

### MIND MAP



parietal peritoneum

**Nerve Supply** 

**Peritoneal Pain** 

**Peritoneal Dialysis** 

Clinical points

visceral peritoneum

peritoneum

parts

Parietal layer Visceral layer

Greater omentum

Lesser omentum

folds

**Omenta** 

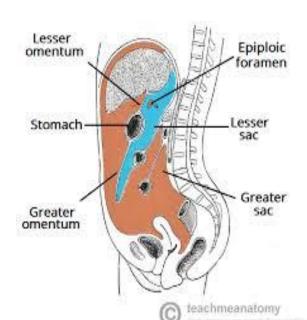
Ligaments

Mesentery

peritonial cavity

lesser sac

greater sac

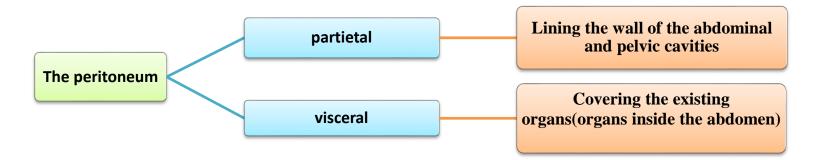




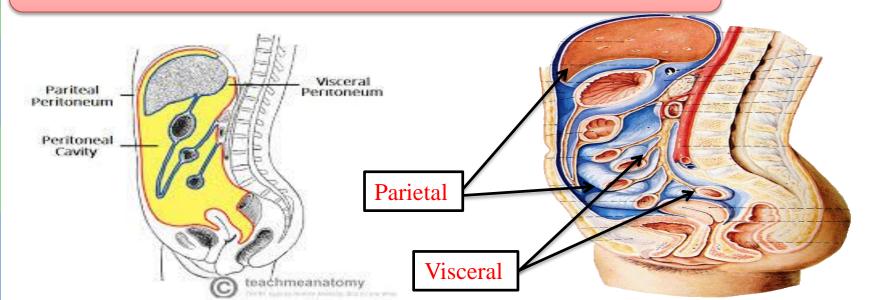
# The peritoneum

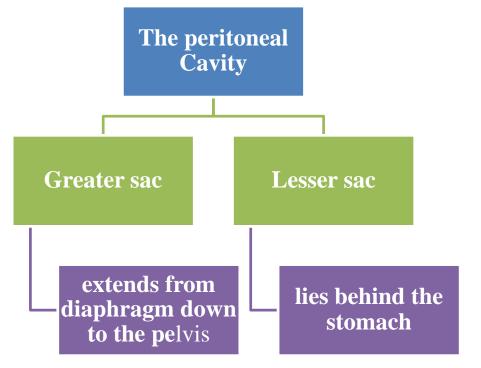


### Is a thin serous membrane divided to:



peritoneal cavity: The potential space between the two layers and it is the largest cavity in the body







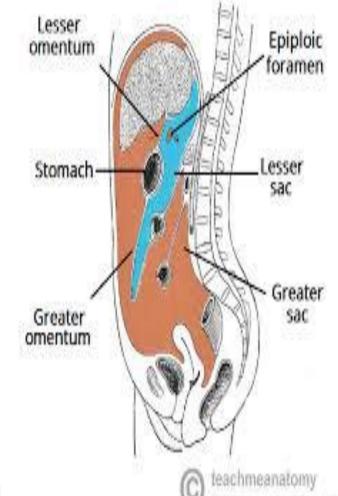
Both cavities are interconnected through the **epiploic** foramen.

<u>In male</u>: the peritoneum is a closed sac.

<u>In\_female</u>: the sac is not completely closed(Why?)\*\*

because it communicates with the exterior through the

uterine tubes, uterus and vagina



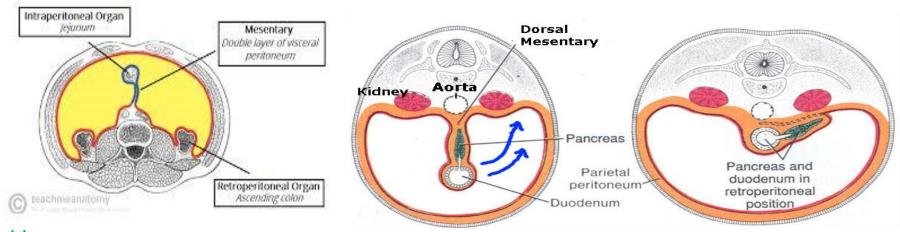
<sup>\*\*</sup>The abdominal ostia of the **uterine tubes** opens into the peritoneal cavity providing a potential pathway between the female genital tract and the peritoneum.

