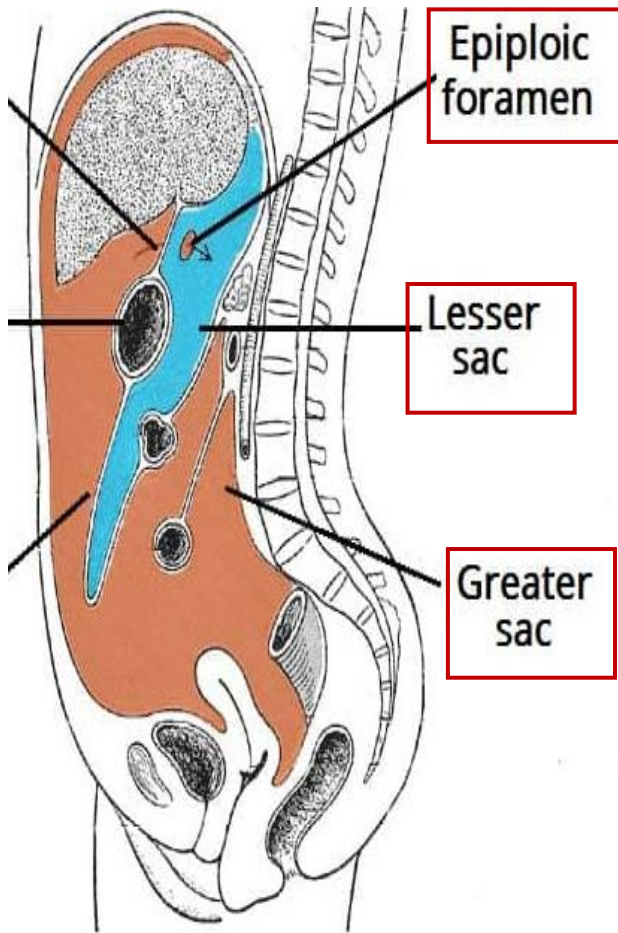
## Functions of the Peritoneum

- **Lubrication:** It secretes a serous fluid that lubricates the space between the visceral and parietal peritoneum, *allowing smooth movement of the abdominal organs.*
- **Fat Storage:** The peritoneum, especially the greater and lesser omentum and peritoneal ligaments and mesentery, contains a high amount of fat. This fat acts as an energy reserve.
- **Defense Role:** The peritoneum contains lymphatic vessels, lymph nodes, lymphocytes, and other immune cells, playing a key role in immune defense within the abdominal cavity.
- **Support of Abdominal Viscera:** Peritoneal folds (e.g., ligaments) help support specific organs—for example, ligaments of the stomach help in maintaining its position.

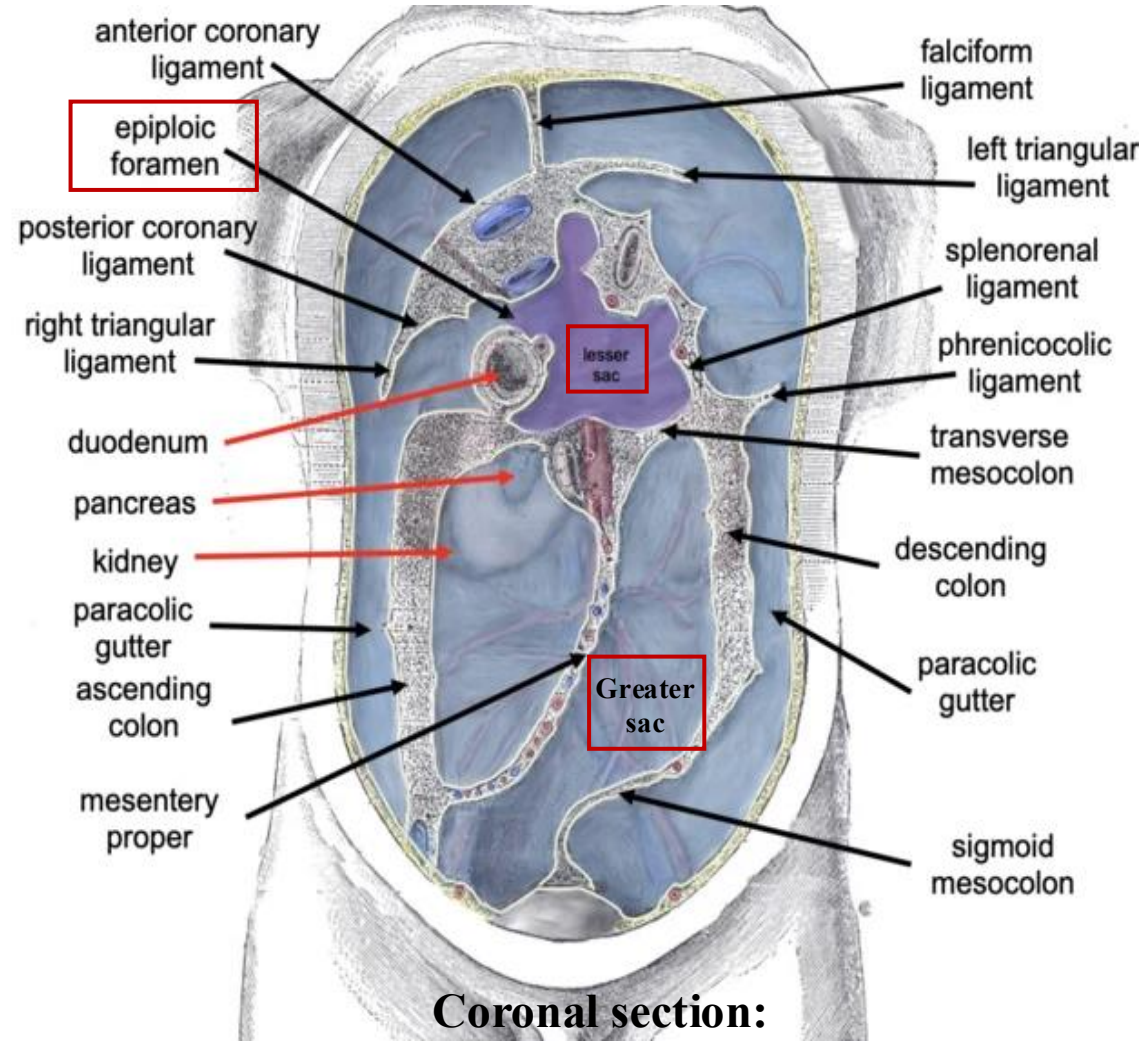
*A lot of keywords will be explained within the next slides; you can skip this for now if it seems unclear.*

# 2- The Peritoneal Cavity

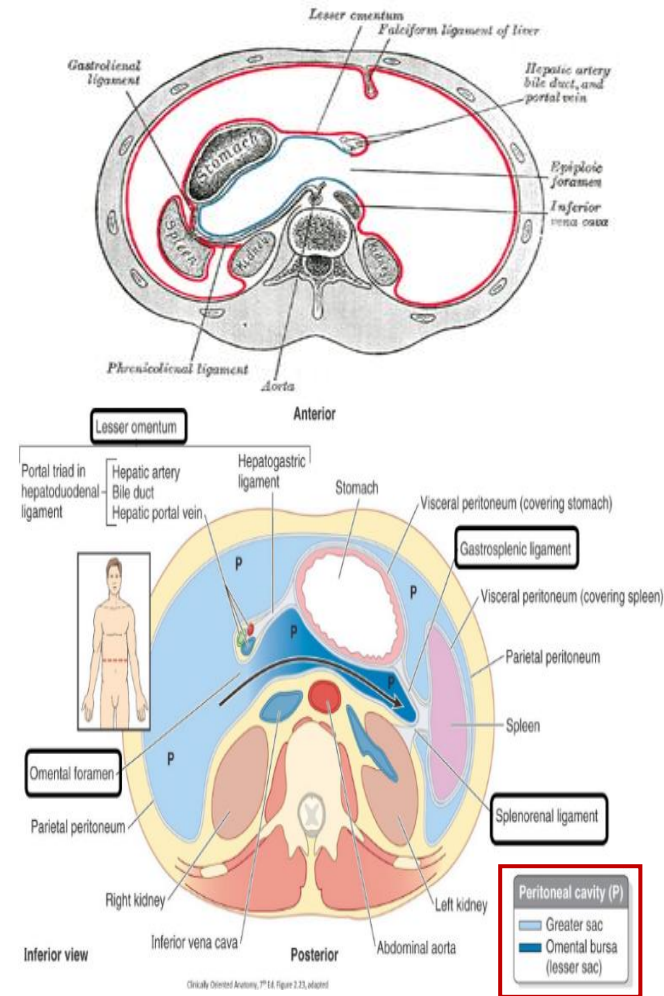
- The **peritoneal cavity** is divided into **greater sac** and **lesser sac** which communicate through the **epiploic foramen**.



Sagittal section:



Coronal section:



Transverse section:

## 2- The Peritoneal Cavity

*Closed in males and open in females, why open in females ? Because of the fallopian tubes that connect to the ovaries*

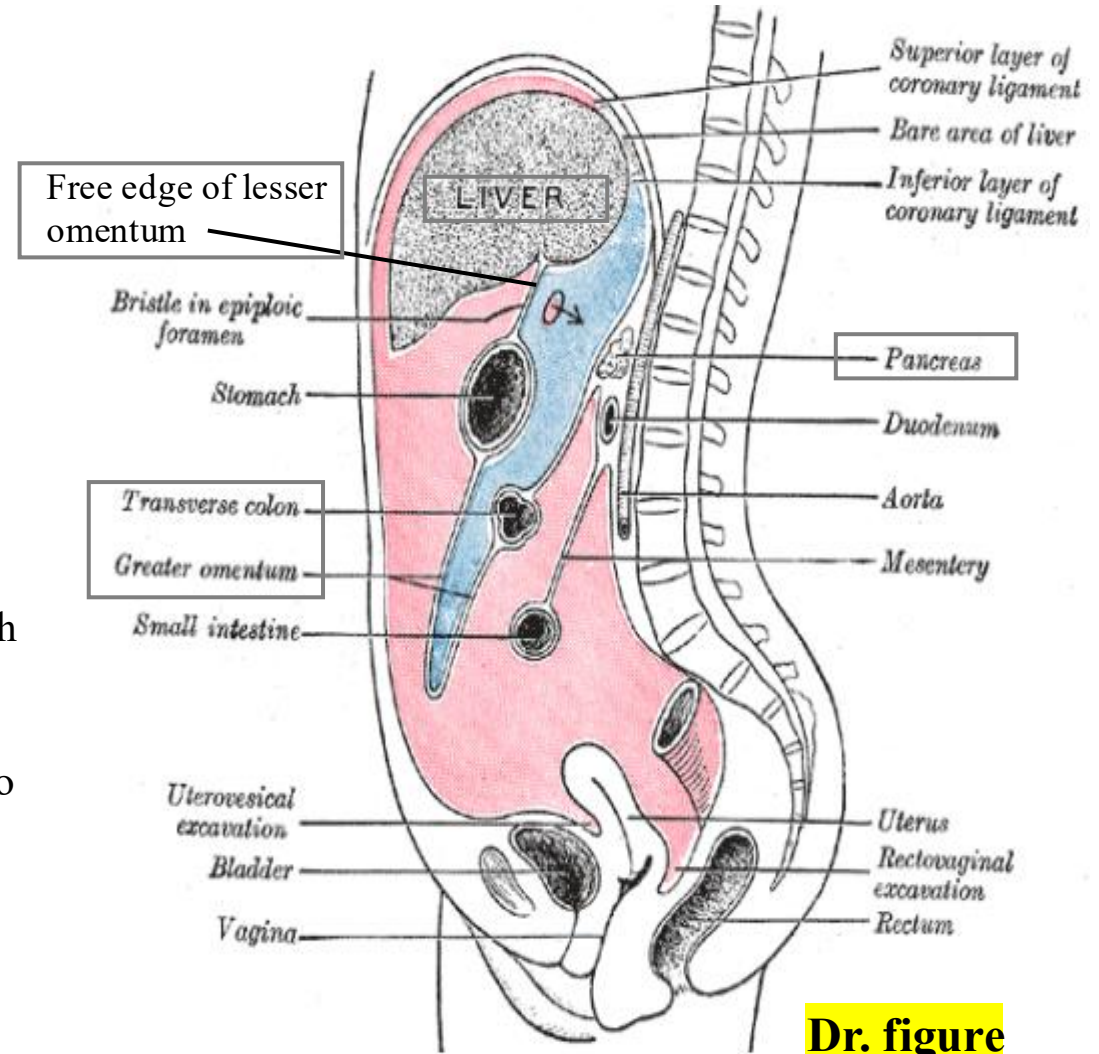
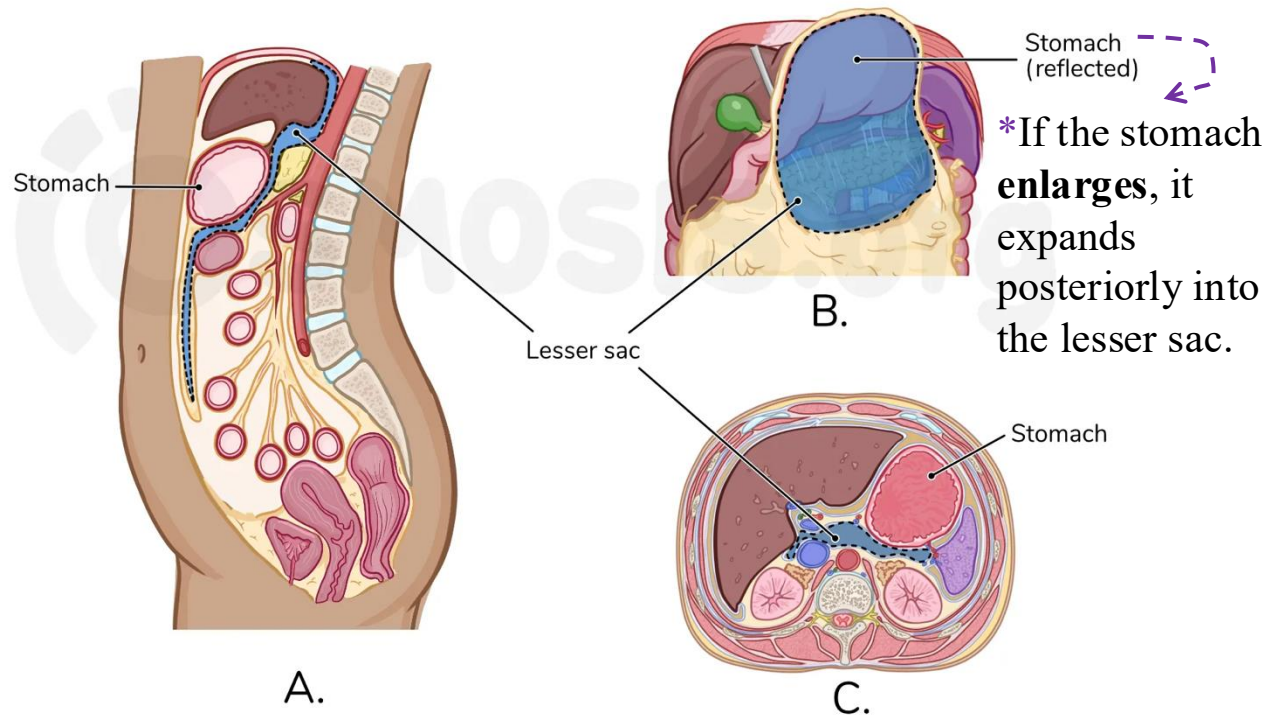
*If we go back , fallopian tubes end in the uterus, and the uterus opens onto the vagina, and the vagina opens to the outside. So, in the female opened by the uterus , fallopian tube and the vagina.*

*While in males as they have nothing, it's a closed sac.*

# 3- The Lesser sac

## 1. Lesser Sac (Omental Bursa)

- Lies posterior to the \*stomach, liver & free edge of lesser omentum.
- It is between the two layers of the greater omentum surrounding the transverse colon.
- Located in front of the pancreas, and duodenum.

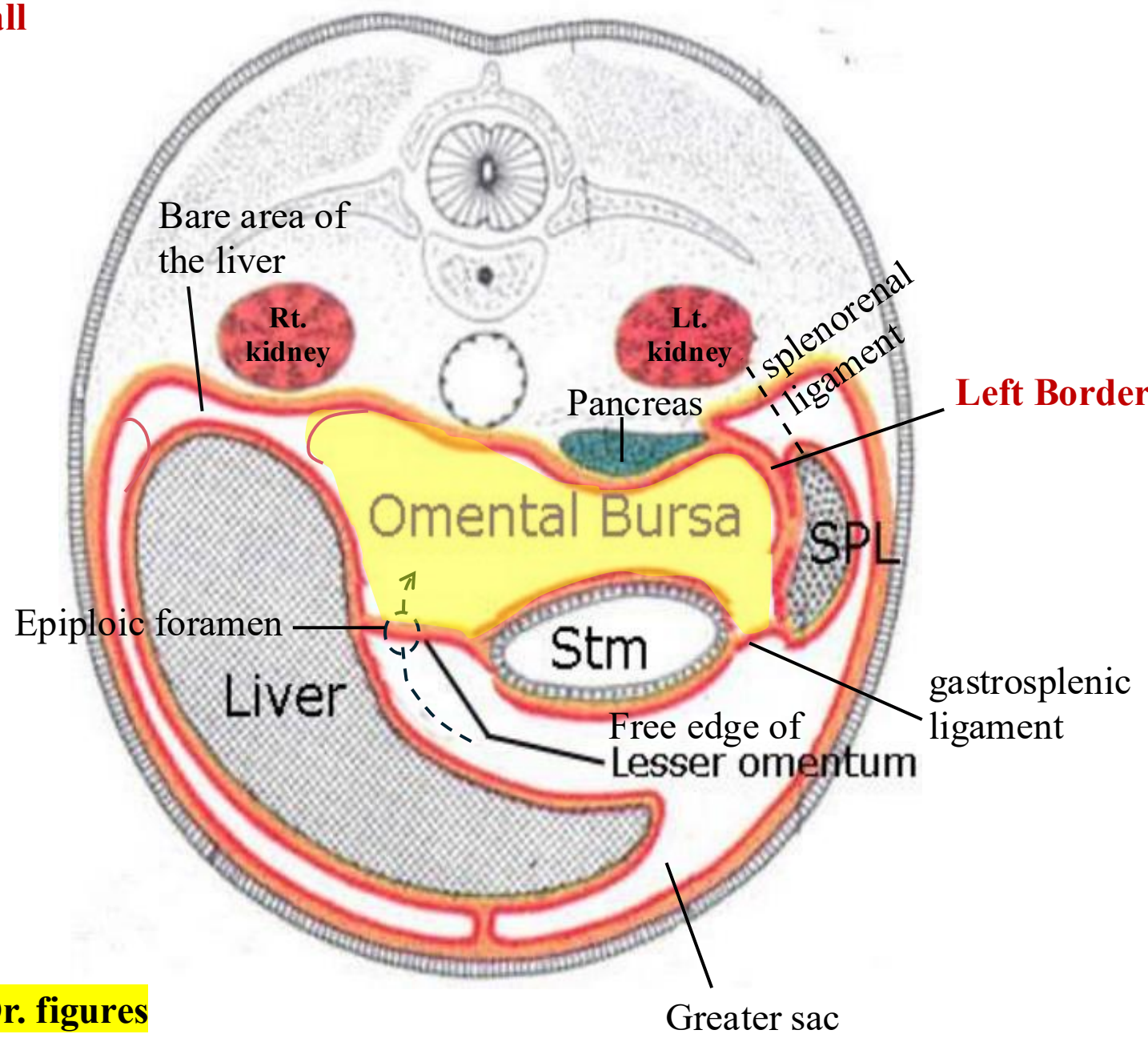
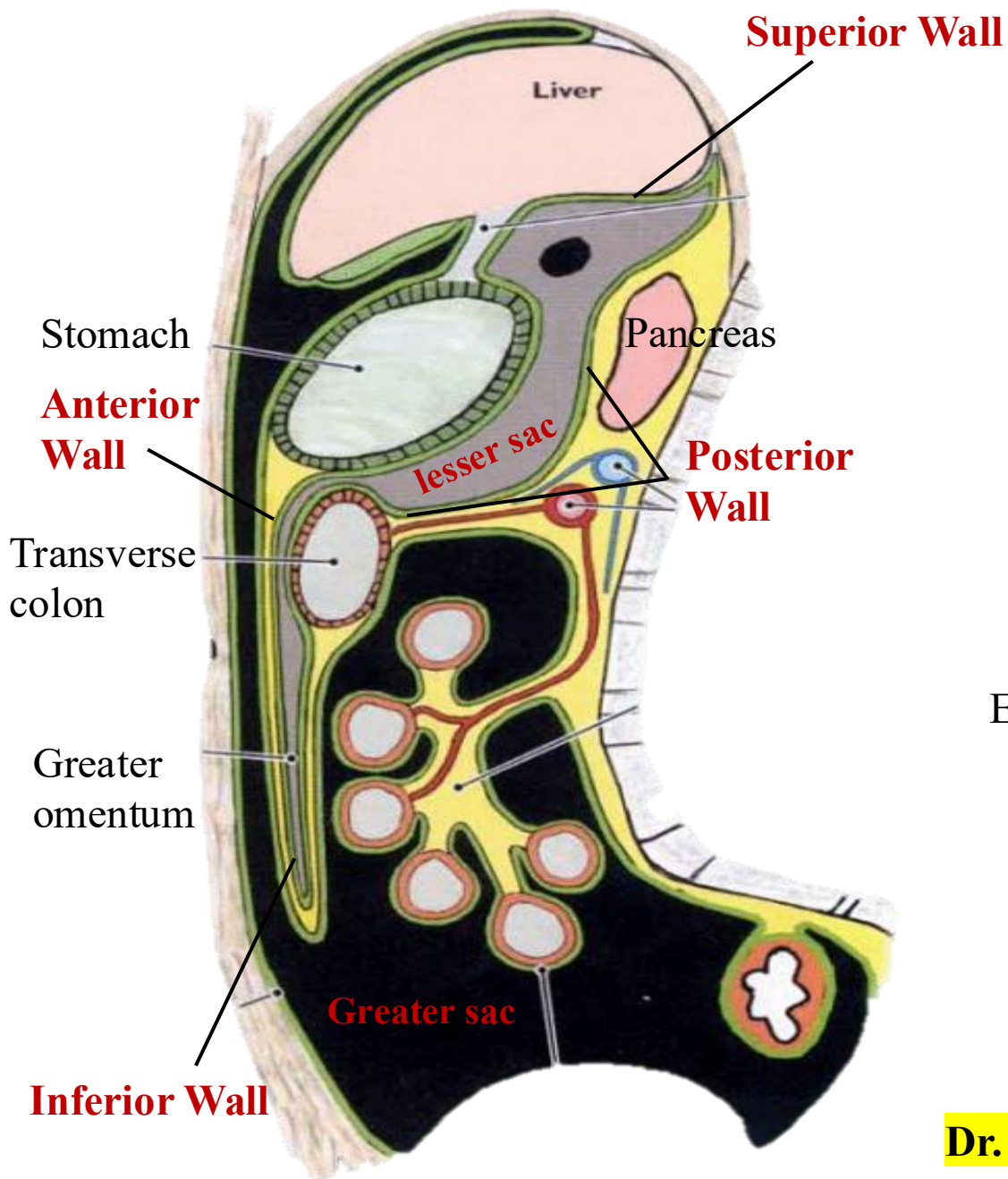


