

Duodenum

Stomach

Colon

Jejunum

## 4-ANATOMY OF SMALL INTESTINES

Ileum

# MIND MAP

Peritoneum — Anatomy of small intestines

Layers of abdominal cavity

Relations

Parts

Duodenum

Comparison

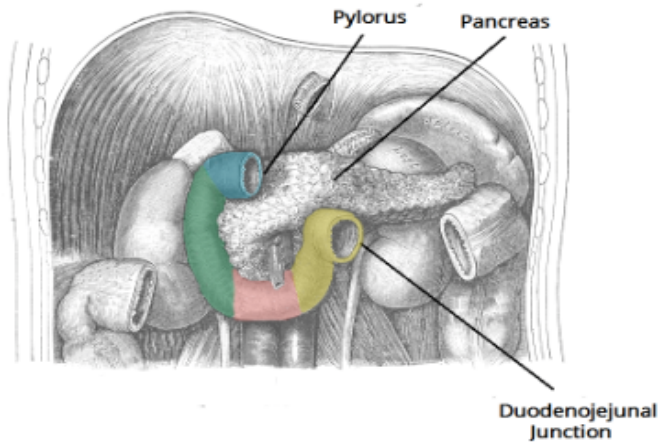
Jejunum

Ileum

Blood supply

Embryological origin

- Parts of the Duodenum**
- Superior
  - Descending
  - Inferior
  - Ascending



YouTube

[Dr.Ahmed Kamal small intestine](#)

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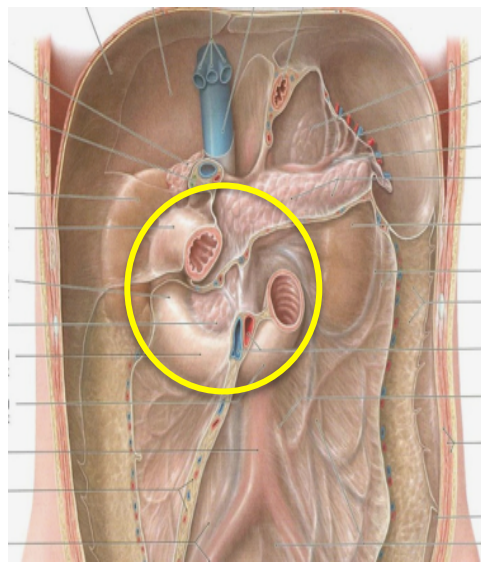
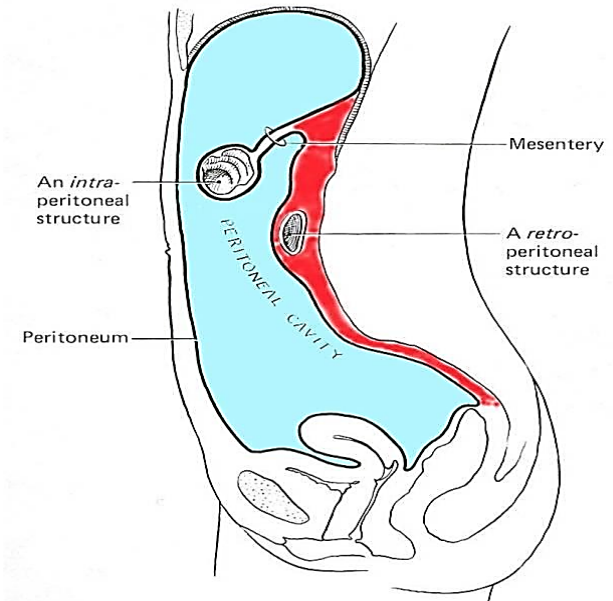
# Peritoneum

\*Will be discuss in details in omentum lecture

- Fluid filled sac in the abdominal cavity.
- Some Structures of the abdomen are invaginated into it.
- Function: facilitate movement (lubricate) of the abdominal structures.

Peritoneal structures: stomach, liver, jejunum, ileum, transverse colon.

Retroperitoneal structures: **duodenum**, pancreas, ascending colon, descending colon, kidneys, aorta, inferior vena cava,...etc.



