

•ANATOMY OF THE SMALL INTESTINE

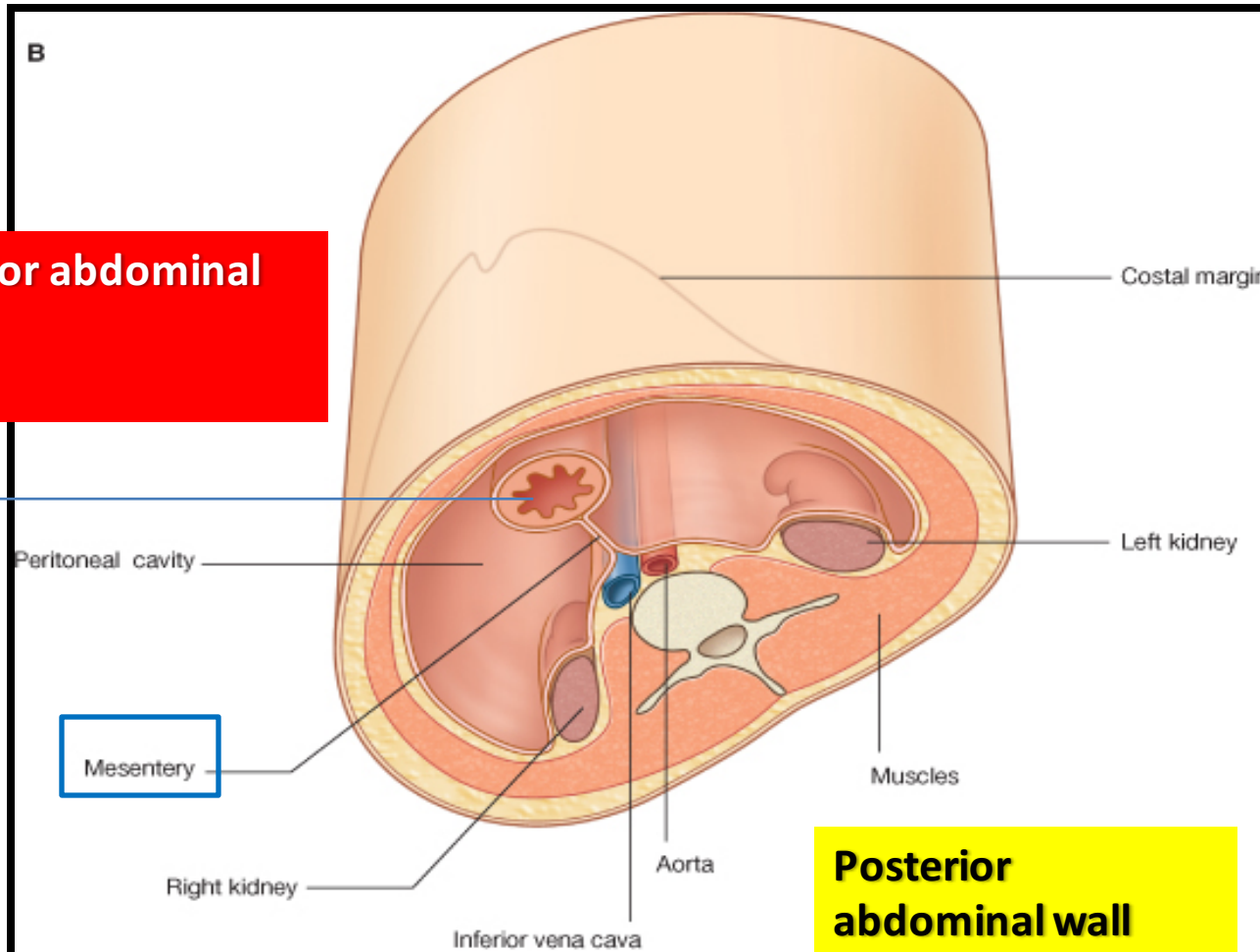
Dr. Jamila El-Medany

OBJECTIVES

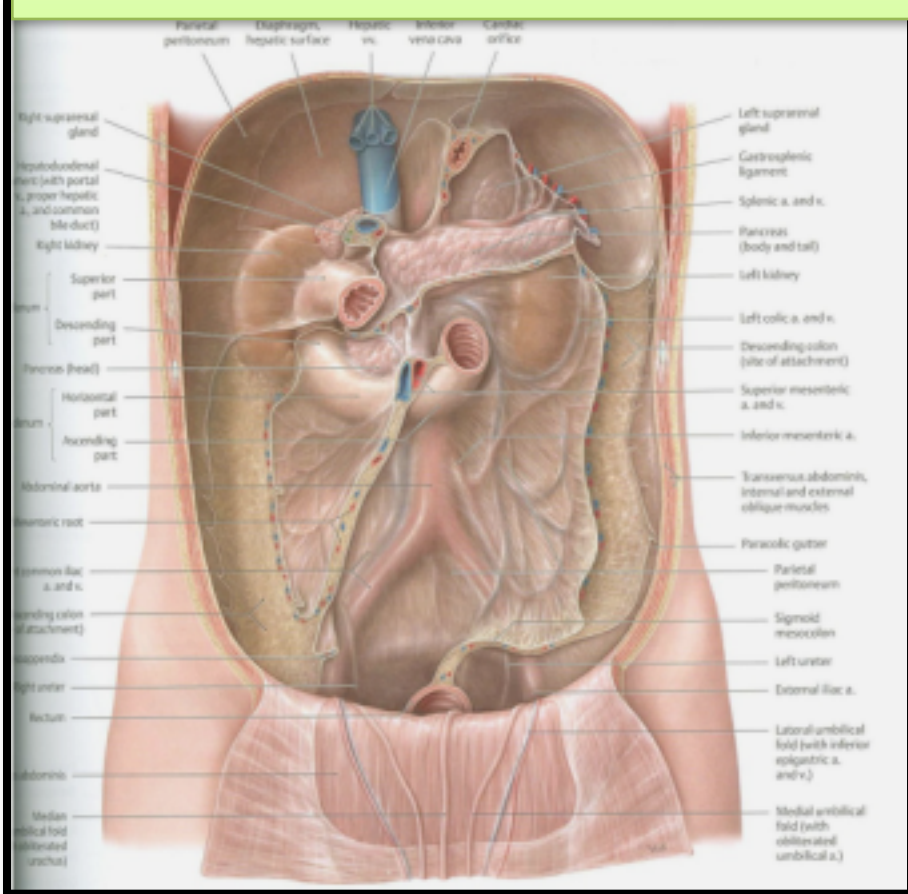
At the end of the lecture, students should:

- ❑ List the different parts of small intestine.
- ❑ Describe the anatomy of duodenum, jejunum & ileum regarding: *the shape, length, site of beginning & termination, peritoneal covering, arterial supply & lymphatic drainage.*
- ❑ Differentiate between each part of duodenum regarding *the length, level & relations.*
- ❑ Differentiate between the jejunum & ileum regarding *the characteristic anatomical features of each of them.*