**Dr. figure**

- **Greater sac** Together form peritoneum cavity
- **Lesser sac**

### 3- The lesser sac

Wall	Structure
<b>Superior Wall</b>	Formed by the peritoneum covering the caudate lobe of <b>liver</b> and the <b>diaphragm</b> .
<b>Anterior Wall</b>	Formed by the posterior surface of the <b>stomach</b> , <b>free edge of lesser omentum</b> , and the <b>anterior two layers of the greater omentum</b> .
<b>Inferior Wall</b>	Formed where the anterior and posterior layers of the greater omentum meet.
<b>Posterior Wall</b>	The posterior two layers of the greater omentum ascend and fuse with the anterior surface of the transverse colon and its mesocolon, ultimately reaching and attaching to the anterior border of the pancreas.
<b>Left Border</b>	Formed by the hilum of the <b>spleen</b> , gastrosplenic ligament, and splenorenal ligament (lienorenal ligament) .
<b>Right Border</b>	Epiploic foramen.

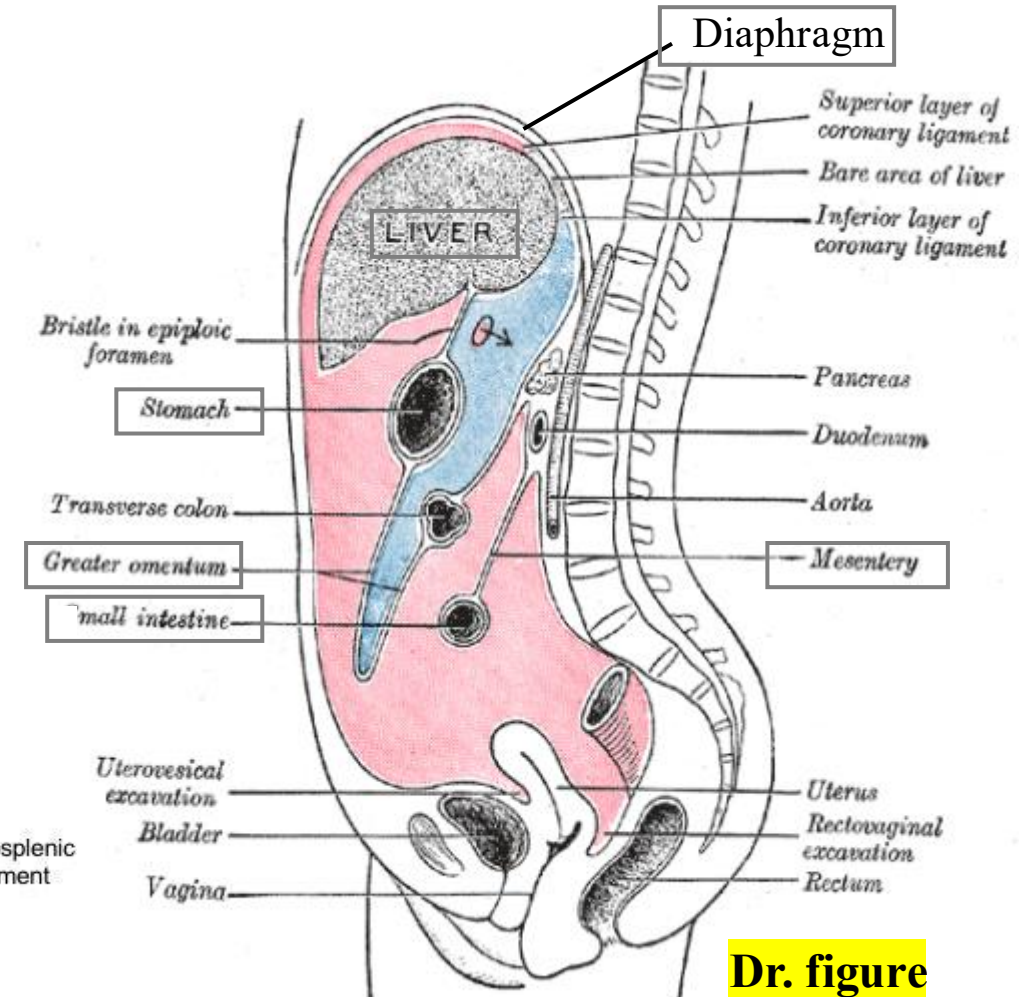
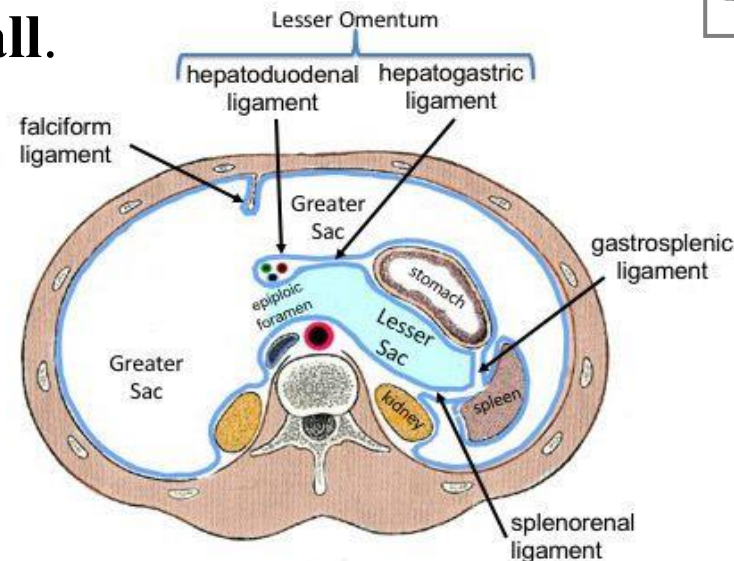


**Dr. figures**

# 4- The greater sac

## 2. Greater sac

- The **larger portion** of the peritoneal cavity.
- Lies **deep to the anterior abdominal wall** and **below the diaphragm**.
- Located **anterior to the liver, stomach, greater omentum, mesentery, and small intestines**.
- Extends **above the pelvic viscera** (e.g., urinary bladder, uterus, rectum), until it reaches the **posterior abdominal wall**.



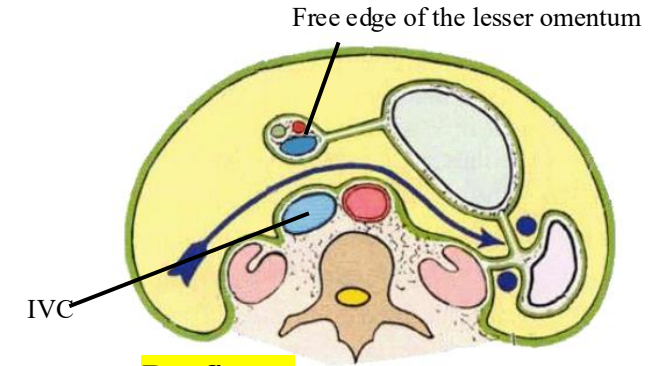
Dr. figure

- Greater sac
- Lesser sac

# 5- Epiploic (omental) foramen (foramen of Winslow)

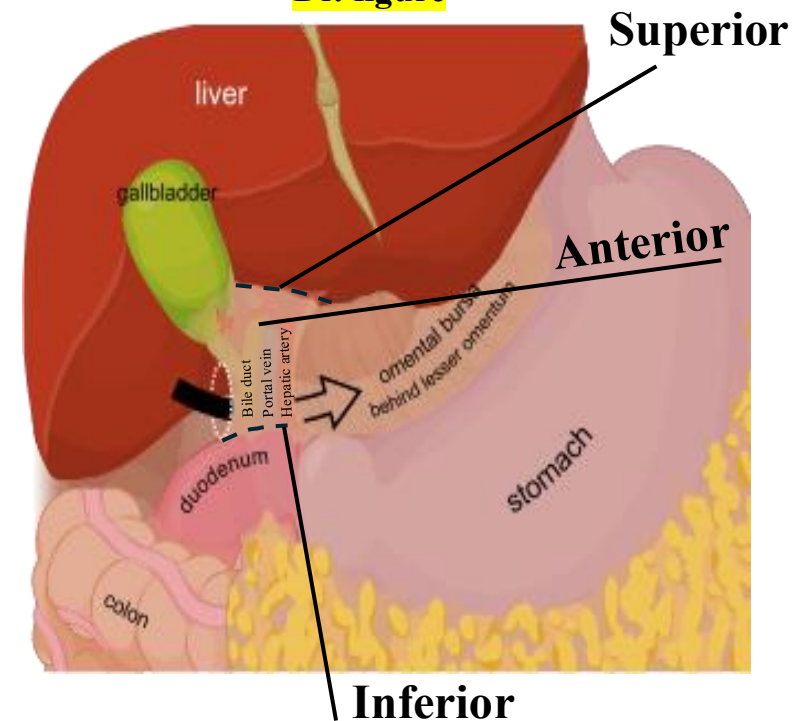
## 3. Epiploic (omental) foramen

- Is a narrow opening that connects the **greater sac** and **lesser sac**.
- Any 😊 **surgery** posterior to the stomach may require access through this foramen, which is why its boundaries are crucial to know.



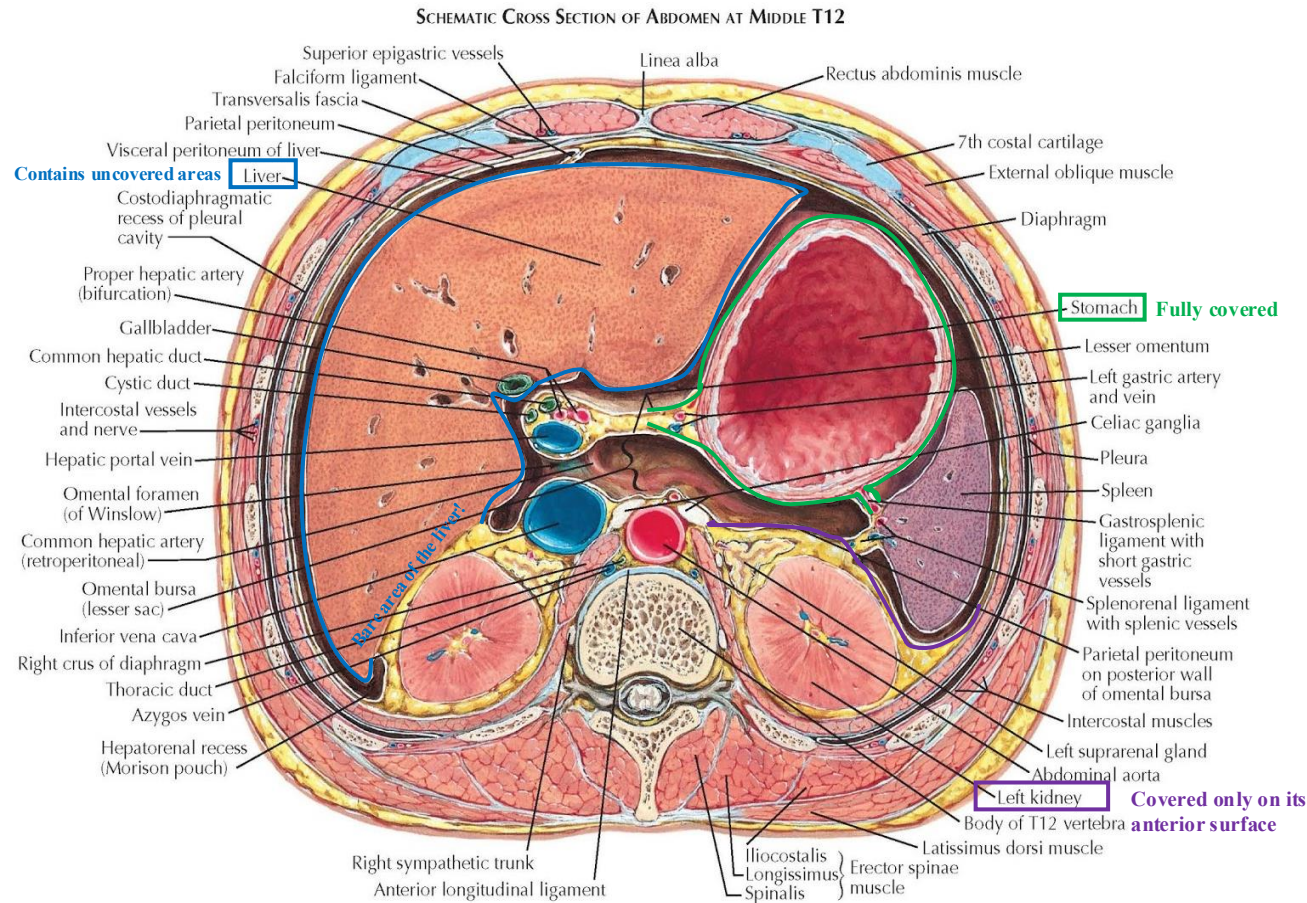
Dr. figure

Boundary	Structure
Anterior	<b>Free edge of the lesser omentum</b> containing: 1) <b>Bile duct</b> – <i>right and anterior</i> 2) <b>Hepatic artery</b> – <i>left and anterior</i> 3) <b>Portal vein</b> – <i>posterior</i>
Posterior	<b>Inferior vena cava (IVC)</b>
Superior	<b>Caudate process of the caudate lobe of the liver</b>
Inferior	<b>First part of the duodenum</b>

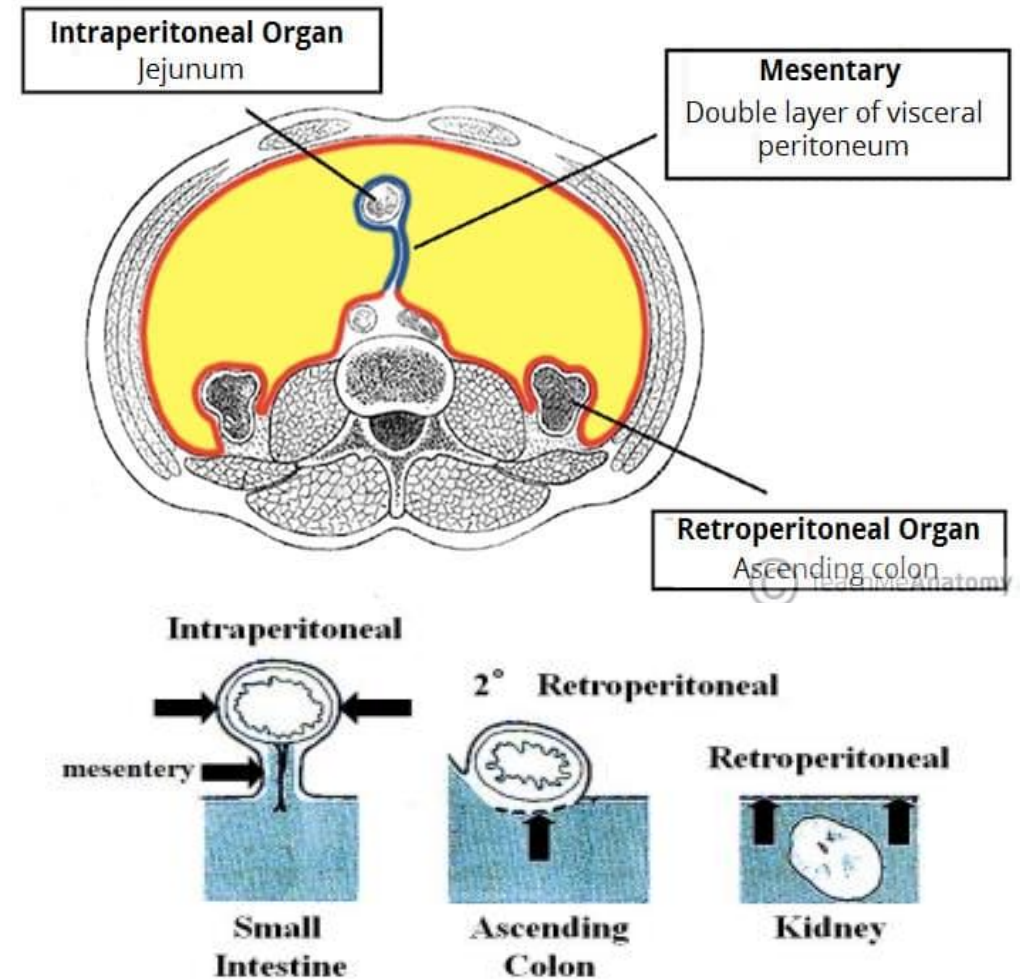


# 6- Peritoneal Coverage

- Abdominal viscera are classified into **\*intraperitoneal**, **\*retroperitoneal**, and **\*interperitoneal** organs based on the **extent** and nature of their coverage by the peritoneum.