## Intraperitoneal and retroperitoneal



describe the relationship between various organs and their peritoneal covering

	Intraperitoneal	Extraperitoneal (retroperitoneal)
structure	nearly totally covered by visceral peritoneum	Behind the peritoneum, and partially covered by visceral peritoneum.
	has a supporting mesentery	no supporting mesentery
organs	stomach & 1 <sup>st</sup> part of duodenum, liver, spleen gallbladder, jejunum, ileum, cecum, appendix, transverse colon, sigmoid colon, uterus, and ovaries.	Primary retroperitoneal organs  Aorta, Inferior vena cava, kidneys, Suprarenal glands, urinary bladder, vagina, and rectum Secondary retroperitoneal organs** pancreas, duodenum, ascending and descending colon.

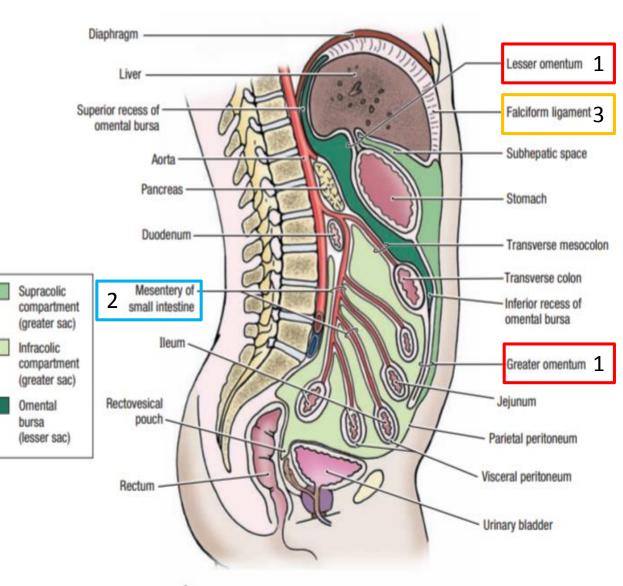


develop in mesenteries, but get pushed against the body wall (parietal peritoneum) during growth so that only half of their surface is covered by peritoneum

### Folds of the omentum



- Types of folds:
- 1) Omenta.
- 2) Mesenteries.
- 3) Ligaments.
- -The peritoneal folds all of them are double layers (two layers), and they permit blood, lymph vessels, and nerves to reach the viscera.



A. Right Lateral View

## Peritoneal folds

### **OMENTA**



(Two layered fold of peritoneum connecting the stomach to another viscus).

omenta	Greater omentum	Lesser omentum
connect	- the greater curvature of the stomach to the transverse colon.	- the <u>lesser curvature</u> of the stomach to the <u>liver</u> .
Description And course	<ul> <li>The largest peritoneal fold, with cribriform appearance, contains some adipose tissue.</li> <li>It consists of a double sheet of peritoneum, folded on itself so that it is made up of four layers (2 anterior layers + 2 posterior layers).</li> <li>The two layers which descend from the greater curve of the stomach and commencement of the duodenum, pass downward in front of the small intestines, then turn upon themselves, and ascend to the transverse colon, where they separate and enclose it.</li> </ul>	<ul> <li>It is continuous with the two layers of peritoneum which cover the anterior &amp; posterior surfaces of stomach and 1st part of the duodenum.</li> <li>Ascend as a double fold to the porta hepatis of liver, and fissure for ligamentum venosum.</li> </ul>
borders	<ul> <li>Its left border is continuous with the gastrosplenic ligament.</li> <li>Its right border extends as far as the commencement(the beginning) of the duodenum</li> </ul>	<ul> <li>To the left of porta hepatis it is carried to the diaphragm.</li> <li>Its right border is a free margin; constitutes the anterior boundary of the epiploic foramen.</li> </ul>
Contents between the two layers of omenta	- the anastomosis between the right and left gastroepiploic vessels.	-Close to the right free margin, are the hepatic artery, common bile duct, portal vein, lymphatics, and hepatic plexus of nerves.  - At the attachment to the stomach, run the right and left gastric vessels.

## Lesser sac & epiploic foramen



### Omental bursa (lesser sac)

- It is a part of the peritonial cavity behind the stomach.
- Boundaries of the omental bursa:

#### Anterior wall:

from above downward

- -by the caudate lobe of the liver.
- -the lesser omentum.
- -back of the stomach.
- -the anterior two layers of the greater omentum.

#### Posterior wall:

from below upward

- -by the posterior two layers of the greater omentum.
- -the transverse colon.
- -the ascending layer of the transverse mesocolon.
- -the upper surface of the pancreas.
- -the left suprarenal gland.
- -the upper end of the left kidney.

### **Epiploic foramen**

It is the communication between the greater and lesser sacs .

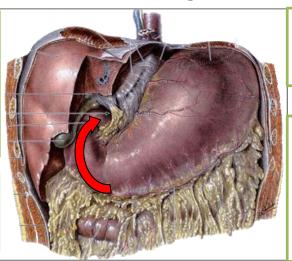
#### In front by

the free border of the lesser omentum,

with its contents: hepatic artery, common bile duct, and portal vein between its two layers.