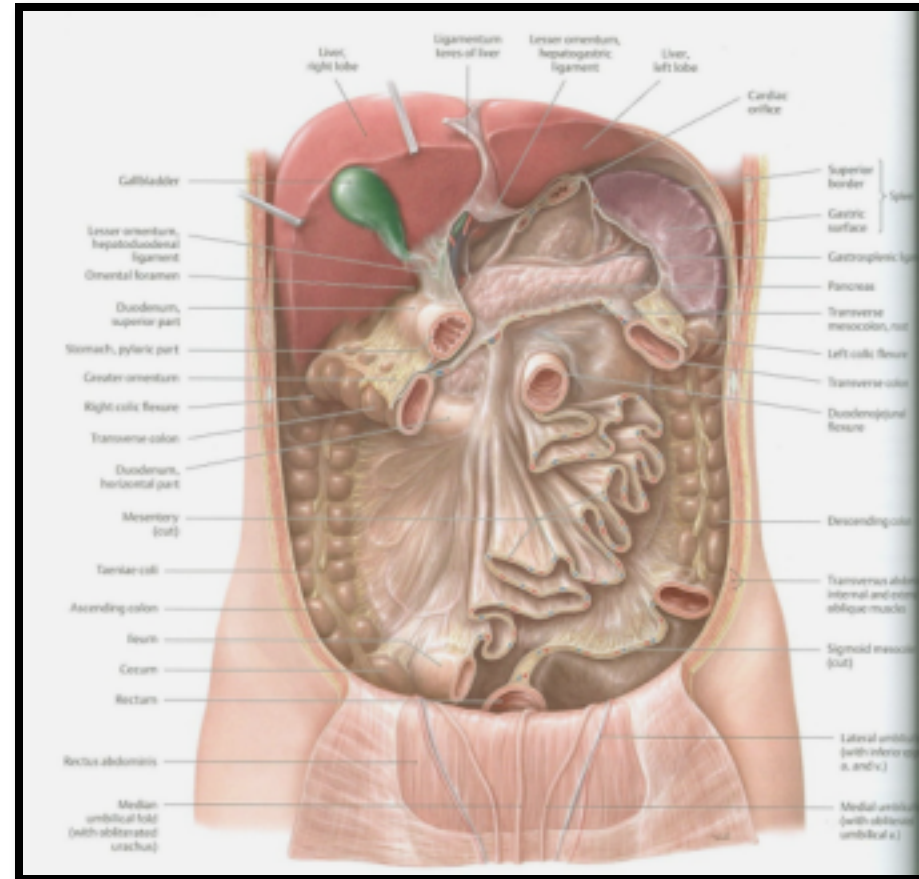
What is MESENTERY?



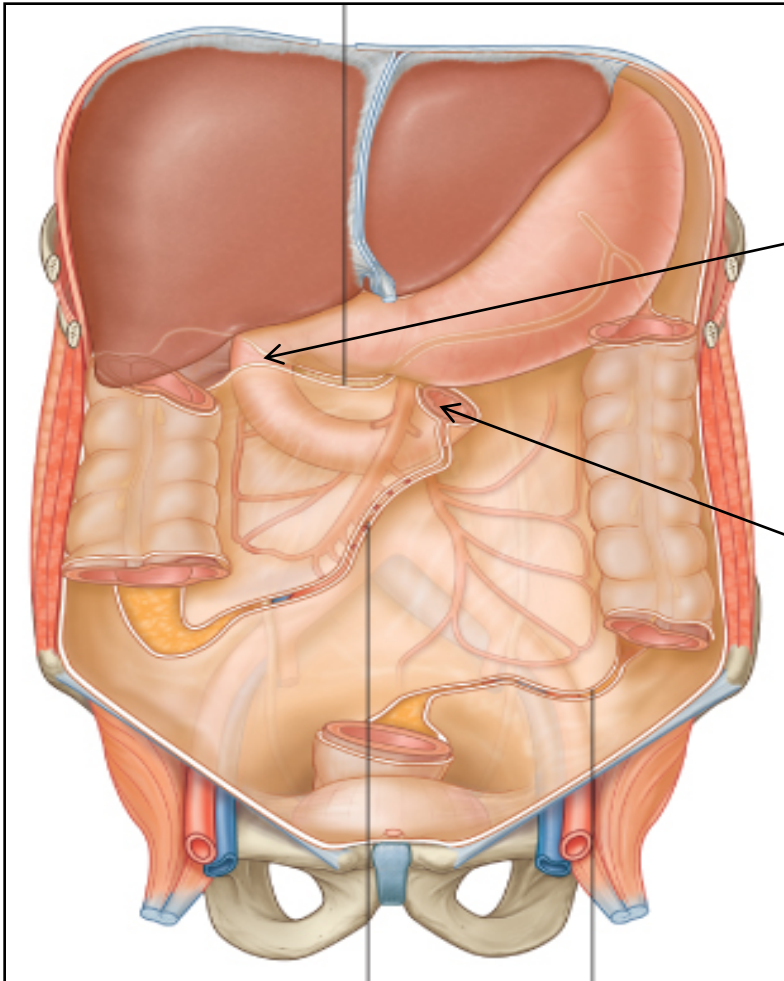
FIXED (Retro peritoneal) PART (NO MESENTERY) DUODENUM