*The following is provided as an example only*



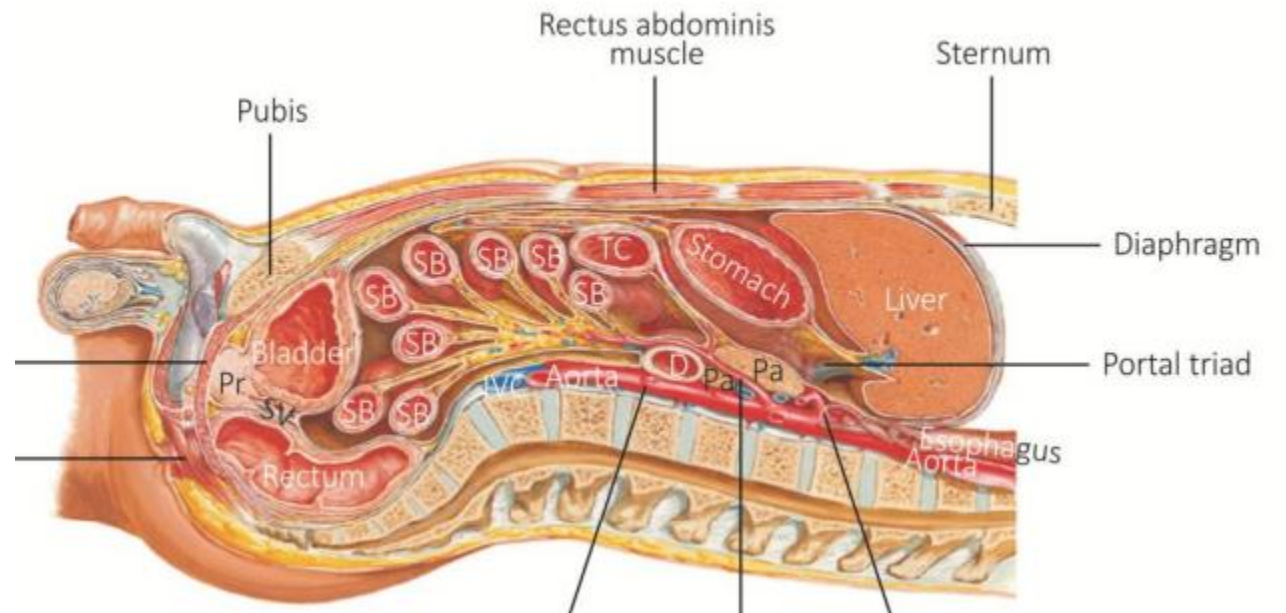
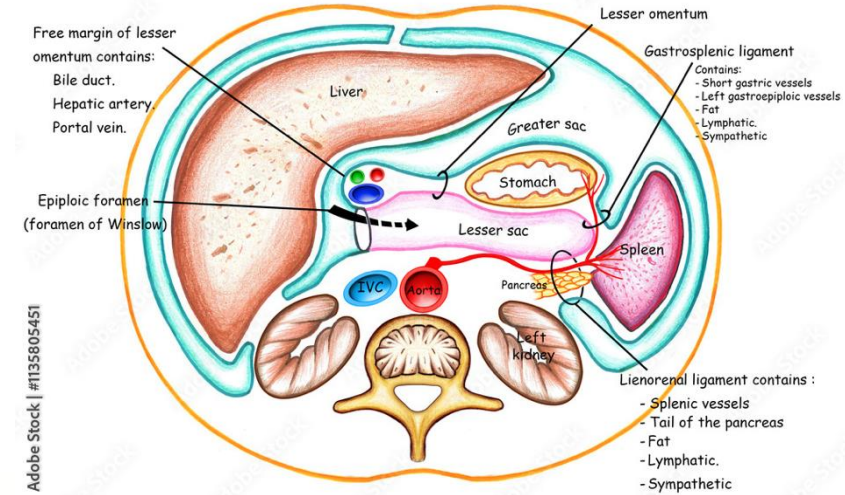
# 7- Intraperitoneal Organs

## 1. Intraperitoneal Organs

These organs are **completely** enclosed by peritoneum and are typically **suspended** within the peritoneal cavity by a “peritoneal folds” – SLIDE 17.

### Examples include:

1. Stomach
2. First and last inch of the duodenum
3. Jejunum and ileum
4. Cecum and appendix
5. Transverse colon and sigmoid colon
6. Spleen
7. Ovaries



# 8- Retroperitoneal Organs

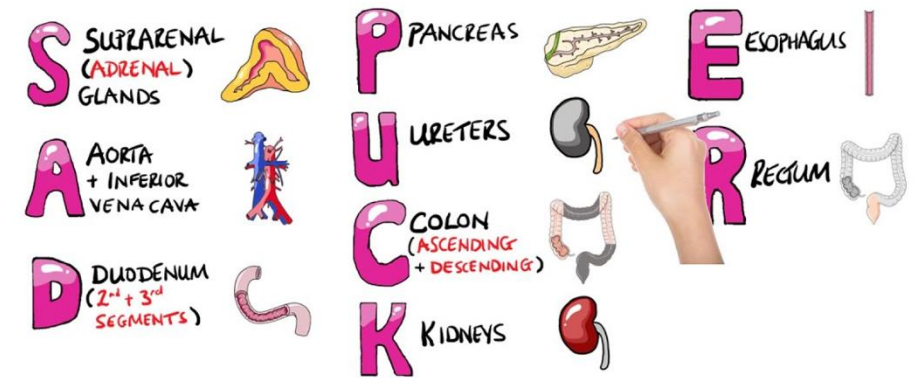
## 2. Retroperitoneal Organs

These organs are positioned posterior to the peritoneal cavity and are covered by peritoneum only on their anterior surfaces.

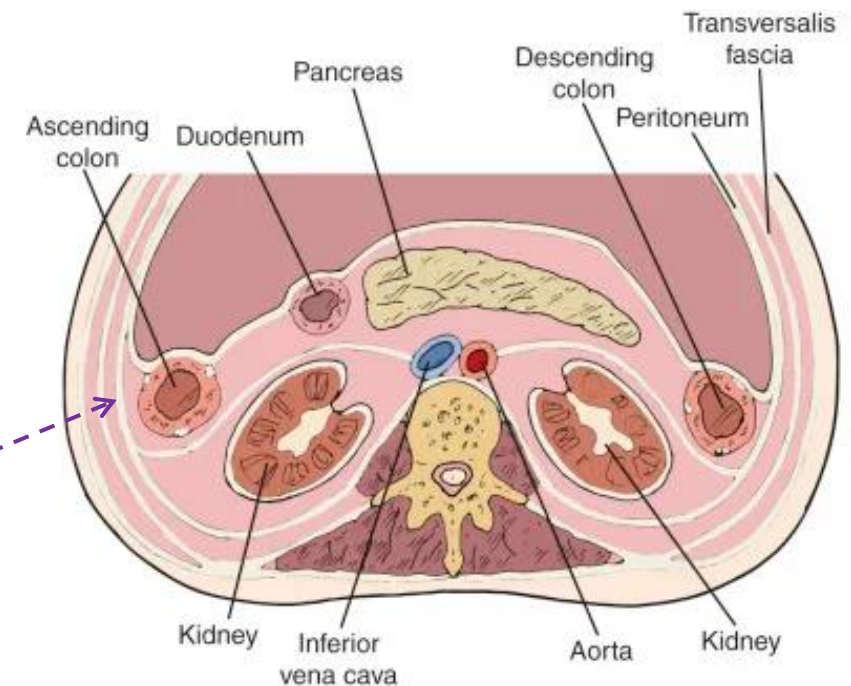
### Examples include:

1. Duodenum (except for the first and last inch)
2. Pancreas
3. Kidneys
4. Suprarenal glands
5. Ureters
6. Abdominal aorta and inferior vena cava
7. Ascending and descending colon\*
8. Upper third of the rectum

Some organs are **fixed** to the posterior abdominal wall; peritoneum covers anterior, medial & lateral sides.  
Examples: Ascending and descending colon,



Common mnemonic: SAD PUCKER



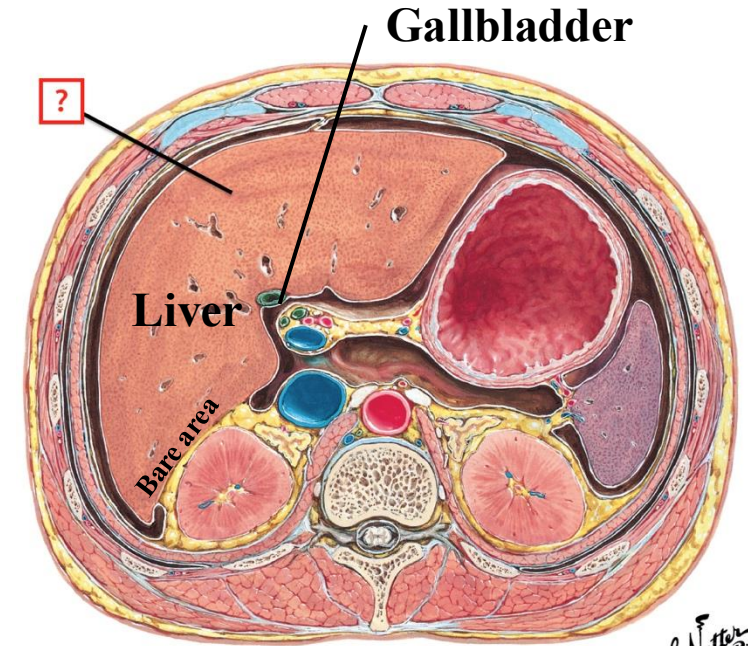
# 9- Interperitoneal Organs

## 3. Interperitoneal Organs (Organs with Bare Areas)

These organs are partially covered by peritoneum, with portions known as bare areas not lined by peritoneum.

### Examples include:

1. Liver (bare area in contact with diaphragm)
2. Gallbladder part of it lies on the liver not covered by peritoneum and the anterior part covered by peritoneum
3. Urinary bladder
4. Uterus



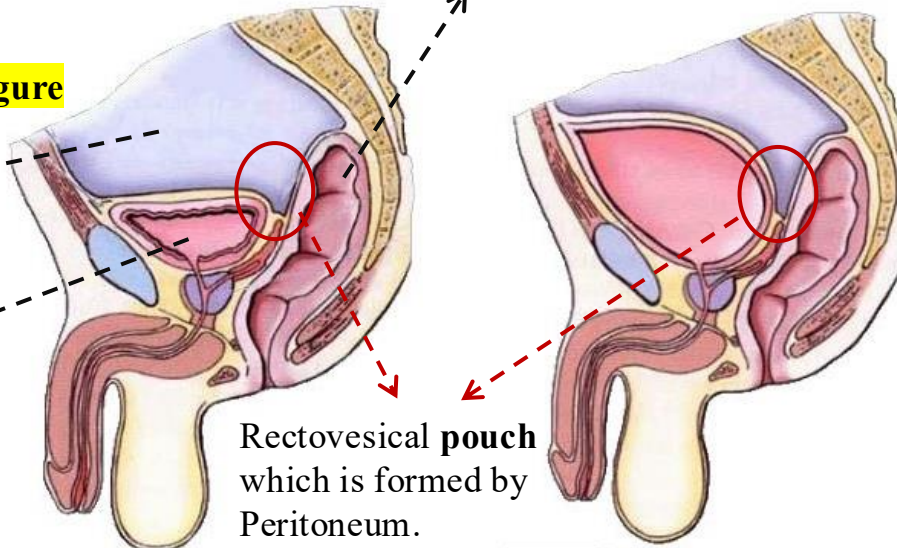
*F. Netter M.D.*

**Rectum** (upper third is covered by peritoneum)

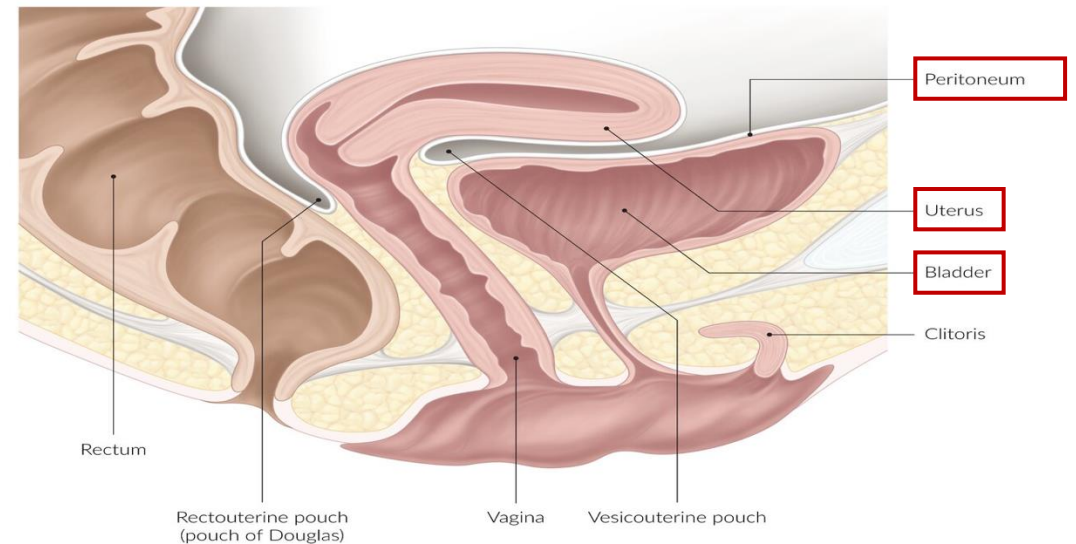
**Dr. figure**

**peritoneum**

**Urinary bladder**  
(upper surface is covered by peritoneum)



**Rectovesical pouch**  
which is formed by Peritoneum.



# 10- Peritoneal folds/reflections

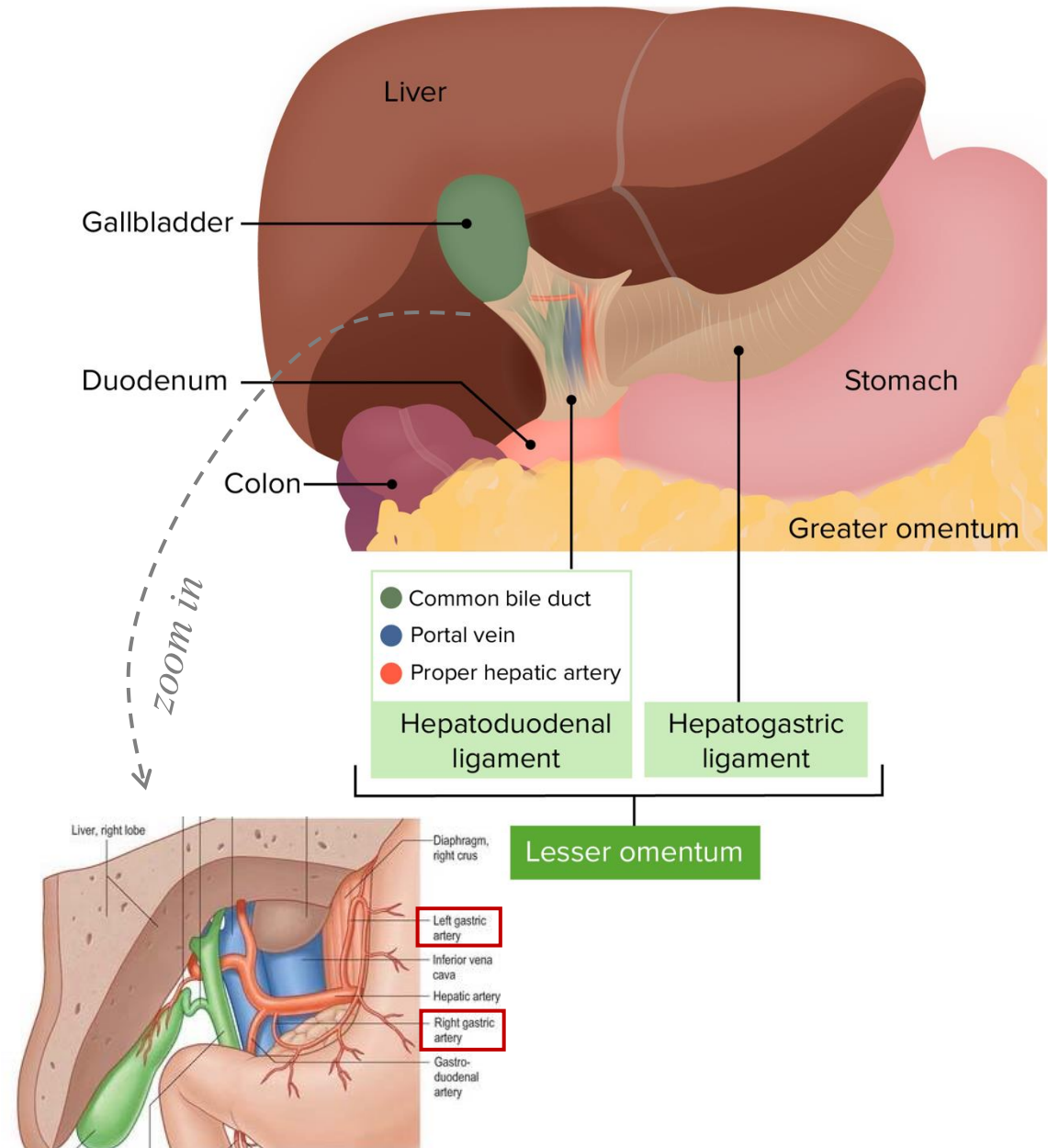
- A **transition** from Parietal peritoneum into Visceral peritoneum, or from retroperitoneal organ into intraperitoneal organ forms a **peritoneal fold**.
- Peritoneal folds are double layers of **peritoneum** that **suspend intraperitoneal organs** from the posterior abdominal wall.
- They **support** intraperitoneal organs in place, provide **passage** for blood vessels, lymphatics, fat, and nerves to the organs.
- Though structurally and functionally similar, these folds are **named differently** depending on the organs they connect. As follows;

Type	Associated Organs
1. <b>Omenta</b>	Stomach → (Greater and Lesser Omentum)
2. <b>Mesenteries</b>	Small intestine (jejunum & ileum), transverse colon, sigmoid colon , appendix
3. <b>Ligaments</b>	Liver, spleen, stomach.

# 11- Omentum

## 1. Lesser Omentum

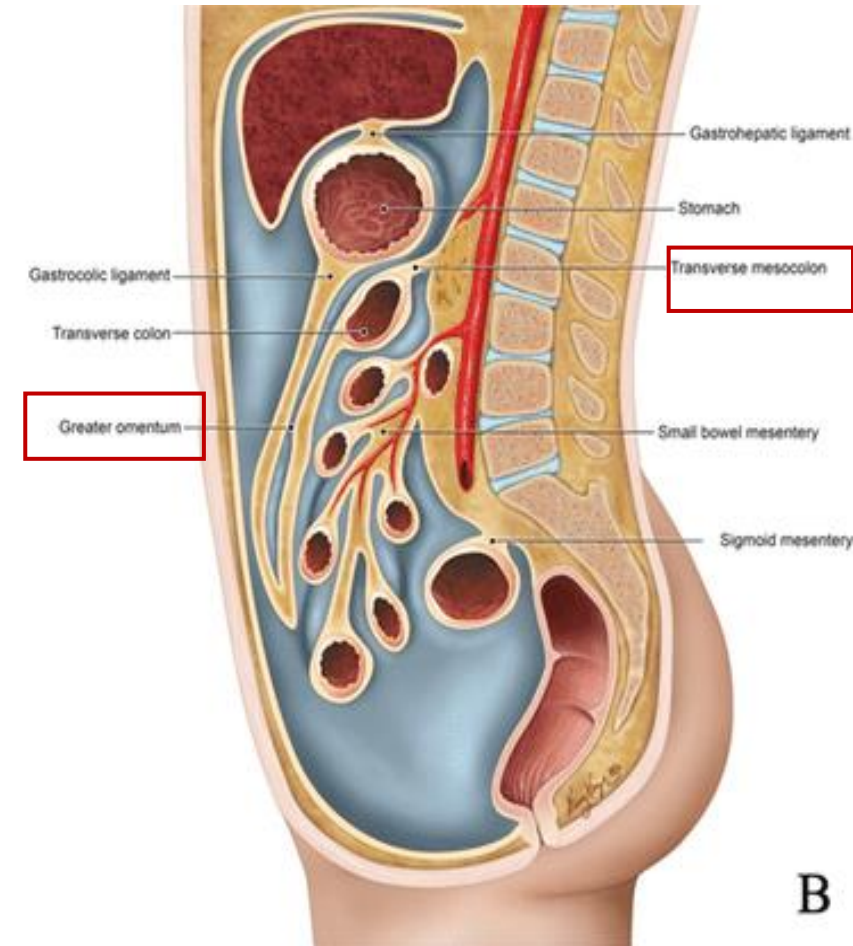
- **Location:** Between the lesser curvature of the stomach and superior part of duodenum, and the liver (from porta hepatis to fissure of ligamentum venosum).
- **Divisions:**
  - Hepatoduodenal ligament (free edge)
  - Hepatogastric ligament
- **Contents:**
  - Left and right gastric arteries and veins
  - Fat and lymph nodes
  - Sympathetic and parasympathetic nerves
  - Free edge contains the common bile duct, hepatic artery, and portal vein.