## small intestine

**DUODENUM**

Retro peritoneal

**NO MESENTERY**

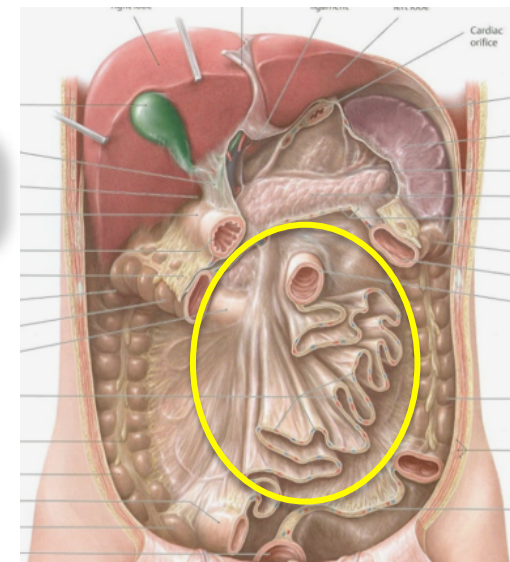
**FIXED**

**JEJUNUM & ILEUM**

Peritoneal

**WITH MESENTERY**

**FREE (MOVABLE)**







# Duodenum

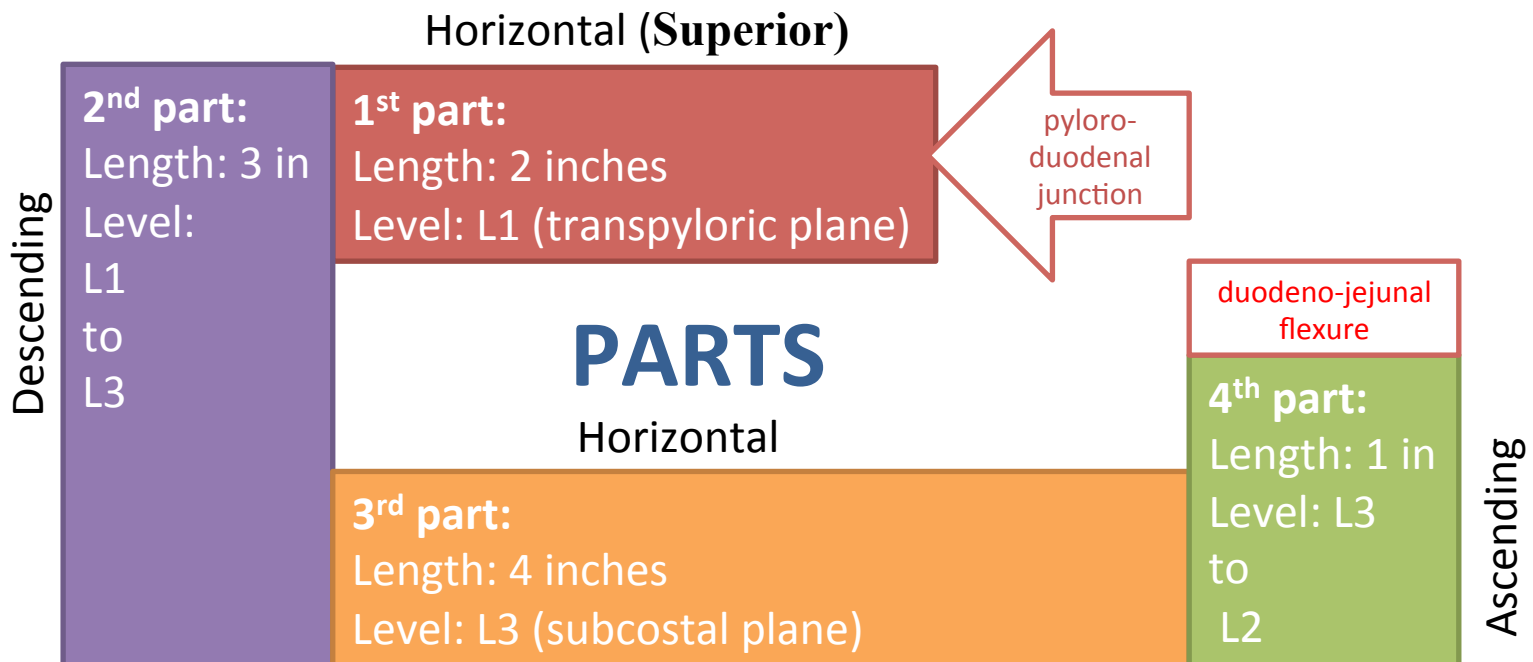
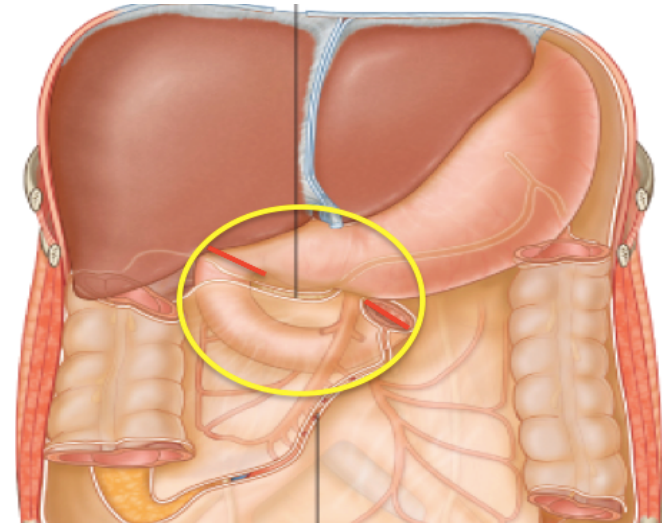
C-shaped loop, 10 inches long, begins at **pyloro-duodenal junction**, ends at **duodeno-jejunal flexure**, retroperitoneal, and has 4 parts.