FREE (MOVABLE) PART (WITH MESENTERY) JEJUNUM & ILEUM

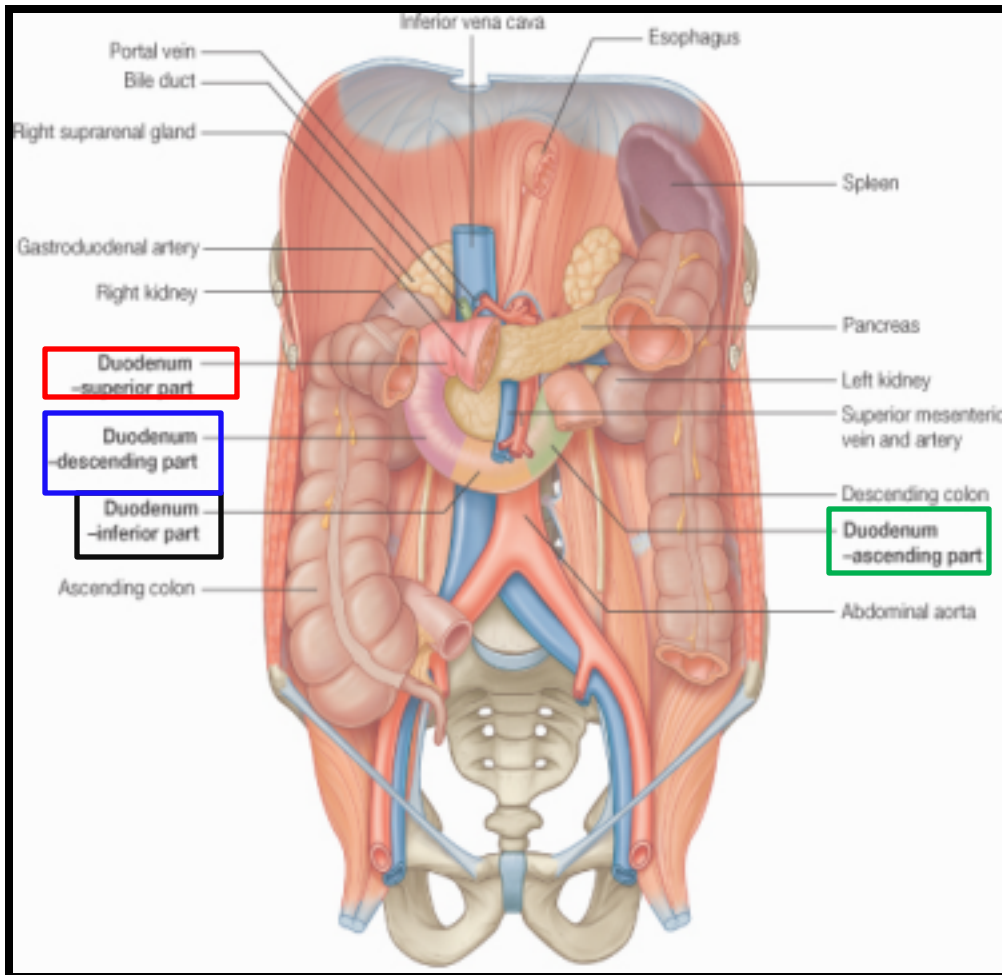


DUODENUM



- ❑ **SHAPE:** C-shaped loop
- ❑ **LENGTH:** 10 inches
- ❑ **BEGINNING:** at pyloro-duodenal junction
- ❑ **TERMINATION:** at duodeno-jejunal flexure
- ❑ **PERITONEAL COVERING:** retroperitoneal