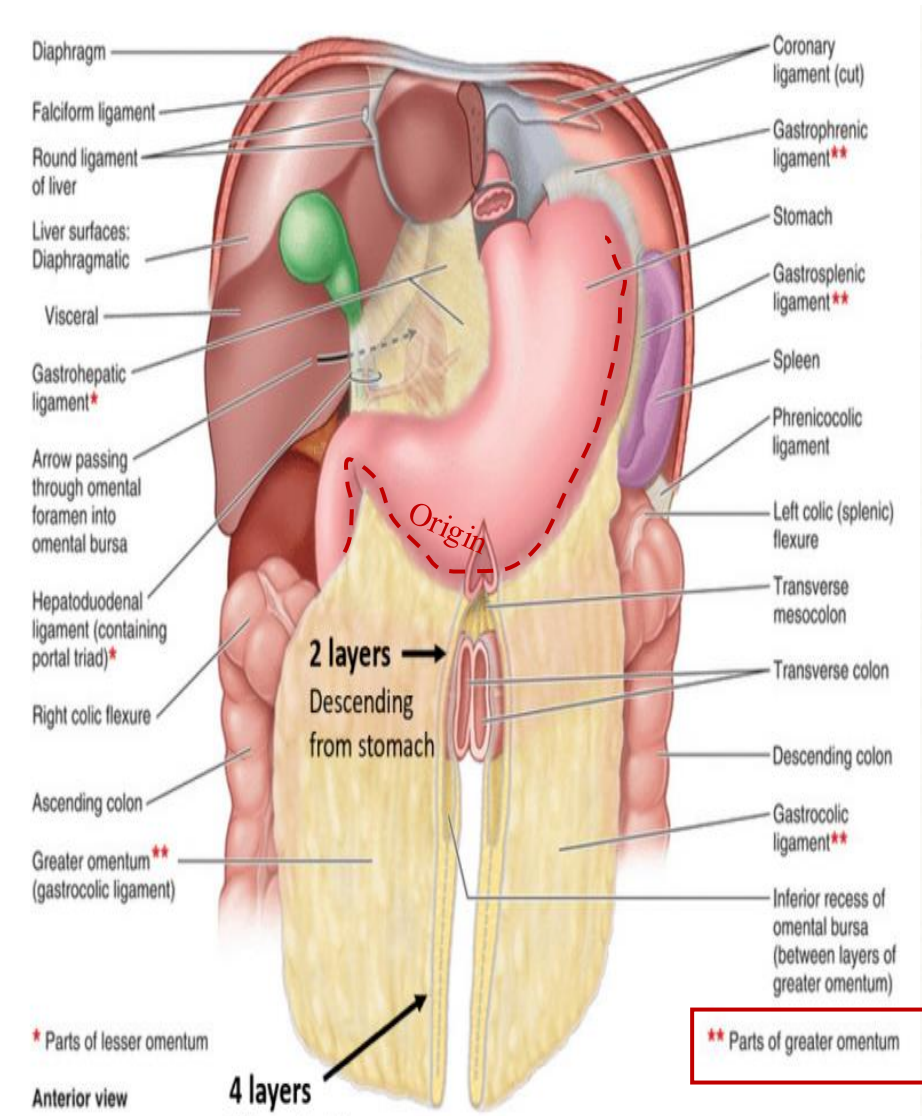
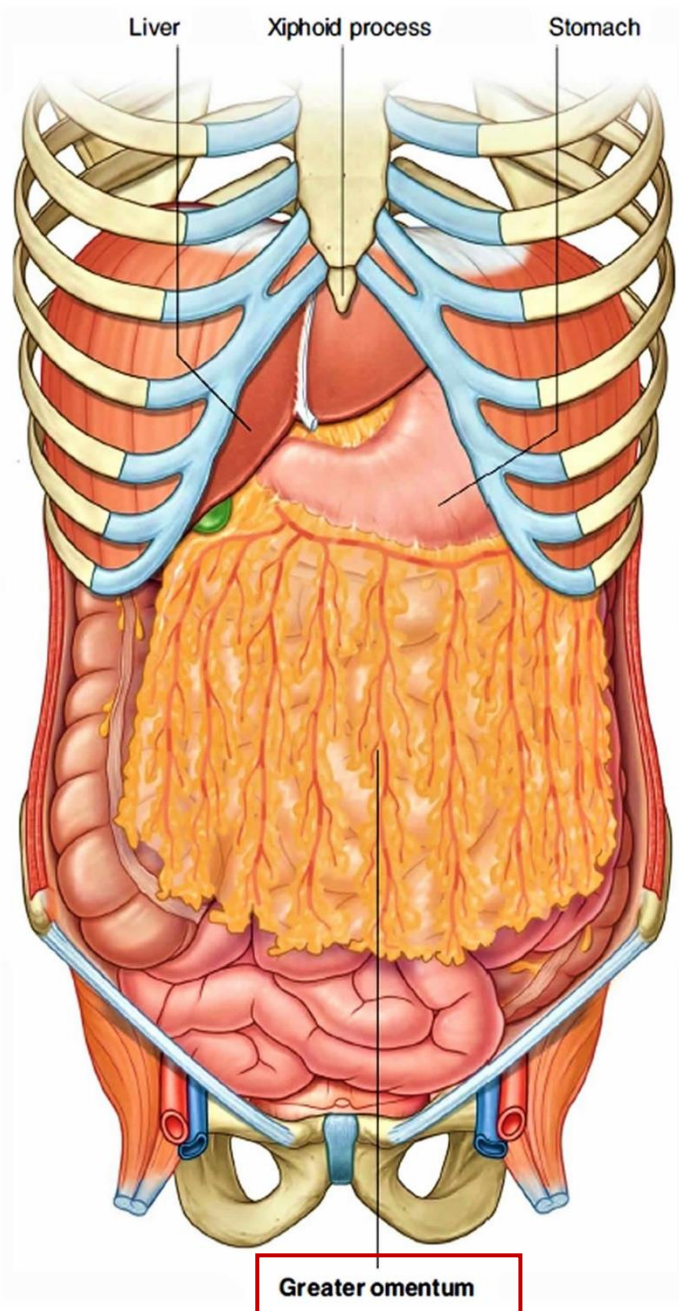


# 11- Omentum

## 2. Greater Omentum

- **Origin:** From the first inch of the duodenum and the greater curvature of the stomach.
- **Structure:** 4 layers of peritoneum (2 descending, 2 ascending)
  - It forms two layers that descend to cover the intestines, then fold upward as two additional layers. As it encloses the transverse colon, it becomes the transverse mesocolon, which then attaches to the anterior border of the pancreas and ultimately fuses with the parietal peritoneum on the posterior abdominal wall.
- **Contents between layers:**
  - Right and left Gastroepiploic vessels
  - Short gastric arteries
  - Fat, lymph nodes.
  - ANS : sympathetic + parasympathetic (vagus nerve).



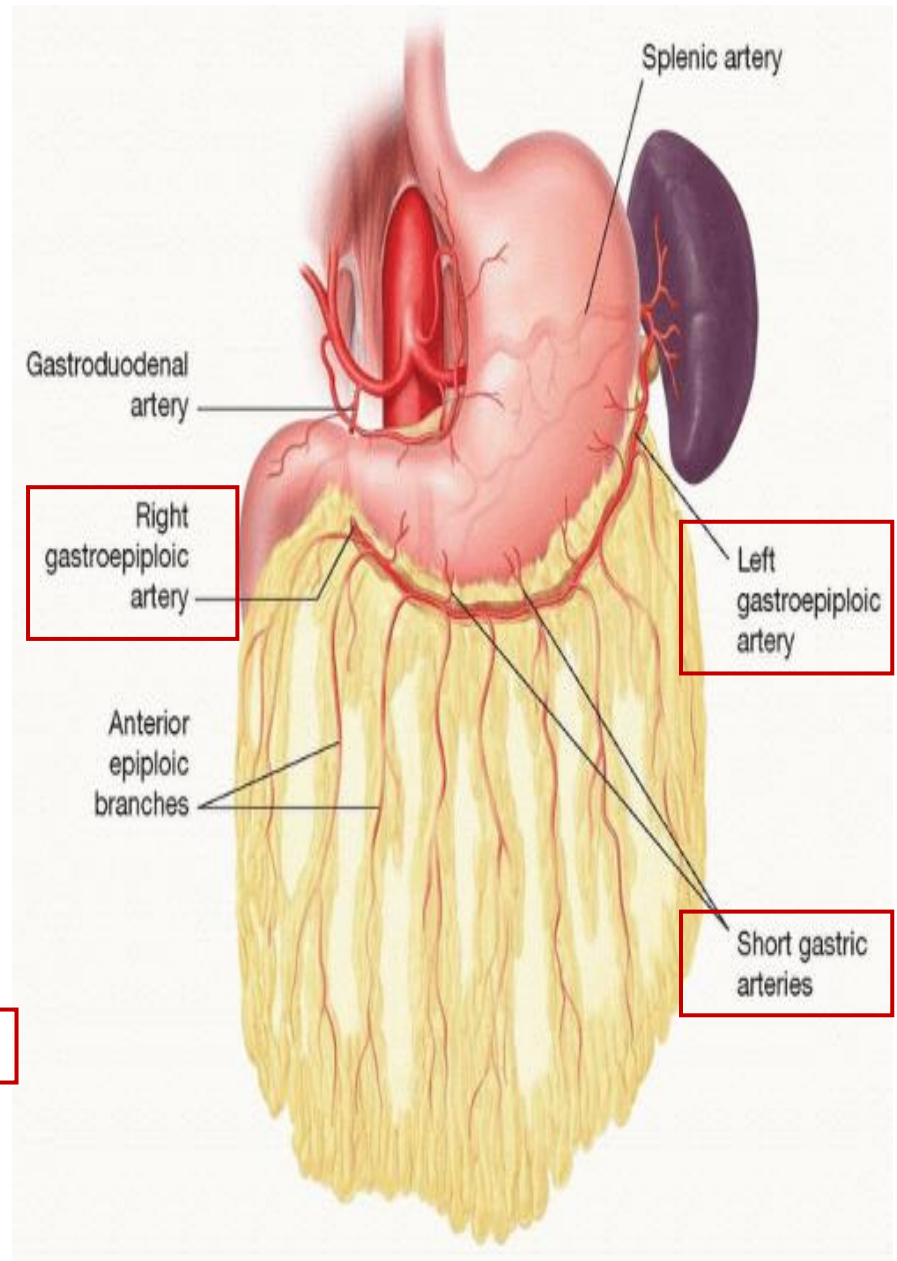


\* Parts of lesser omentum  
Anterior view

\*\* Parts of greater omentum

**4 layers**  
Where double layer folds back on itself  
2 ascending & 2 descending  
Which fuses with transverse mesocolon

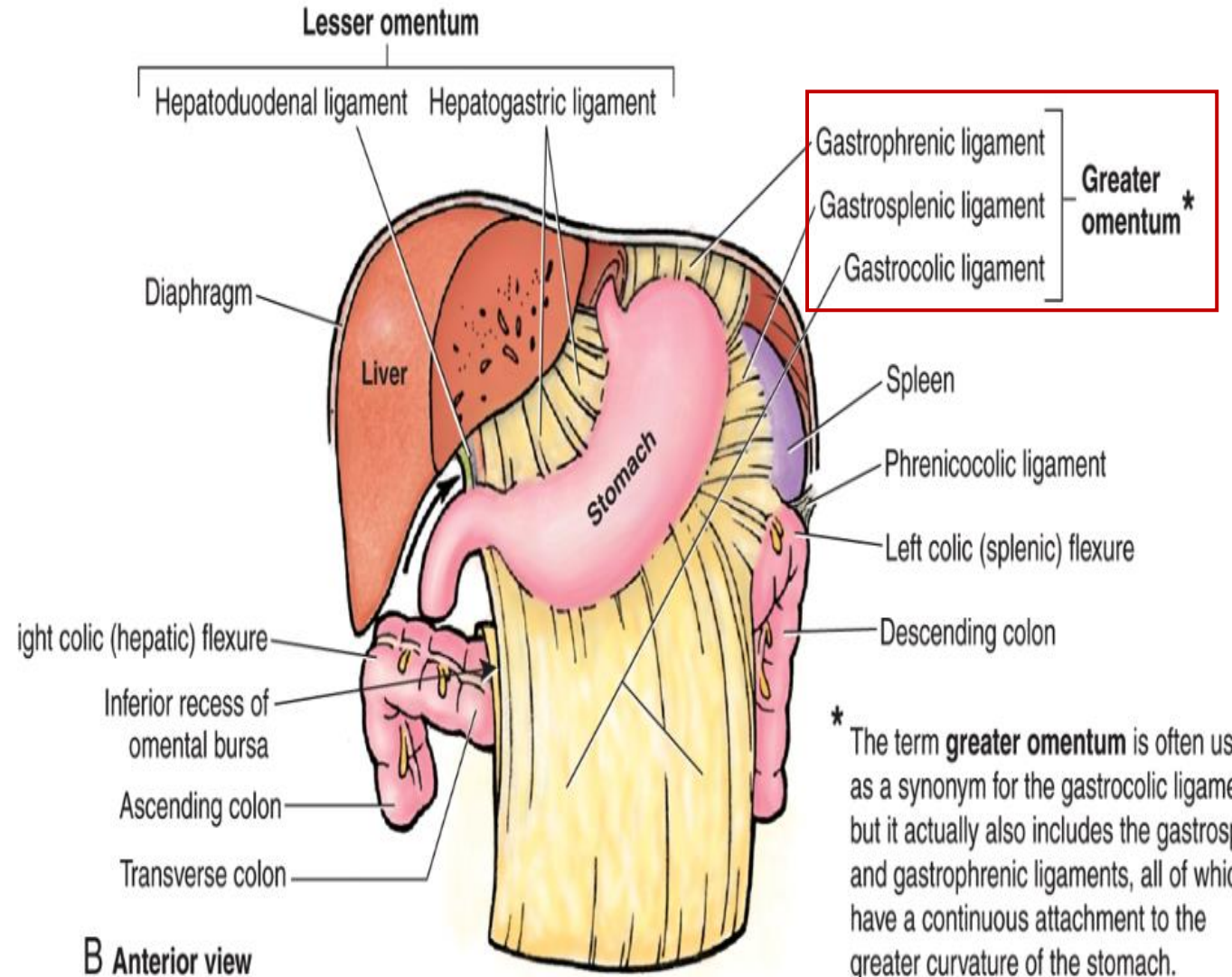
Figure 3.10.



# 12- Greater Omentum

## Greater Omentum Subdivisions:

- **Gastrocolic ligament:**  
Connects the stomach to the transverse colon.
- **Gastrosplenic ligament:**  
Connects the stomach to the spleen.
- **Gastrophrenic ligament:**  
Connects the stomach to the diaphragm, near the fundus.



# 12- Greater Omentum

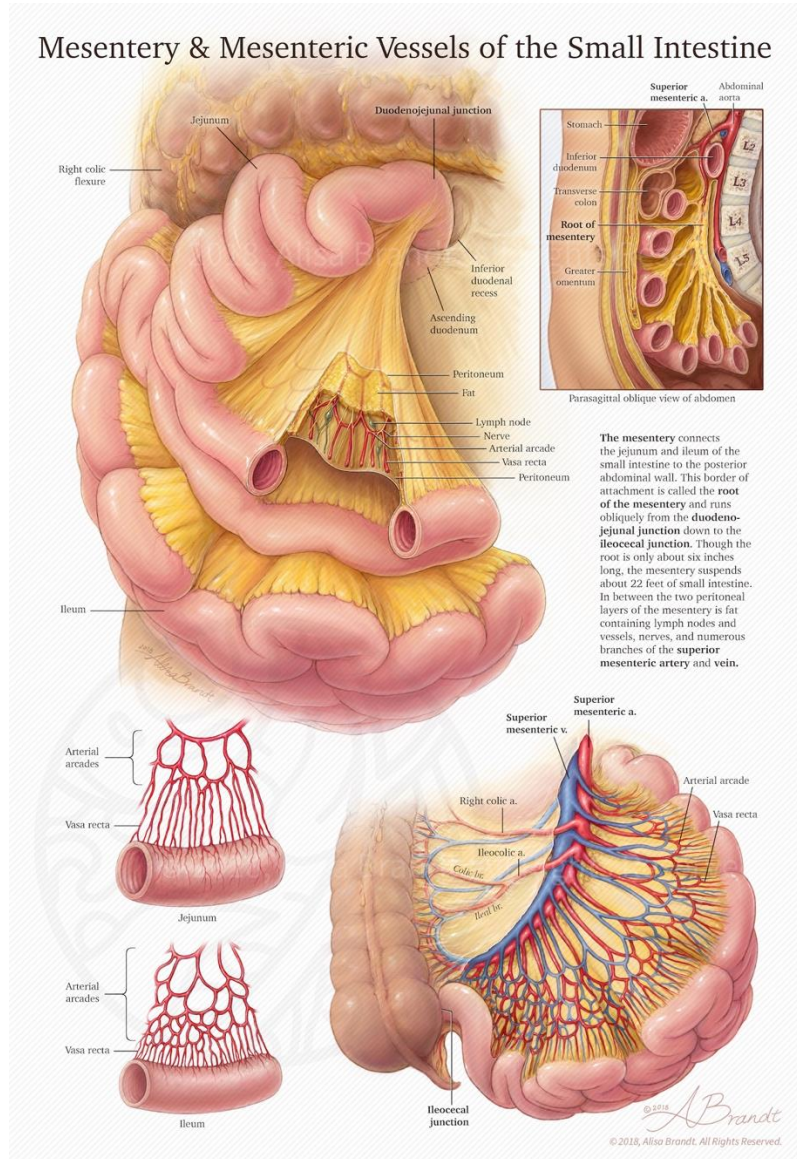
## Greater Omentum function:

- **Protective Role:**
  - Rich in **fixed macrophages** that help detect and eliminate pathogens, contributing to immune defense within the peritoneal cavity.
- **Fat Storage & Insulation**
  - Acts as an **energy reserve** and provides thermal insulation and mechanical cushioning for abdominal organs.
- **Infection Control & Isolation (*Migration & Containment*)**
  - Uniquely capable of **migrating** toward areas of inflammation, such as infection, perforation, or trauma.
  - **Encapsulates** the affected region, **physically isolating** it to limit the spread of infection.
  - Known as the "**Policeman of the Abdomen**" due to its role in localizing intra-abdominal infection. Example: In appendicitis, the greater omentum may surround the inflamed appendix to help contain infection - 😊 **surgical indication**

# 13- The Mesentery

## 1. Mesentery of the Small Intestine

- **Definition:** A double-layered peritoneal fold that suspends the jejunum and ileum from the posterior abdominal wall.
- **Structure:**
  - **Root of the Mesentery:** Short, fixed part (6 inch / 15 cm) attached to the posterior abdominal wall.
  - **Free Edge:** Long mobile part (~6 meters) that encloses intestinal loops in a fan-shaped manner.
- **Contents (between its two layers):**
  - Jejunal & ileal branches of the **superior mesenteric artery and veins**.
  - **Autonomic nerves** (sympathetic & parasympathetic).
  - **Lymphatics** (vessels & nodes).
  - **Fat**, more abundant in the ileum.
  - **Loose connective tissue**.