**Embryological origin:** foregut, and midgut

**Arterial supply:** coeliac, and superior mesenteric

**Venous Drainage to :** Superior mesenteric & Portal veins.

**Lymphatic drainage:** coeliac, and superior mesenteric



# 1<sup>st</sup> part relations:

Most common site for ulcer

**Posterior** (most commonly injured during rupture of ulcer):

- Bile duct.
- Gastroduodenal artery.
- Portal vein.
- Neck of pancreas.

**Anterior:**  
Liver

# 2<sup>nd</sup> part relations:

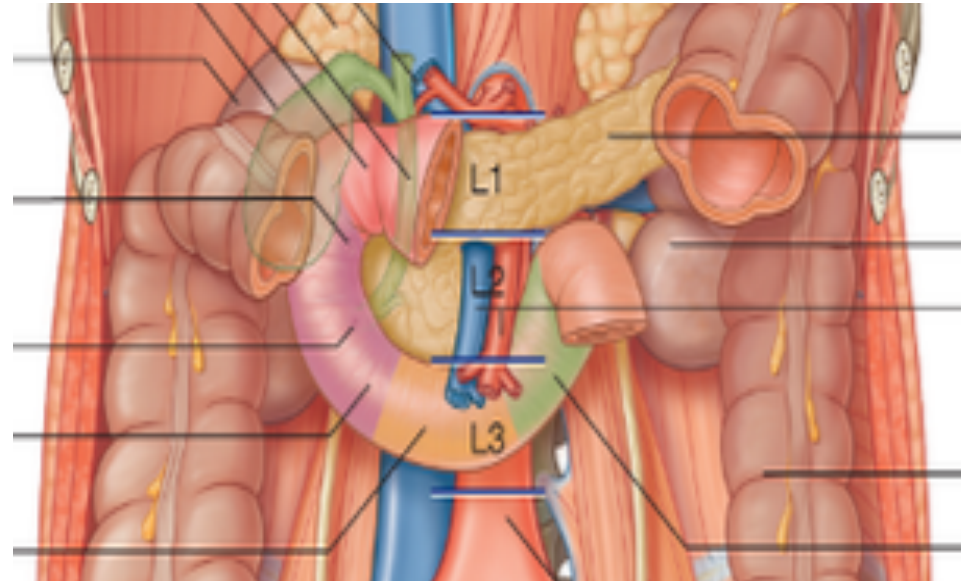
**Lateral:**  
Right colic flexure.