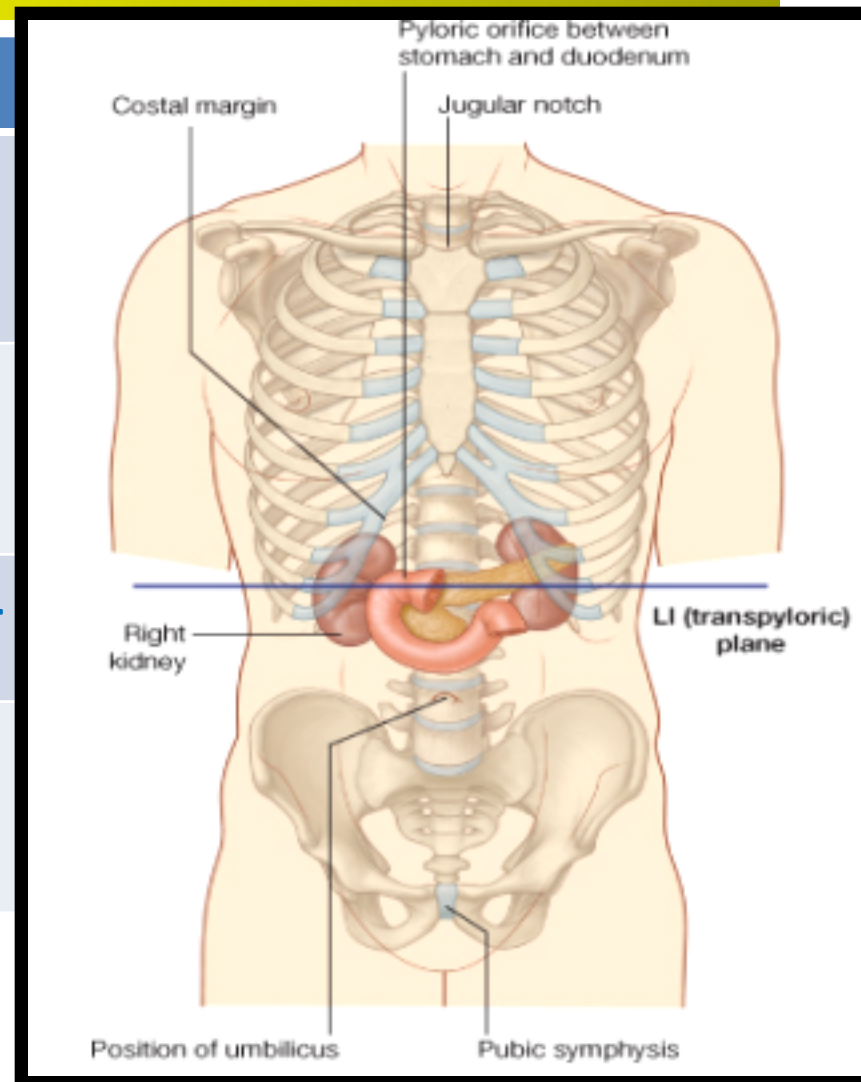
PARTS



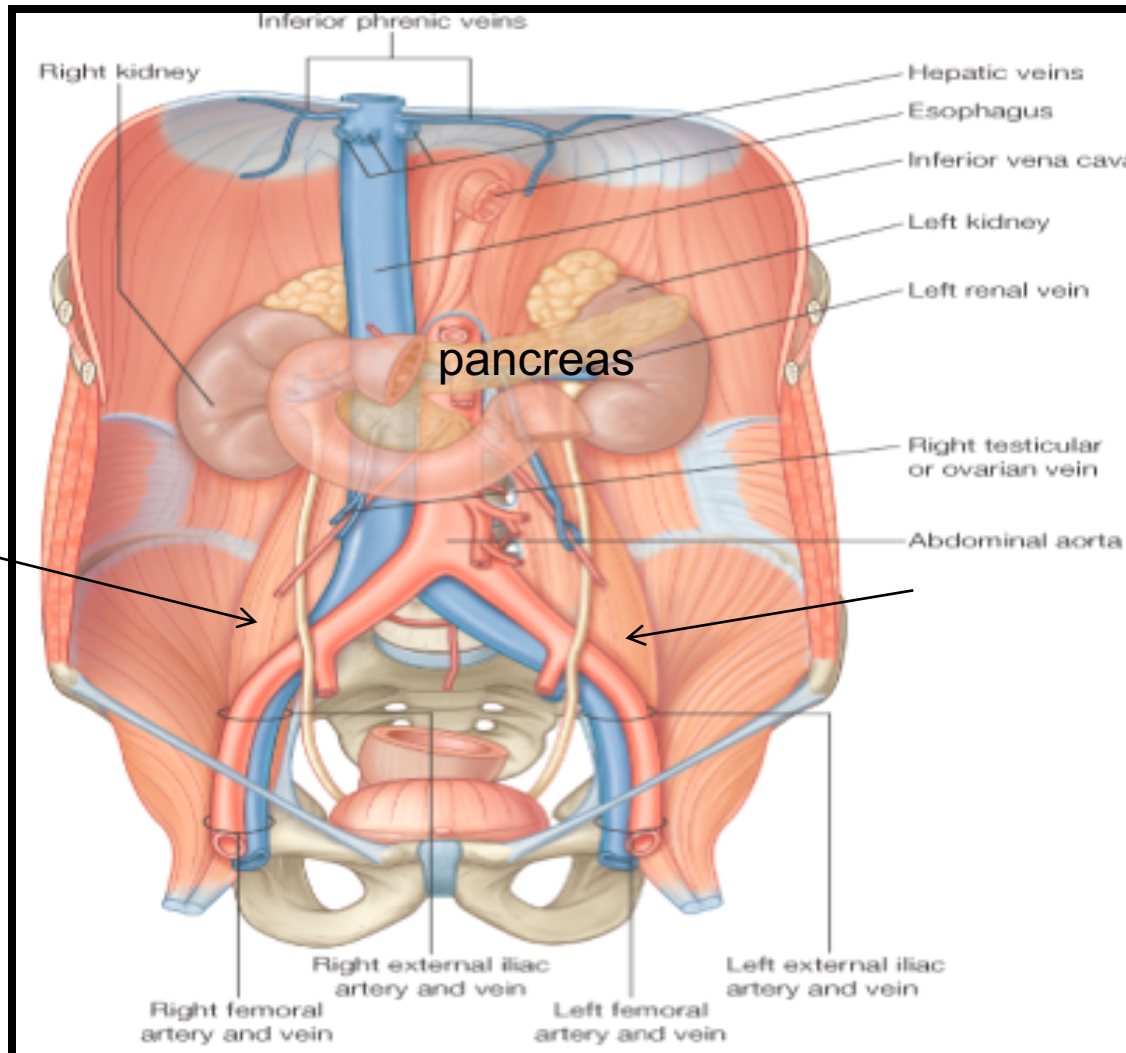
- The duodenum is divided into (4) parts:
- 1st : **Superior**.
- 2nd : **Descending (vertical)**.
- 3rd : **Inferior (Horizontal)**
- 4th : **Ascending**