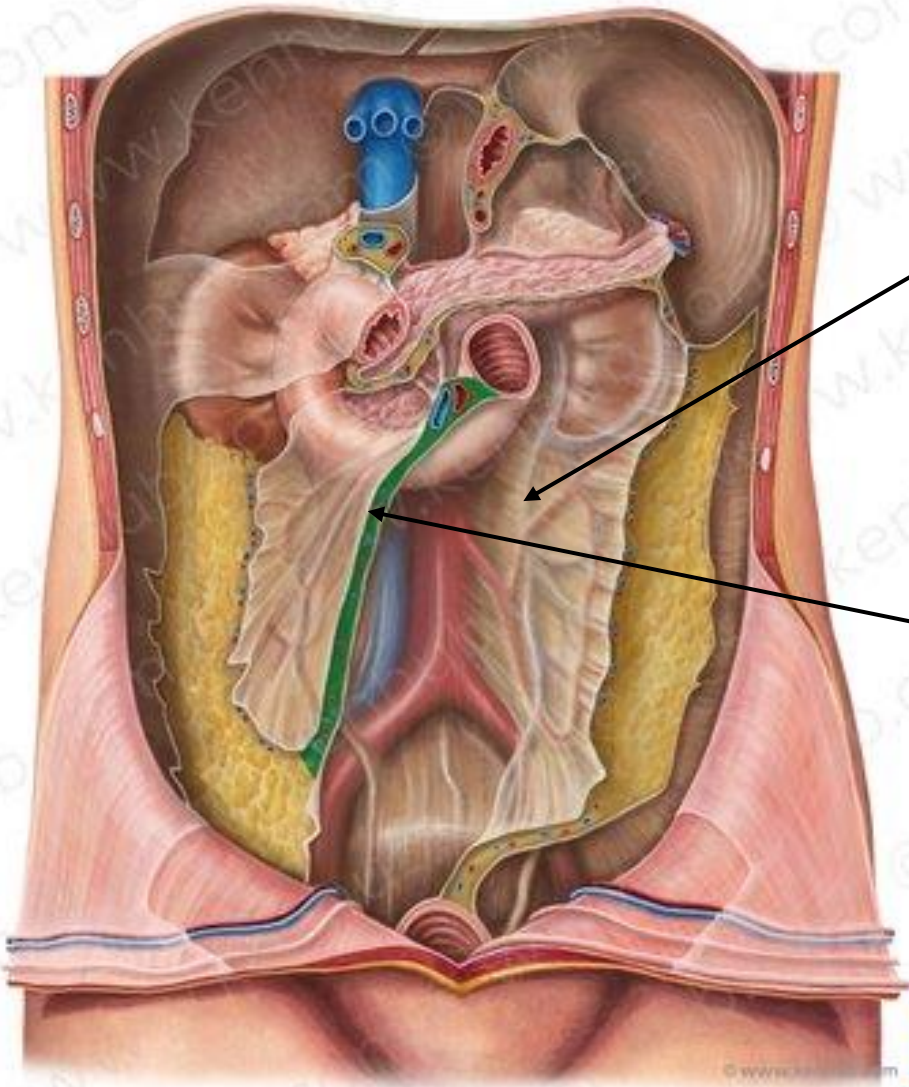
# 13- The Mesentery

## 1. Mesentery of the Small Intestine - Cont.

**Mesenteries** are distinguished from omentums chiefly by their posterior attachment to the abdominal wall and the presence of a well-defined root containing neurovascular structures.

### Root of the Mesentery:

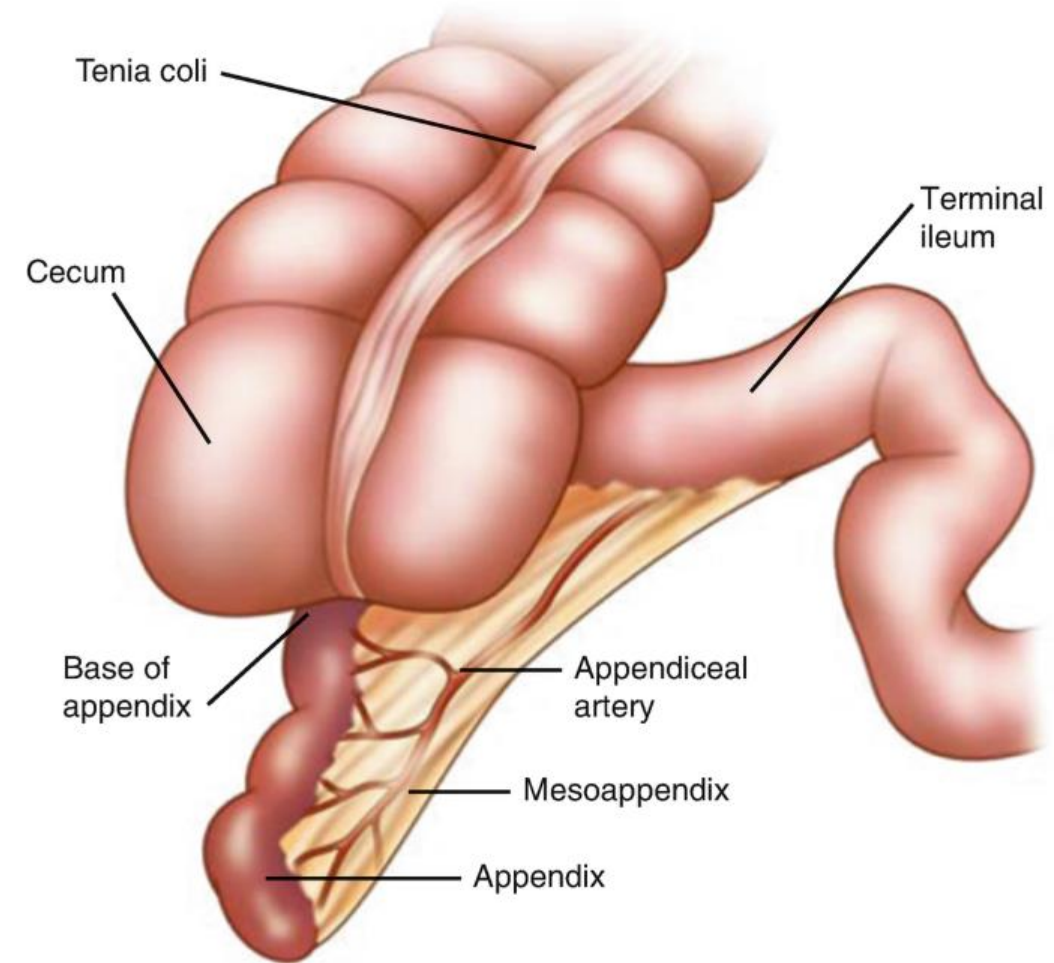
- Starts: at the **L2 vertebra**, 1 inch left of midline (near the duodenojejunal junction).
- Ends: at the **right sacroiliac joint** (ileocecal junction).



# 13- The Mesentery

## 2. Mesoappendix

- **Definition:** A triangular peritoneal fold that suspends the appendix.
- **Function:** Carries **blood vessels, nerves, and lymphatics** to/from the appendix.
- **Blood Supply:**
  - **Appendicular artery** runs through the mesoappendix.
  - Arterial Pathway: SMA → Ileocolic artery → Posterior cecal branch → Appendicular artery.
- 😊 **Appendectomy:**
  - During surgery, the **appendicular artery and vein must be ligated** to control bleeding. A circular ligature is applied at the base of the appendix, then the appendix is cut and separated.



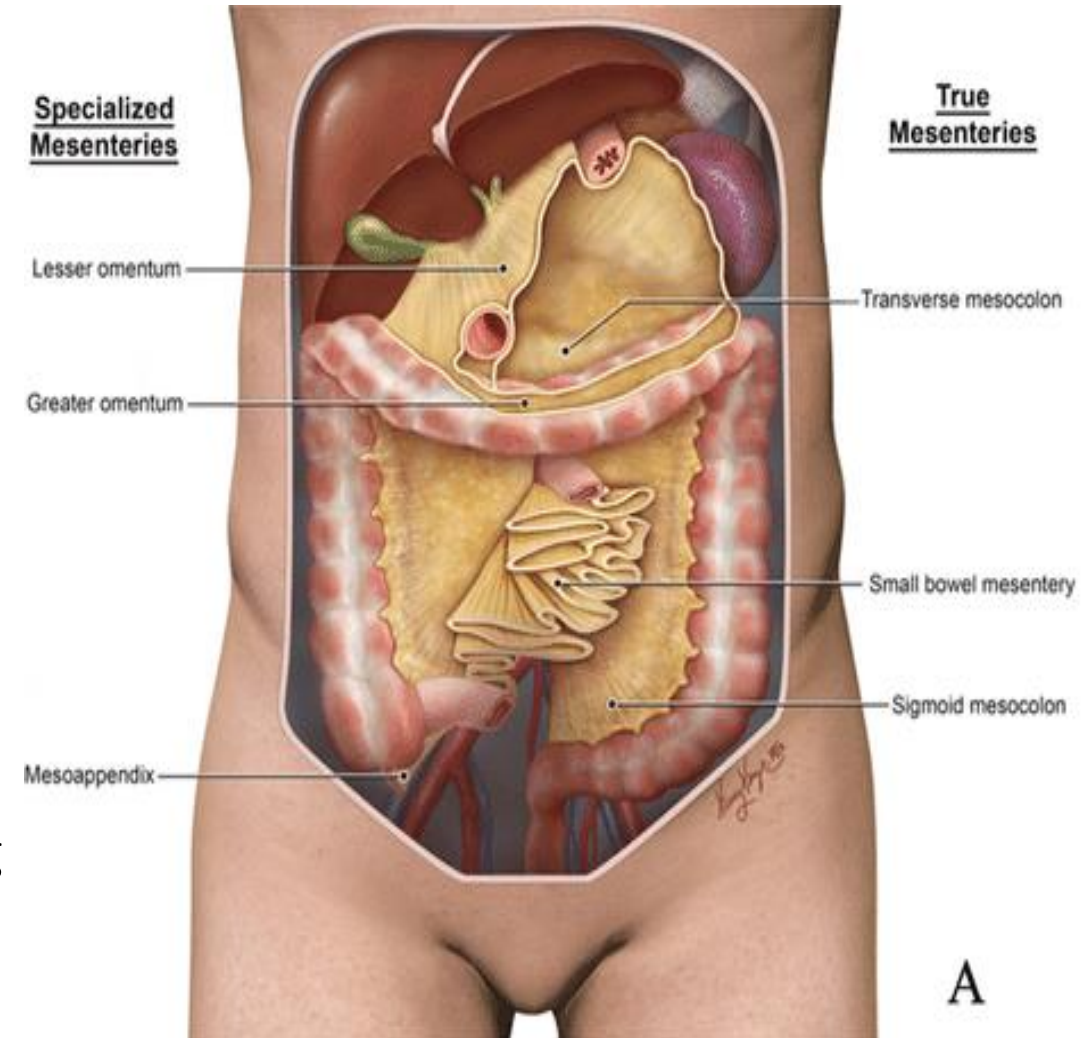
# 13- The Mesentery

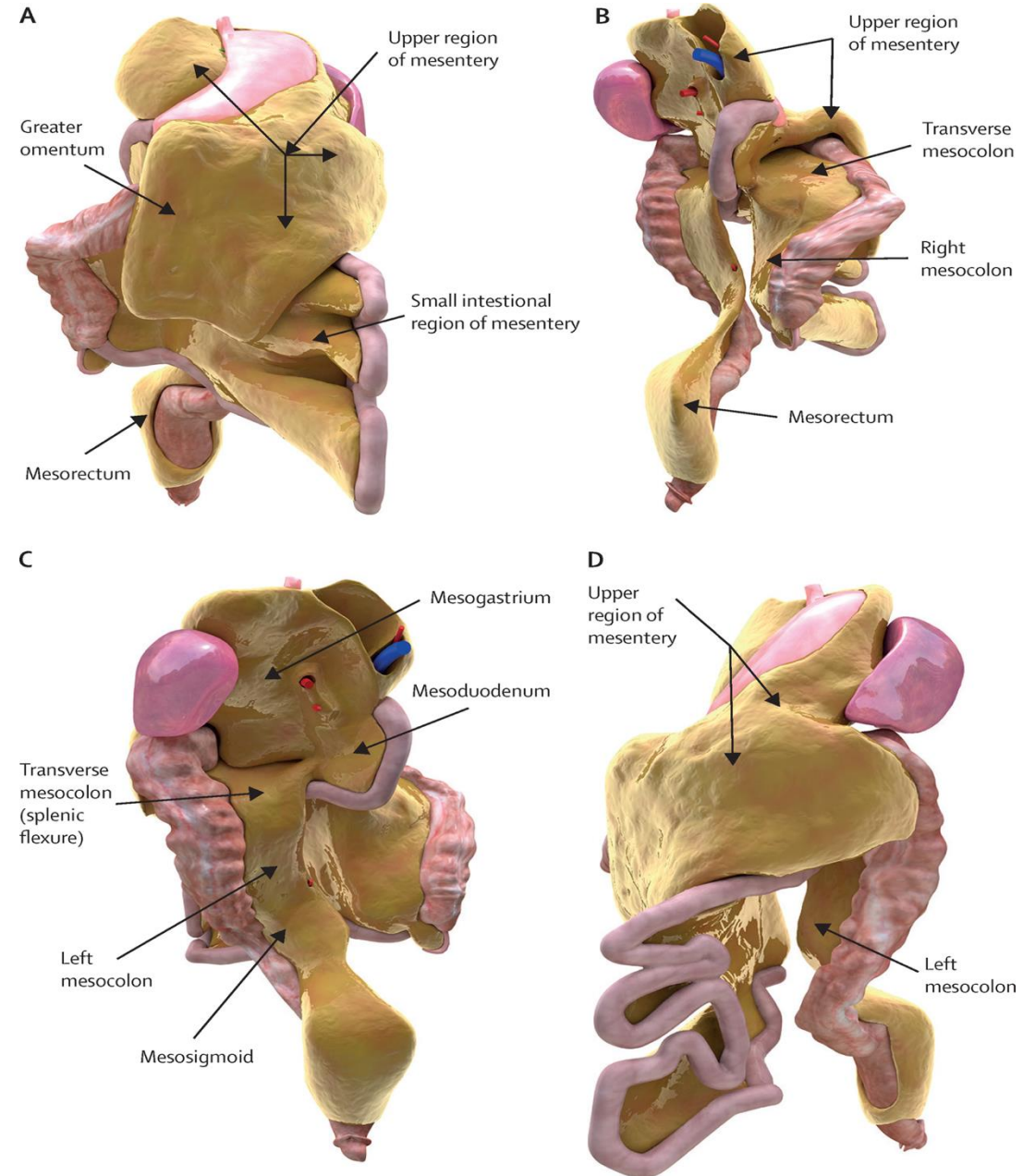
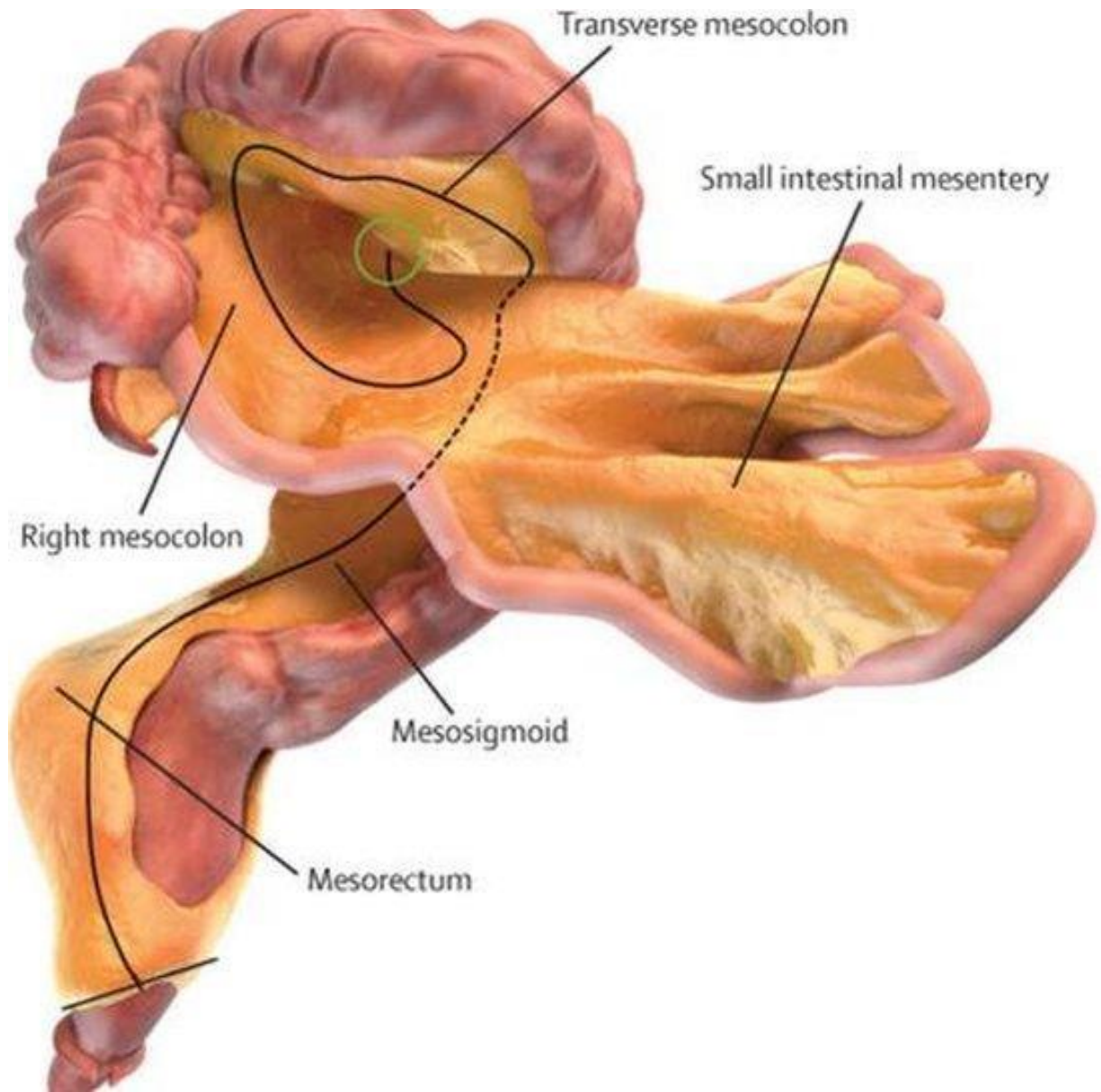
## 3. Transverse Mesocolon

- **Definition:** A horizontal peritoneal fold connecting the **transverse colon** to the **anterior surface of the pancreas**.
- **Contents:**
  - **Blood vessels:**  
Medial  $\frac{2}{3}$ : branches of the **superior mesenteric artery**.  
Lateral  $\frac{1}{3}$ : branches of the **inferior mesenteric artery**.
  - **Autonomic nerves.**
  - **Lymphatics.**

## 4. Sigmoid Mesocolon

- **Definition:** A fan-shaped peritoneal fold suspending the **sigmoid colon** from the posterior pelvic wall.
- It contains blood vessels, nerves, and lymphatics.





# 14- Ligaments

Ligaments are peritoneal folds connecting organs and contain little or no fat.