**Posterior:**  
Right kidney.

**Medial:**  
Pancreas.

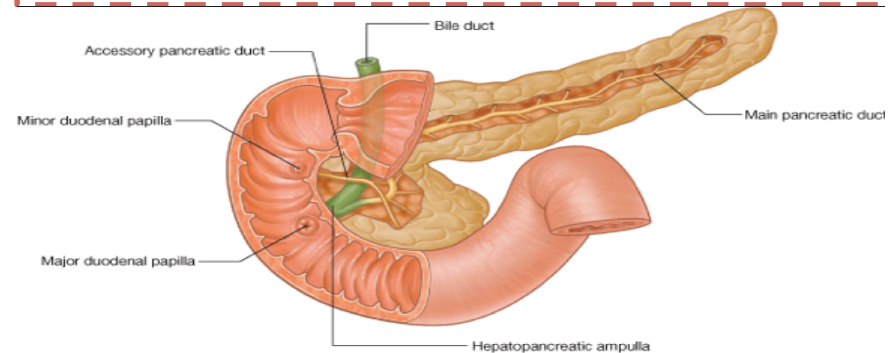
**Anterior:**

- Liver.
- Transverse colon.
- Other parts of small intestines.



Openings in 2<sup>nd</sup> part of duodenum:

- Common opening of bile duct & main pancreatic duct: on summit of **major duodenal papilla**.
- Opening of accessory pancreatic duct (one inch higher): on summit of **minor duodenal papilla**.





## 3<sup>rd</sup> part relations:

### Anterior:

- Other parts of small intestines.
- Superior mesenteric vessels.

### Posterior:

- Right psoas major.
- Inferior vena cava.
- Abdominal aorta.
- Inferior mesenteric vessels.

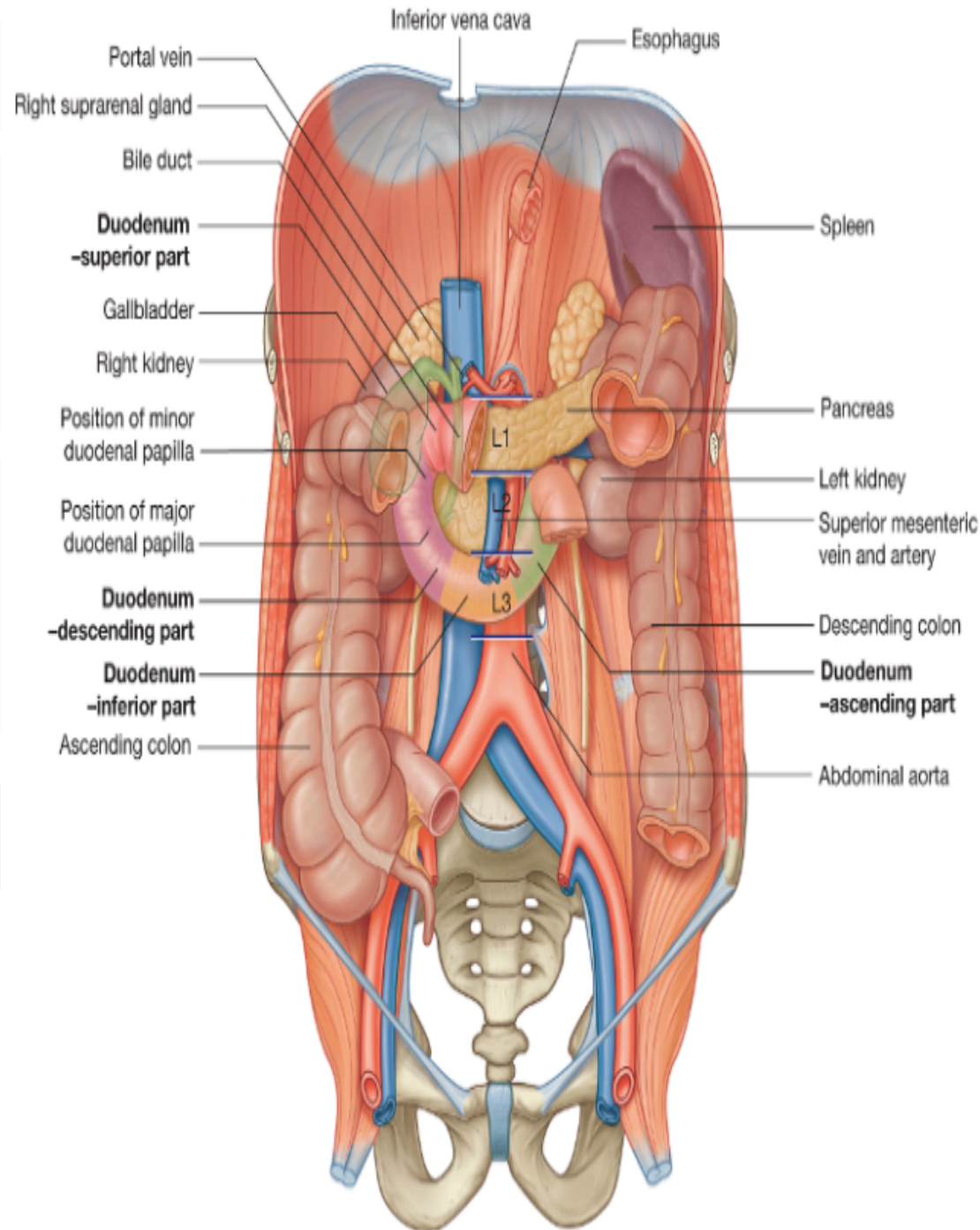
## 4<sup>th</sup> part relations:

### Anterior:

Other parts of small intestines

### Posterior:

Left psoas major



# Jejunum and ileum

Coiled tube, 6 meters(20 feet) long, begins at **duodeno-jejunal flexure**, terminate at **ileo-caecal junction**, and are **peritoneal** organs (fold is called **mesentery of small intestines**).

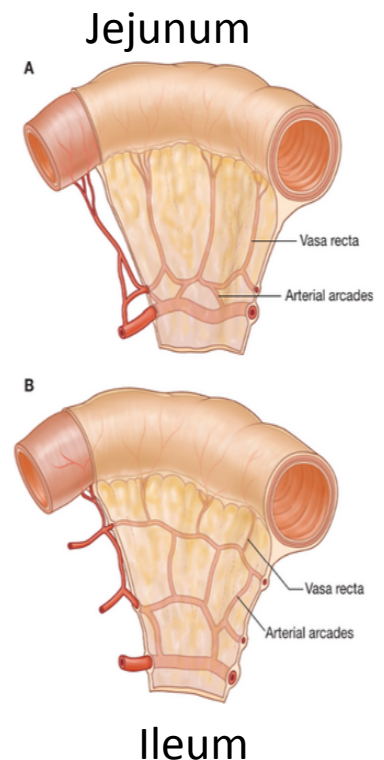
**Embryological origin:** midgut

**Arterial supply:** superior mesenteric artery & vein

**Lymphatic drainage:** superior mesenteric lymph nodes

Jejunum		Ileum
Shorter (proximal 2/5)	<b>Length</b>	Longer (distal 3/5)
Wider	<b>Diameter</b>	Narrower
Thicker (more plicae circulares)*	<b>Wall</b>	Thinner (less plica circulares)
Dark red (more vascular)	<b>Appearance</b>	Light red (less vascular)
Less arcades (long terminal branches)	<b>Vessels</b>	More arcades (short terminal branches)
Small amount away intestinal border	<b>Mesenteric fat</b>	Large amount near intestinal border
Few aggregations	<b>Lymphoid tissue</b>	Numerous aggregations (Peyer's patches)

\* Folded of the wall to increase surface area





# MCQs

**1- Which one of the following is anterior to the third part of duodenum?**

- A. Superior mesenteric vessels.
- B. Right kidney.
- C. Right posas major muscle.
- D. Abdominal aorta.

**2- Which one of the following structures could be injured in case of perforated duodenal ulcer?**

- A. Right kidney.
- B. Right colic flexure.
- C. Gastroduodenal artery.
- D. Inferior mesenteric vessels.

**3- which part of duodenum is descending?**

- A. 1<sup>st</sup> part.
- B. 2<sup>nd</sup> part.
- C. 3<sup>rd</sup> part.
- D. 4<sup>th</sup> part.

**4- Blood supply to the duodenum comes from?**

- A. Superior mesenteric artery.
- B. Coeliac artery.
- C. Inferior mesenteric artery.
- D. A & B.

**5- embryological origin of jejunum and ileum is ?**

- A. Foregut.
- B. Midgut.
- C. Hindgut.
- D. Ectoderm.

**6- Regarding the lymphoid tissue in small intestines which is NOT correct?**

- A. Peyer's patches can be found only in the ileum.
- B. Few aggregations can be found in the jejunum.
- C. Aggregations are more in the ileum.
- D. Peyer's patches can be found throughout the small intestines.



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# GOOD LUCK

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