#### **Behind by**

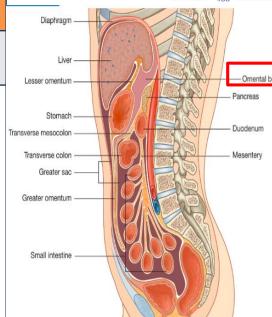
the peritoneum covering the inferior vena cava.



Above (roof) by the peritoneum on the caudate process of the liver.

#### Below (floor) by

the peritoneum covering the commencement of the duodenum and the hepatic artery, before ascending between the two layers of the lesser omentum.



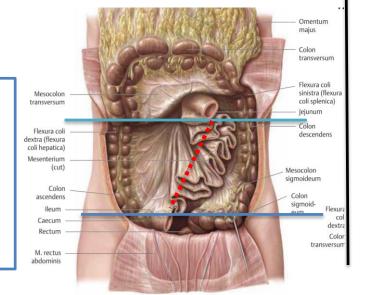
## Cont. peritoneal folds



#### **MESENTRIES**

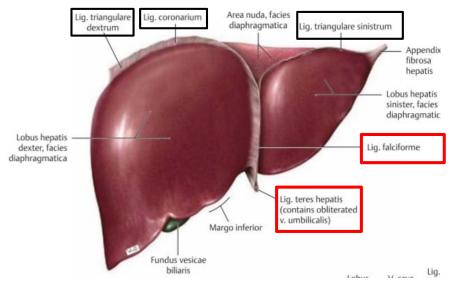
- Two-layered fold of peritoneum,
- suspends the small intestine from the posterior abdominal wall.
- Broad and a fan-shaped.
- Intestinal border: folded,7 m long.
- Root of mesentery: 15 cm long.
- Directed obliquely from duodenojejunal flexure at the level of left side of L2 to the ileocecal junction in the right iliac fossa at the level of right sacroiliac joint.

oblique from the left of L2 to the right of sacroiliac joint



#### **LIGAMENTS**

- Two-layered folds of peritoneum that attach solid viscera to the abdominal wall and diaphragm.
- Ligaments of liver:
- Falciform ligament of liver.
- Coronary ligament.
- Left and right triangular ligaments.
- Ligamentum teres.



## Nerve Supply of the Peritoneum



The parietal peritoneum

The visceral peritoneum

sensitive to pain, temperature, touch, and pressure.

#### Supplies by:

lower 6 thoracic and first lumbar nerves.

The central part of the diaphragmatic peritoneum is supplied by the phrenic nerves.

sensitive only to stretch and tearing.

#### **Supplies by:**

autonomic nerves that supply the viscera or traveling in the mesenteries

abdominal pain originating from the parietal peritoneum is Somatic type ,Usually severe ,Accurately localized

**Parietal Peritoneum** 

**Peritoneal Pain** 

#### **Visceral Peritoneum**

including the mesenteries, is innervated by autonomic nerves.

It is due to Stretch caused by over distension of a viscus and pulling on a mesentery That gives rise to the sensation of pain.

[leading to poorly localized, poorly characterized pain (dull, cramping, aching)

**Peritoneal Dialysis** 

Because the peritoneum is a semi permeable membrane:

It allows transfer of substances across itself.

It has been made use of in patients with acute renal insufficiency.







### **MCQs**



1-which one of the following organs totally coverd with peritoneum?

A.1st part of duodenum

**B.kidney** 

C.ascending colon

2-which one of the following organs is a primarily retroperitoneal organ?

A.pancreas

B.aorta

C.Duodenum

3-which one of the followings is the right border of the lesser omentum?

A. The gastric arteries

B.the epiploic foramen

**C.gastrosplenic ligament** 

4-the left border of the greater omentum is continuous with:

A.epiploic foramen

B.bile duct

C. Gasrtosplenic ligament

5-anterior to epiploic foramen will be:

A.free border of the lesser omentum

B.inferior vena cava

C.both a and b

6-the mesentry start at what level?

A. T3

B.L1

C.L2

7-nerve supply to the parietal peritoneum is :

A.Autonomic nerve supply.

B.lower 6 thoracic and first lumbar nerves

C.both a & b

8-the greater and lesser sacs are interconnected through:

A.epiploic foramen

**B.gastrosplenic ligament** 

**C.falciform ligament** 

9-anterior to the omental bursa will be:

A.posterior layers of greater omentum

**B.lesser omentum** 

**C.Transverse colon** 

10-which one of the followings is half coverd by peritoneum:

A.duodenum

**B.prostate** 

C.Rectum

11-the central part of the diaphragmatic peritoneum is supplied by :

A. Phrenic nerves

B. autonomic nerves

C.lumbar nerves

12-the visceral peritoneum is sensitive to:

A.pain

B. strech

C.Temprature.

13-the parietal peritoneum pain is usually:

A.dull

**B.localized** 

C.both a & b

14-the largest peritoneum folds is :

A.greate sac

B.greater omentum

C. Mesentery



# GOOD LUCK

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