## Ligaments of the Liver:

### 1. Falciform Ligament

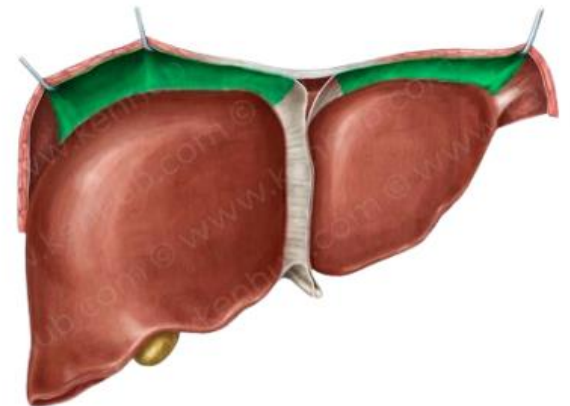
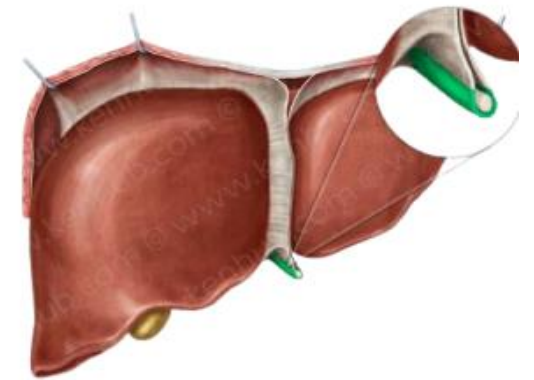
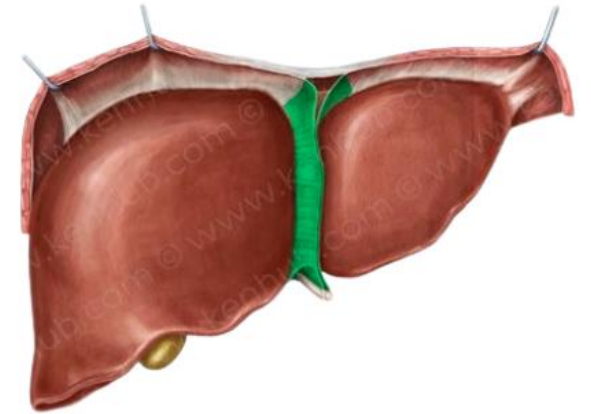
- A double layer of peritoneum attaching the **anterior surface of the liver to diaphragm.**
- Anatomically separates the **right (that communicate with the pelvic) and left lobes** of the liver.
- Helps divide the **greater sac** into right and left **subphrenic compartments.**

### 2. Ligamentum Teres (round ligament of liver)

- Found at the **free inferior margin** of the falciform ligament.
- Remnant of the **left umbilical vein.**

### 3. Coronary Ligament

- Peritoneal reflection attaching the **superior surface of the liver to the diaphragm.**



# 14- Ligaments

## Ligaments of the Liver:

### 4 & 5. Right and Left Triangular Ligaments

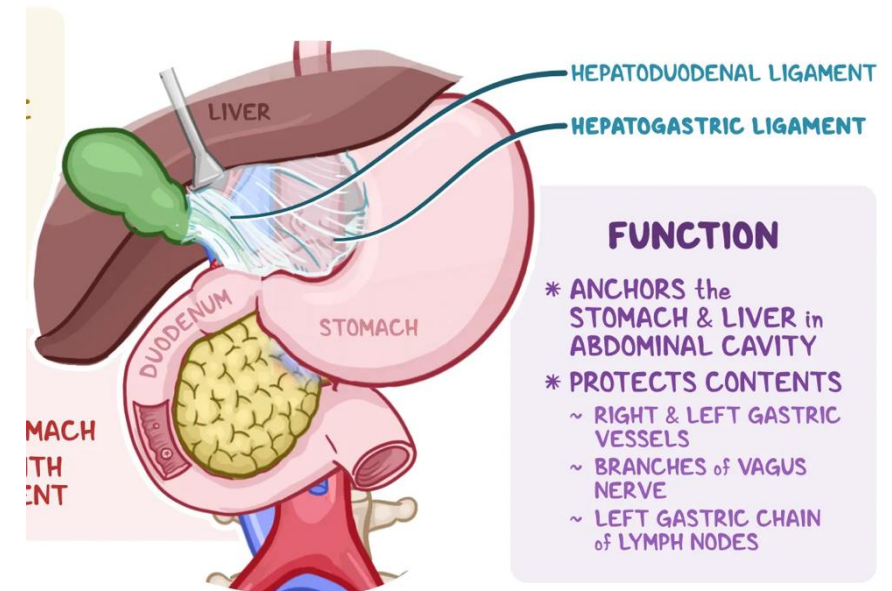
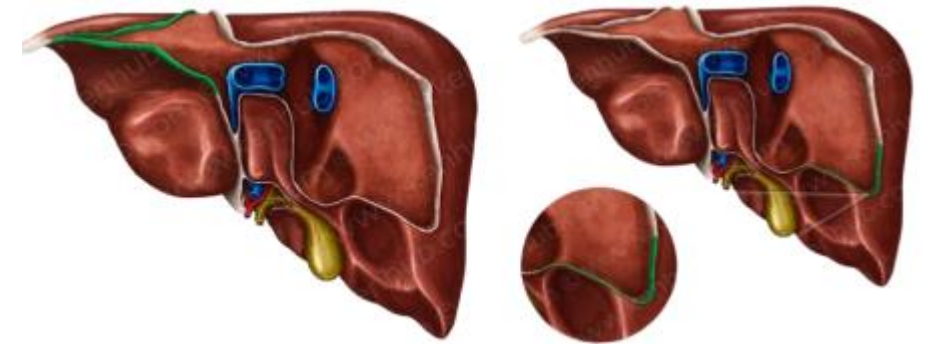
- Formed by the **lateral fusion** of the coronary ligament layers at right and left extrema's of liver.
- The Coronary ligament of liver and triangular ligaments surround the bare area of the liver.

### 6. Hepatogastric Ligament

- Connects the **liver to the lesser curvature of the stomach.**
- Forms the medial part of the **lesser omentum.**

### 7. Hepatoduodenal Ligament

- Connects the **liver to the first part of the duodenum.**
- Forms the lateral part of the **lesser omentum.**



# 14- Ligaments

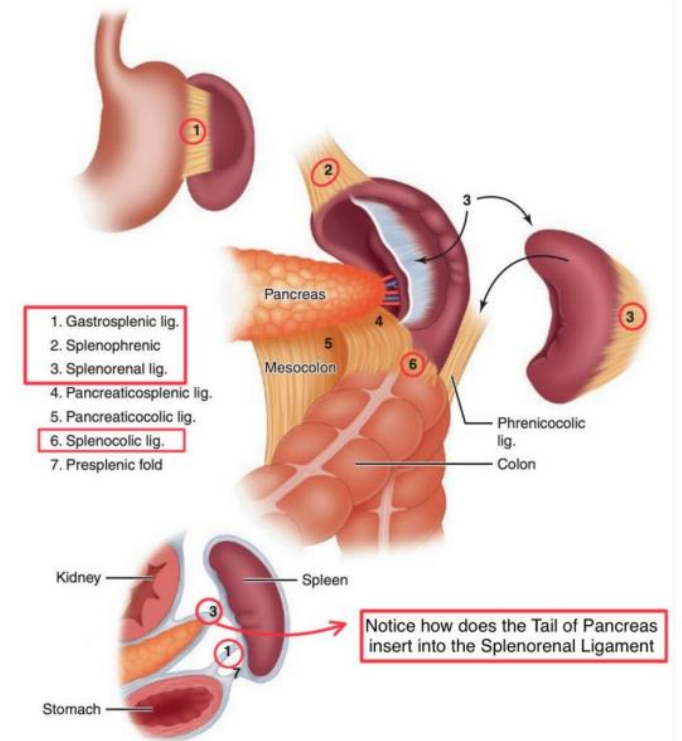
## Ligaments of the Spleen

### 1. Gastrosplenic Ligament

- Connects the **greater curvature of the stomach** to the **hilum of the spleen**.
- Part of the **greater omentum**.
- Contains:
  - Short gastric vessels
  - Left gastroepiploic vessels

### 2. Splenorenal (Lienorenal) Ligament

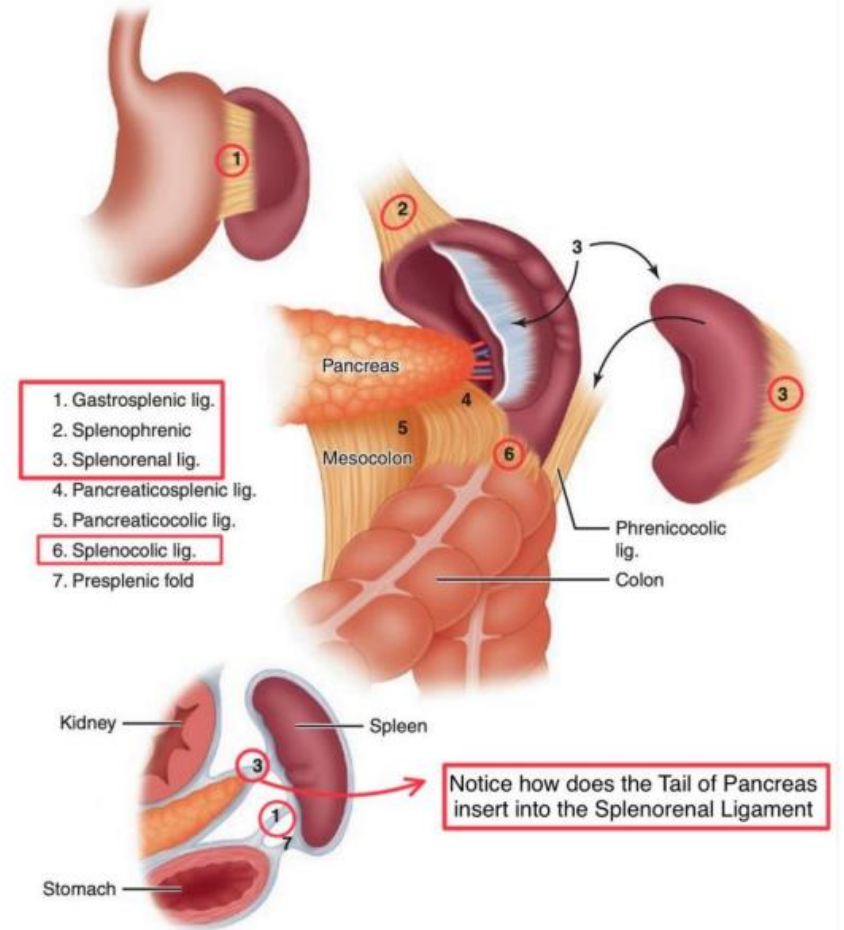
- Connects the **spleen to the anterior surface of the left kidney**.
- Contains:
  - **Splenic vessels**
  - **Lymphatics and nodes**
  - **Nerves**
  - **Tail of the pancreas**
- Important during 😊 **splenectomy** to avoid damaging the **pancreatic tail**. – next slide



# 14- Ligaments

## 1. 😊 splenectomy:

- Since spleen acts as a blood reservoir, In cases of **splenic rupture**, severe bleeding occurs, often necessitating removal of the spleen.
- **Surgical Considerations:**
  - **Ligation of Splenic Vessels:**  
The main splenic vessels are ligated within the **splenorenal ligament** to control bleeding.
  - **Protection of the Pancreas:**  
During surgery, it's essential to **avoid injury to the tail of the pancreas**, which is closely related to the splenic hilum, to prevent pancreatic secretion issues which could cause peritonitis.



# 14- Ligaments

## Ligaments of the Spleen

### 3. Phrenicosplenic Ligament

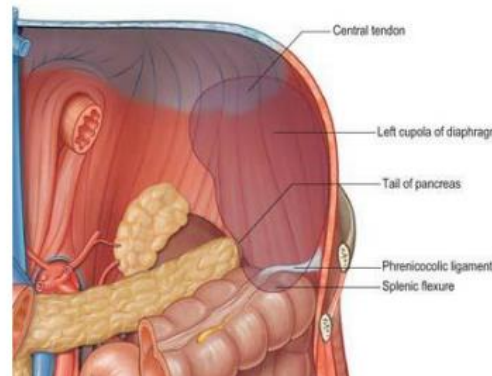
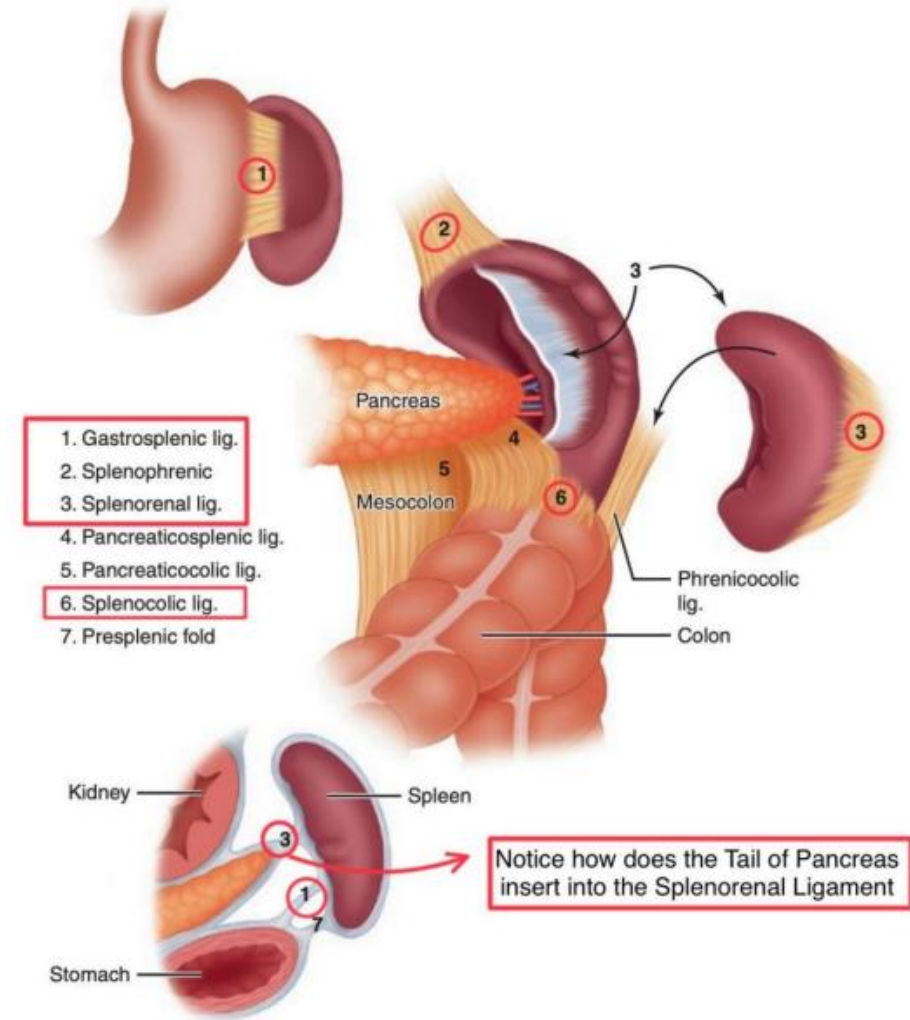
- Connects the **diaphragm** to the **spleen**.

### 4. Splenocolic Ligament

- Runs between the **splenic flexure (left colic flexure)** and the **inferior surface of the spleen**.
- Important in 😊 **infection control** – next slide

## Phrenicocolic ligament:

- A peritoneal fold stretching from the **left colic (splenic) flexure of the colon to the diaphragm**, opposite the 10th–12th ribs.
- separate the upper and lower parts of the abdominal cavity.
- Important in 😊 **infection control** – next slide



# 14- Ligaments

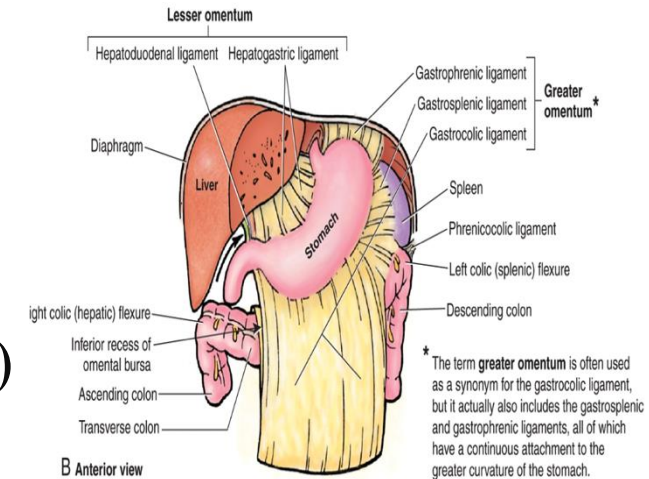
## 2. 😊 infection control:

- left side of the abdomen is limited while the right side is open aiding in infection spread:
- **Left Side (Limited):**
  - The **phrenicocolic** ligament and the **splenocolic** ligament act as **anatomical barriers**.
  - These ligaments limit the spread of infection, fluid, or pus from the spleen and left upper quadrant upwards toward the diaphragm.
  - They prevent the ascent of infection into the subphrenic or subdiaphragmatic spaces, thereby containing infections like splenic abscesses or ruptures.
- **Right Side (Open):**
  - There are no such anatomical barriers on the right side of the abdomen.
  - For example, in appendicitis, infection can spread freely from the appendix to adjacent areas such as the subhepatic space or Morison's pouch (hepatorenal recess).
  - This openness allows infections to ascend and involve the subdiaphragmatic spaces, potentially leading to conditions like subphrenic abscesses.

# 14- Ligaments

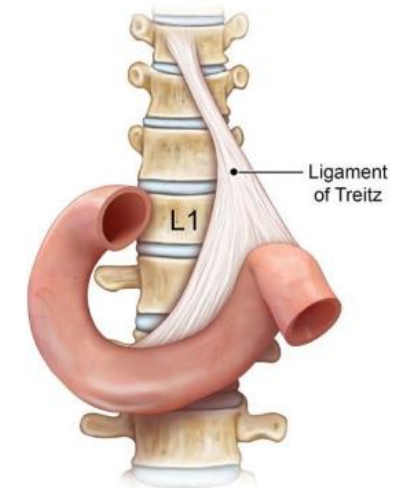
## Ligaments of the Stomach

- **Hepatogastric Ligament** (part of lesser omentum)
- **Gastrosplenic Ligament** (with spleen)
- **Gastrophrenic Ligament** (to diaphragm)
- **Gastrocolic Ligament** (to transverse colon; part of greater omentum)
- **Gastropancreatic Ligament** (to pancreas)



## Ligament of the Duodenum

- **Suspensory Ligament of the Duodenum (Ligament of Treitz)**  
A peritoneal fold that **attaches the duodenojejunal junction to the right crus of the diaphragm.**



# 15- Peritoneal Recesses (Peritoneal Fossae)

- In specific regions of the abdomen, folds of the peritoneum form **small pouches or recesses (also known as fossae)**.
- These recesses are of **clinical importance** for the following reasons:
  - They can allow parts of the intestine to herniate into them, resulting in 😞 **internal hernias**. These hernias may lead to intestinal obstruction.
  - If the herniated tissue exerts pressure on the arterial supply, it results in a **strangulated hernia**, leading to ischemia and tissue necrosis (gangrene). This situation requires urgent surgical intervention, which involves removing the gangrenous tissue and performing an end-to-end anastomosis between the healthy parts to restore continuity.
  - They can act as **sites for fluid accumulation**, such as **blood, pus, or exudates** during intra-abdominal infections or inflammatory conditions.
  - Most common sites are duodenum and cecum.

# 15- Peritoneal Recesses (Peritoneal Fossae)

5 major site of recess:

## Duodenal Recesses

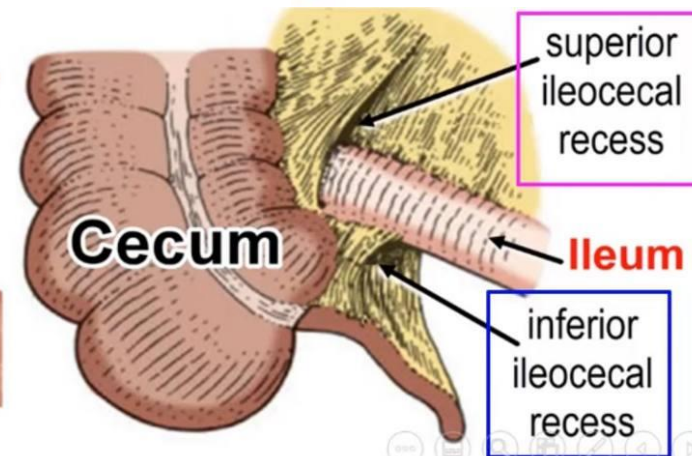
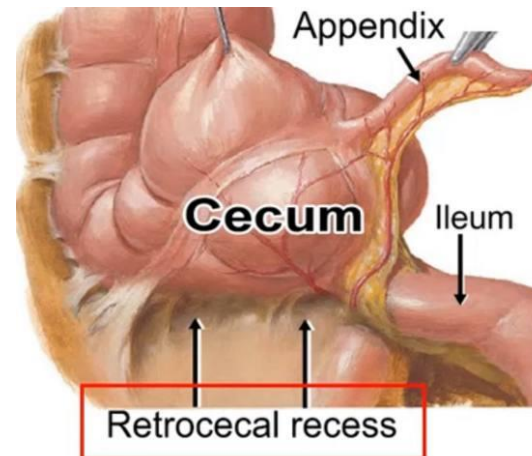
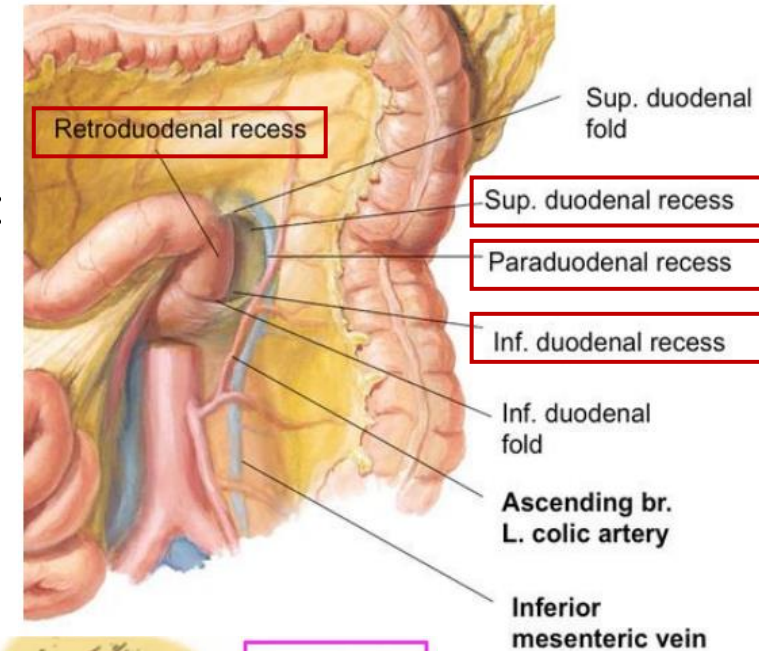
These are located near the **duodenojejunal flexure**, and include:

1. Superior duodenal recess
2. Inferior duodenal recess
3. Paraduodenal recess
4. Retroduodenal recess

## Cecal Recesses

1. Superior ileocecal recess
2. Inferior ileocecal recess
3. Retrocecal recess

## Intersigmoid Recess

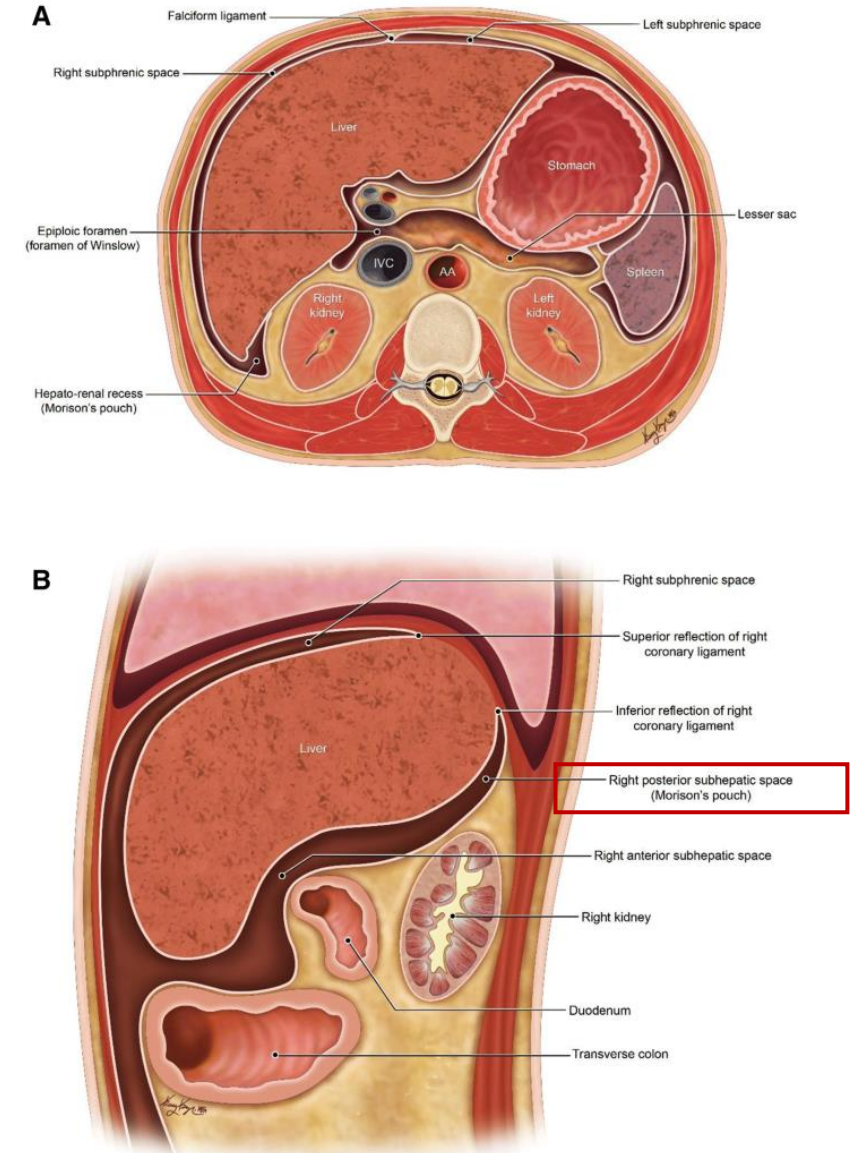


# 15- Peritoneal Recesses (Peritoneal Fossae)

**5 major sites of recess:**

## Hepatorenal Recess (Pouch of Morison)

- This is a deep peritoneal space **between the right lobe of the liver, the right kidney, and the right colic flexure.**
- The hepatorenal recess (Morison's pouch) is not only a common site for fluid accumulation and internal hernias but also a frequent site for pus collection in **perforated appendicitis**. This is particularly likely when the patient lies on the right side with the hip flexed, a position that raises intra-abdominal pressure and promotes the upward flow of infected material via the right paracolic gutter.
- Appendicular infection may spread via the right paracolic gutter to Morison's pouch or upward to the subphrenic space, forming subphrenic abscess.



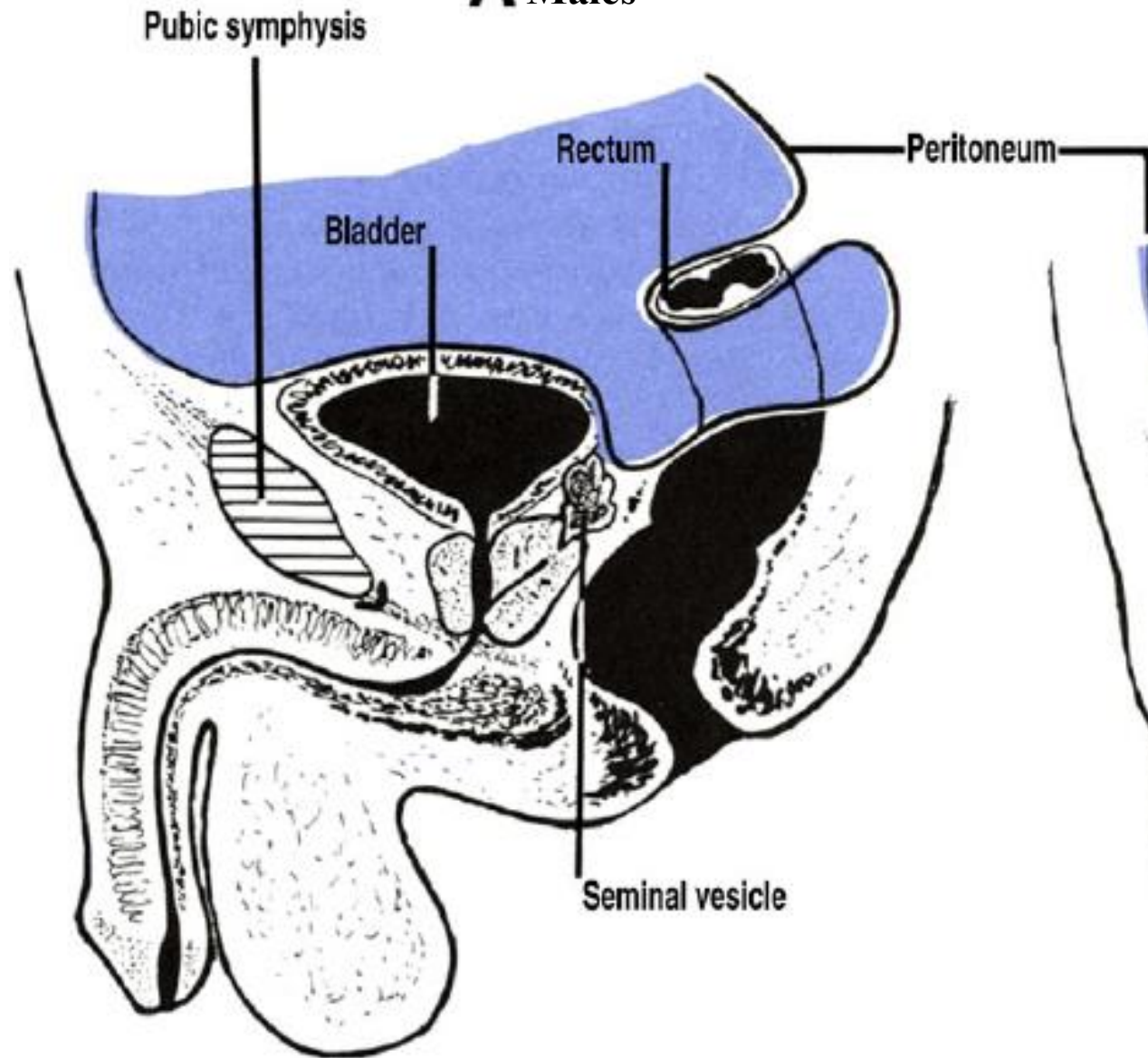
# 15- Peritoneal Recesses (Peritoneal Fossae)

5 major site of recess:

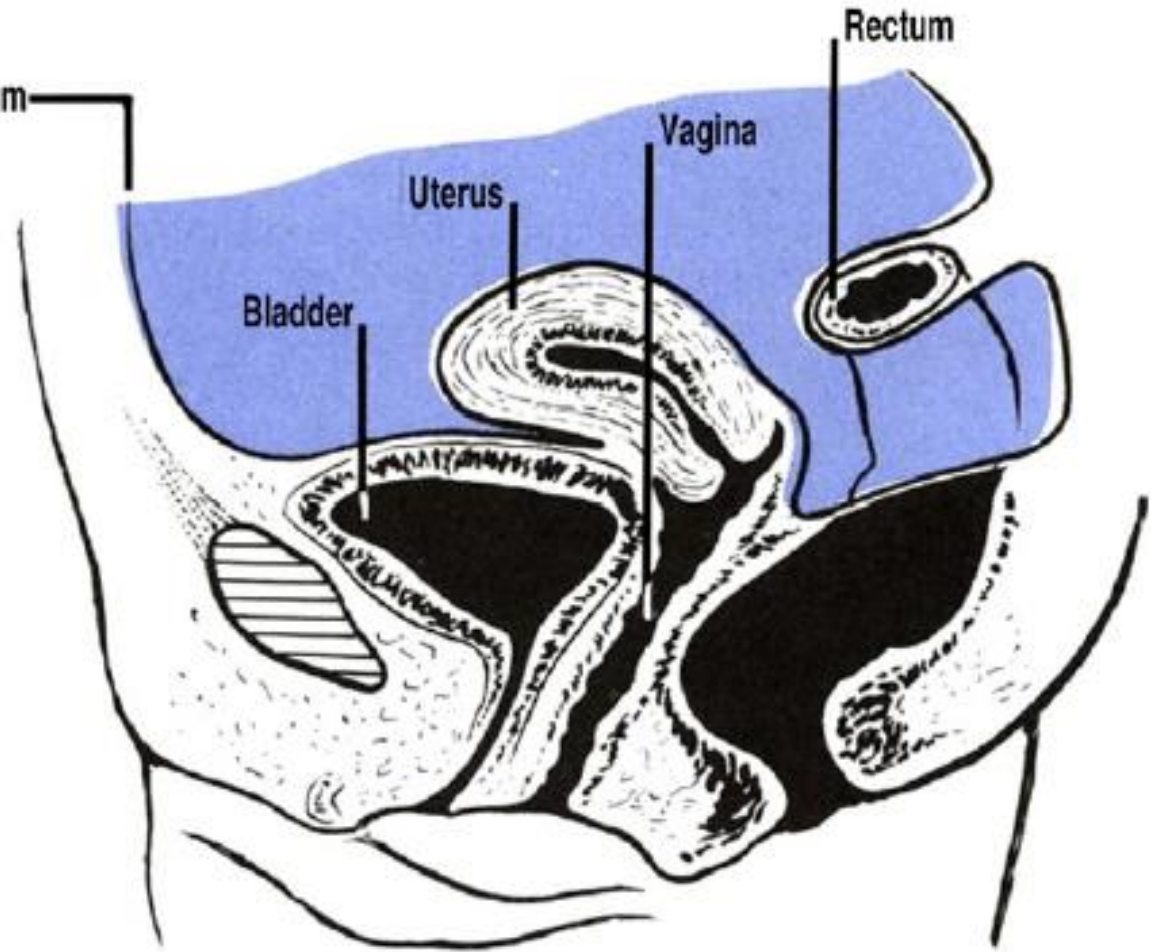
## Pelvic Peritoneal Pouches

- The transition of peritoneum from an interperitoneal Urinary bladder to a retroperitoneal rectum results in the formation **rectovesical pouch** (in males) or the **rectouterine pouch** (in females). That is; The peritoneum from the anterior abdominal wall Reflects over the upper surface of the urinary bladder, Then it continues posteriorly and inferiorly, covering the upper one-third of the rectum This sharp reflection of the peritoneum between these two viscera creates a pouch.
- **In Males:** (contains small intestine or sigmoid colon)
  1. Rectovesical Pouch: Located between the rectum and the urinary bladder.
- **In Females:**
  1. Rectouterine Pouch (Pouch of Douglas): Located posteriorly and situated between the rectum and the uterus. ( more important clinically).
  2. Vesicouterine Pouch: Located anteriorly between the urinary bladder and the uterus.The pelvic pouches in females are typically **larger**, which increases the susceptibility to developing internal hernias and fluid accumulation.

## A Males



## B Females



# Subdivisions of the Greater Sac:

Divided By the **Transverse Mesocolon** into:

- **Anterosuperior (supracolic) compartment**
- **Posteroinferior (infracolic) compartment**

## 1. **Anterosuperior Compartment:**

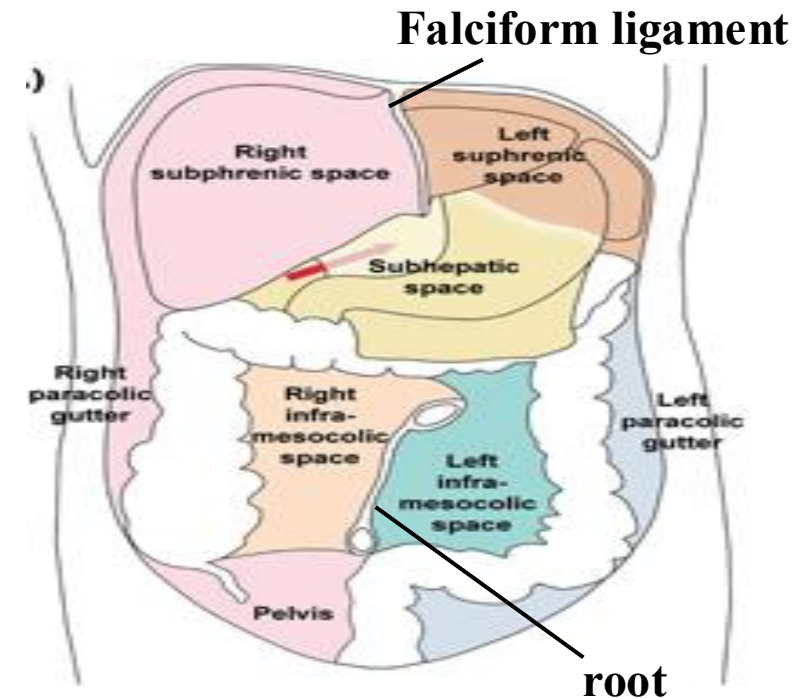
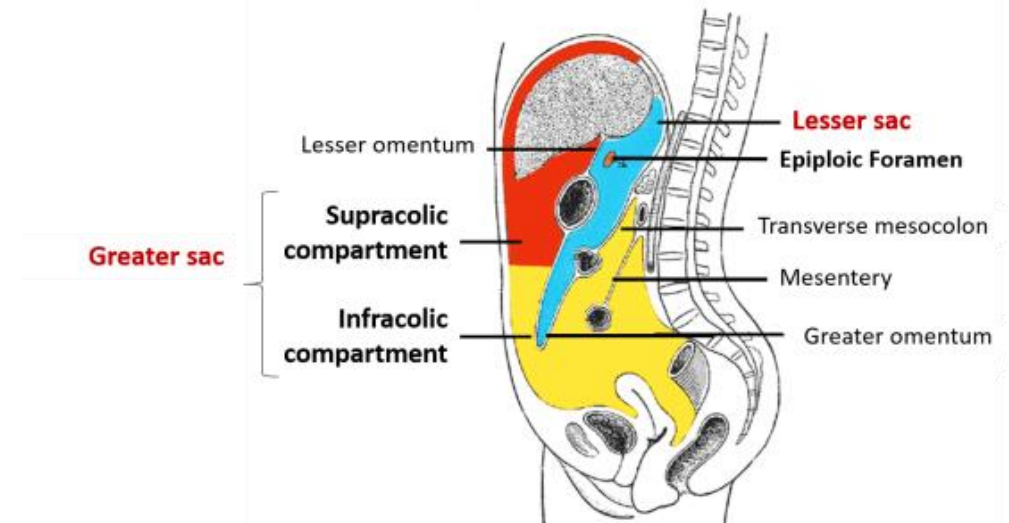
Divided into:

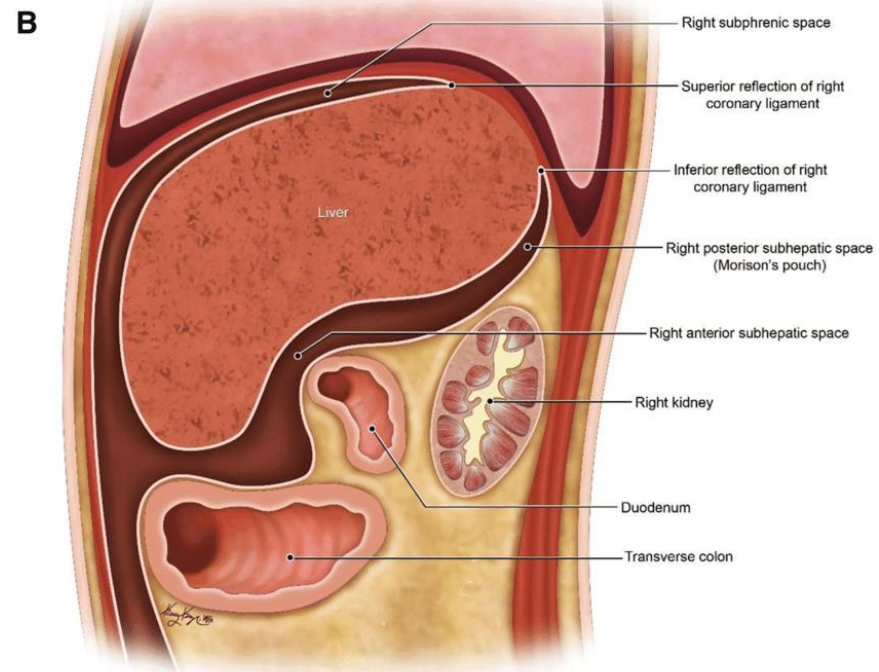
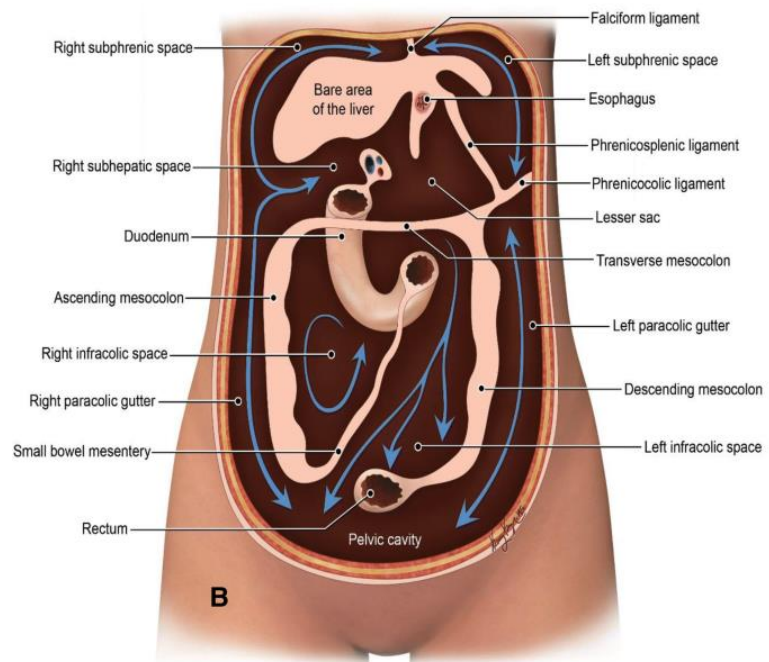
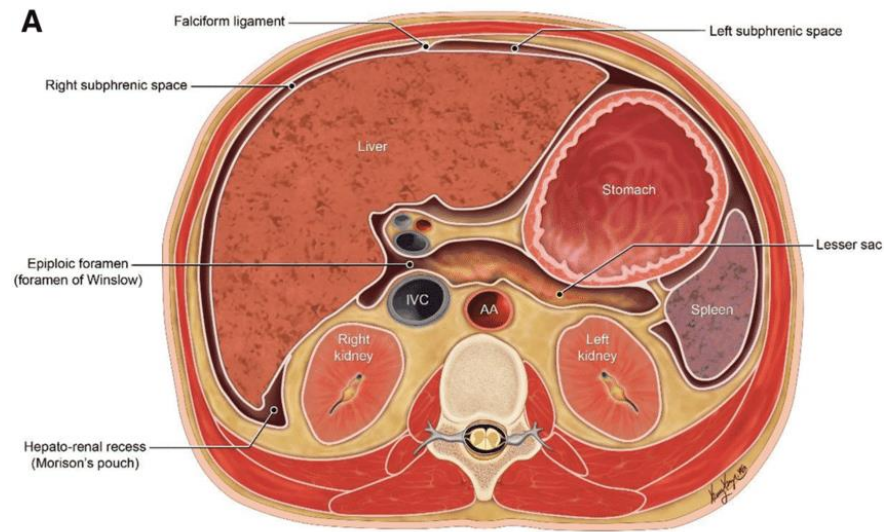
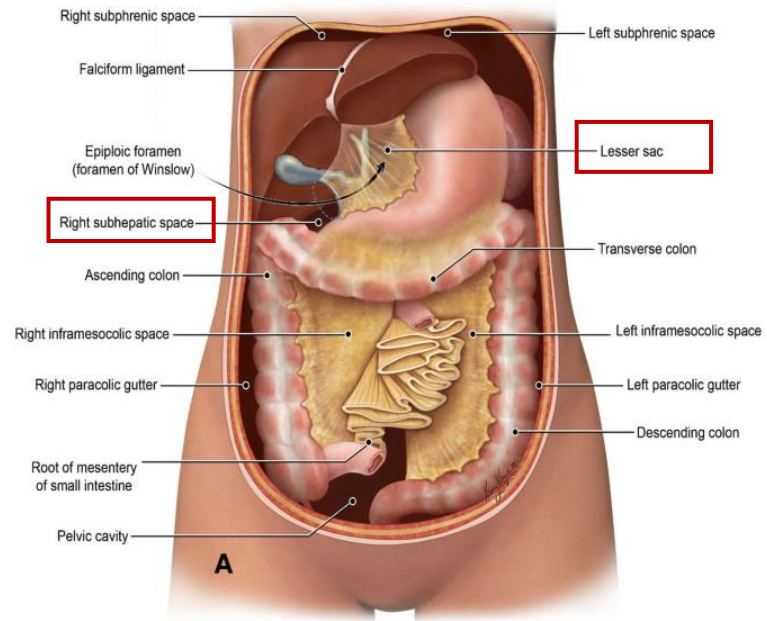
- **Subphrenic Part**

- Located below the diaphragm.
- Further subdivided by falciform ligament into:
  - **Right Subphrenic Region**
  - **Left Subphrenic Region**

- **Subhepatic Part**

- Located below the liver and above the transverse colon.
- Further subdivided divided into two regions:
  - **Right - Hepatorenal Pouch (Morrison's Pouch)**
  - **Left - Lesser Sac (Omental Bursa)**



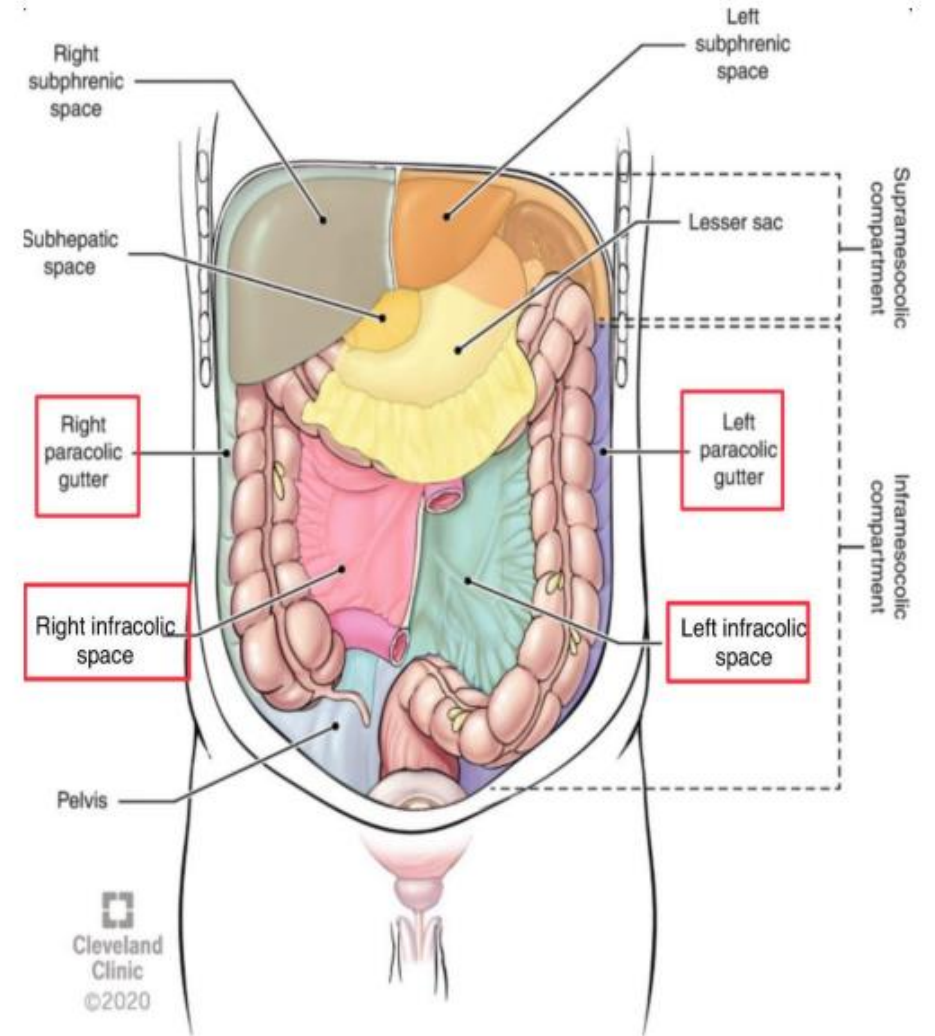
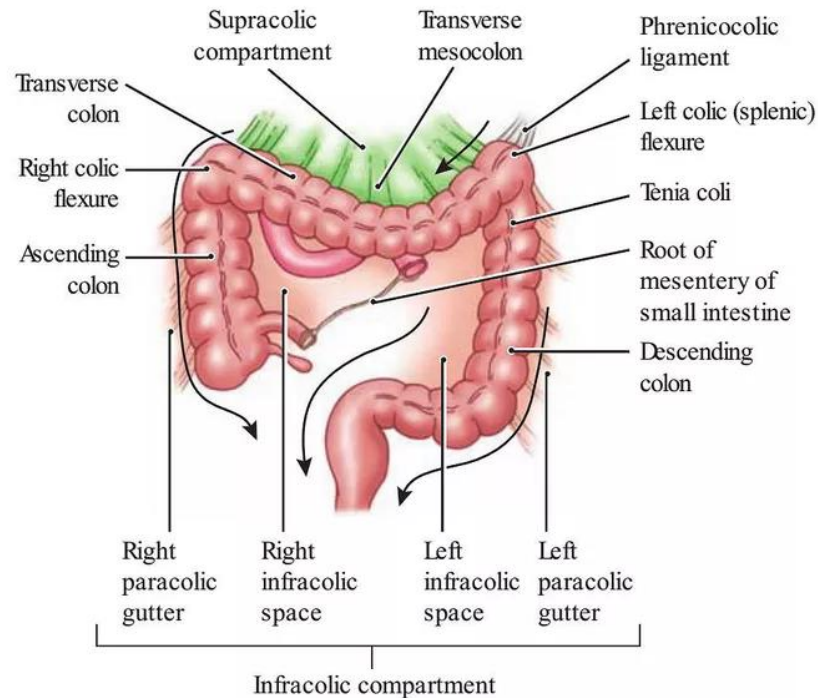


## Subdivisions of the Greater Sac:

### 2. Posteroinferior Compartment:

Divided by the small intestine & its mesentery into:

- **Right infracolic space**
- **Left infracolic space**



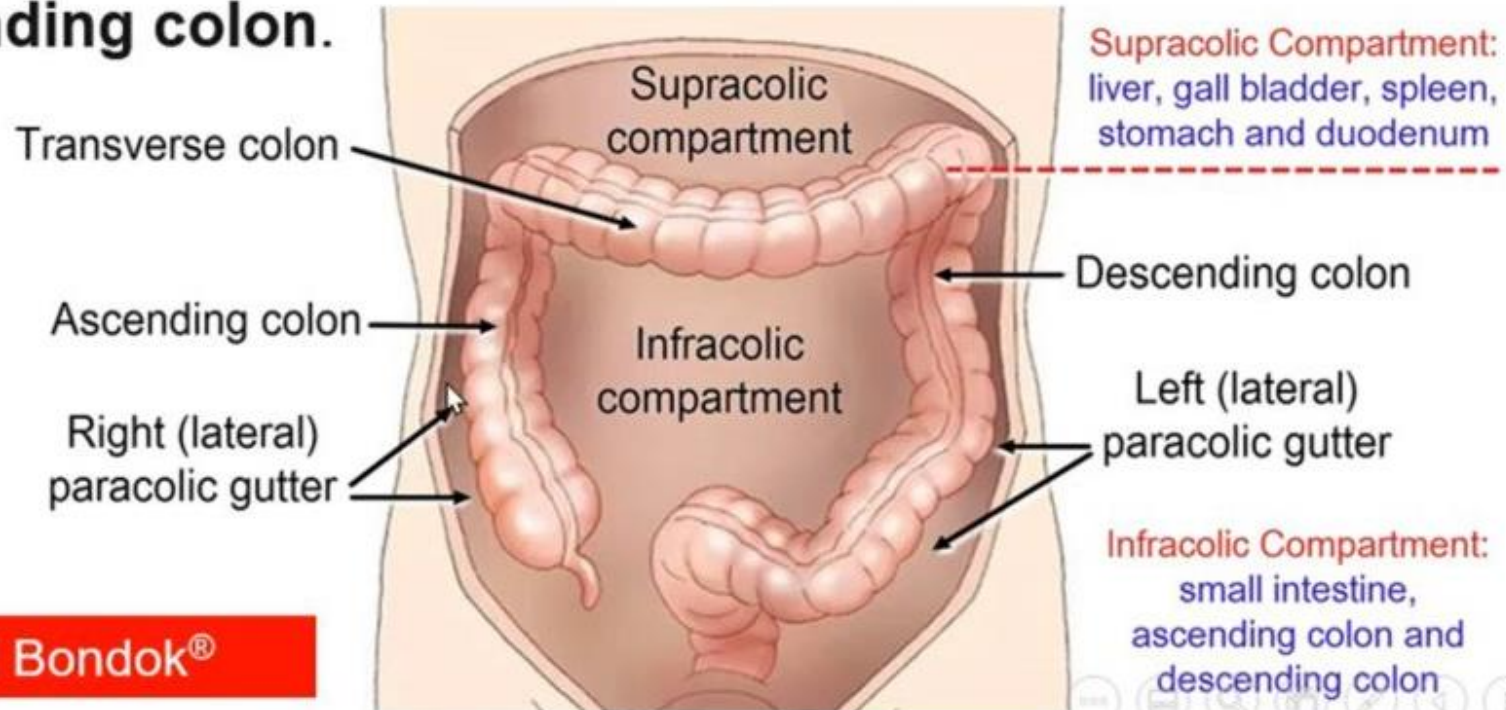
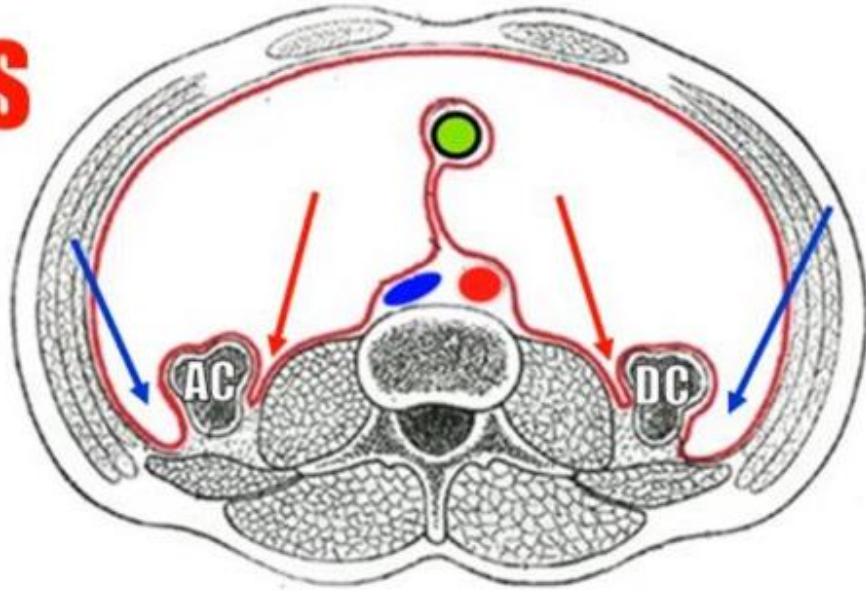
# 4 Paracolic Gutters

1. 2 Right: **medial** and **lateral**.

On each side of the **ascending colon**.

2. 2 Left: **medial** and **lateral**.

On each side of the **descending colon**.



# Paracolic gutters

☺ infection control:

**Right Side:**

Closed!

**Left Side:**

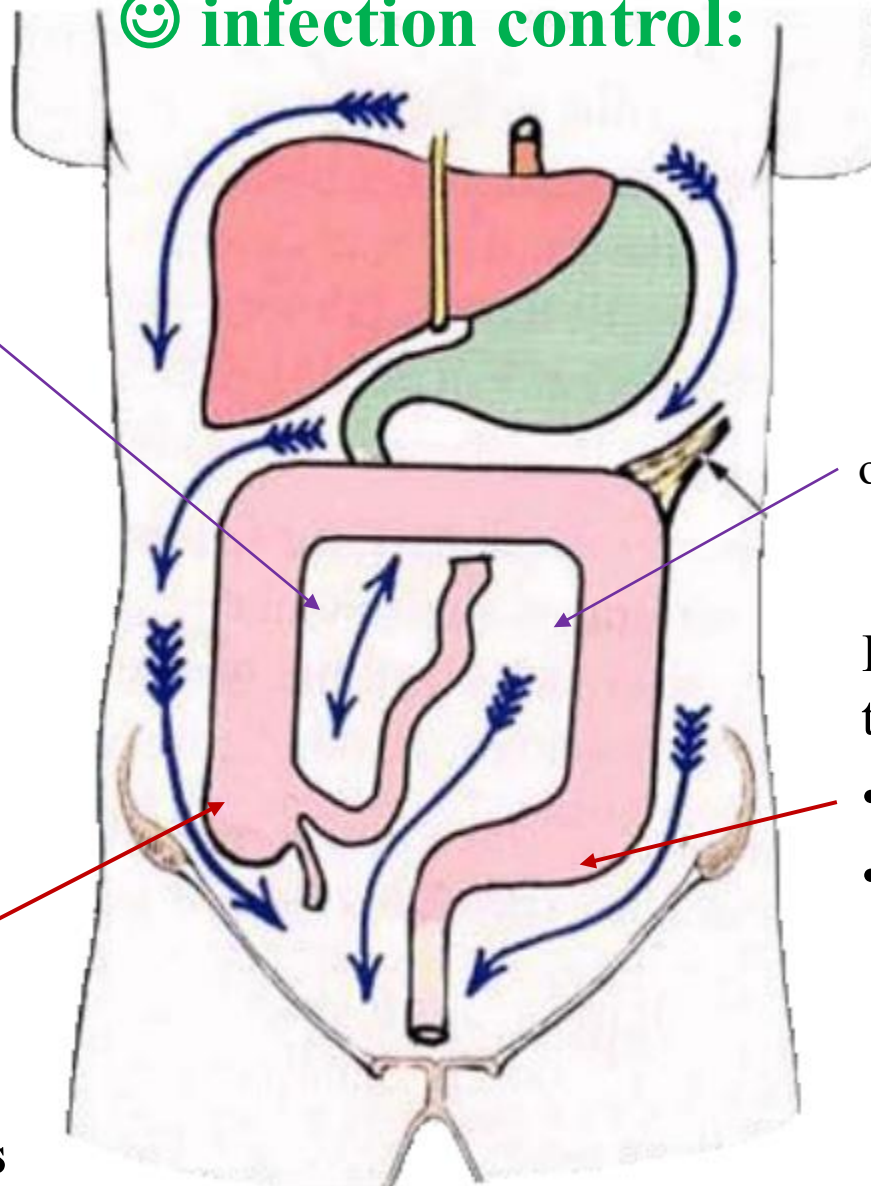
open! Can descend to pelvis

In case of **appendicitis**, the infection can spread to various areas:

- It can extend into the **pelvis**.
- The infection may also spread upward to the right **subdiaphragmatic** space (subphrenic area).
- Additionally, the infection can extend rightward to the **Morrison's** pouch.

In case of **ovary inflammation**, the infection can spread to:

- It can extend into the **pelvis**,
- But **NEVER** upward to the left **subdiaphragmatic** space, it is limited by Phrenicocolic ligament and anatomical structures



Dr. figure

# رسالة من الفريق العلمي:

وَمَنْ يَتَّقِ اللَّهَ يَجْعَلْ لَهُ مَخْرَجًا ﴿٢﴾

وَيَرْزُقْهُ مِنْ حَيْثُ لَا يَحْتَسِبُ ۚ وَمَنْ يَتَوَكَّلْ  
عَلَى اللَّهِ فَهُوَ حَسْبُهُ ۗ إِنَّ اللَّهَ بَلِغُ أَمْرِهِ ۗ

قَدْ جَعَلَ اللَّهُ لِكُلِّ شَيْءٍ قَدْرًا ﴿٣﴾

For any feedback, scan the code or click on it.



Corrections from previous versions:

Versions	Slide # and Place of Error	Before Correction	After Correction
V0 → V1			
V1 → V2			