LENGTH – SURFACE ANATOMY

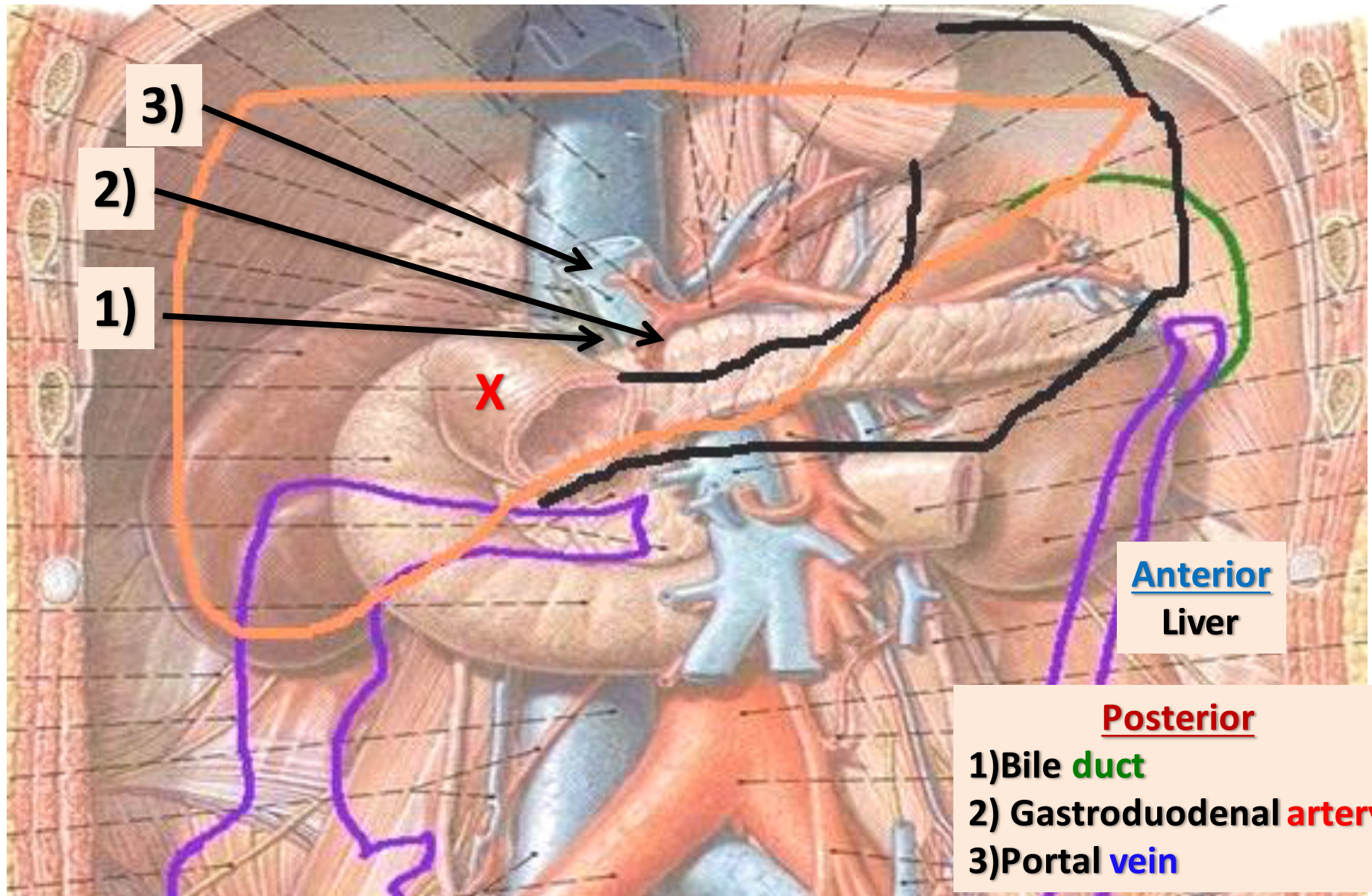
PART	LENGTH	LEVEL
FIRST PART (Superior)	2 INCHES	L1 (Transpyloric Plane)
SECOND PART (Descending)	3 INCHES	DESCENDS FROM L1 TO L3
THIRD PART (Horizontal)	4 INCHES	L3 (SUBCOTAL PLANE)
FOURTH PART (Ascending)	1 INCHES	ASCENDS FROM L3 TO L2



Structures Related



RELATIONS OF FIRST PART



RELATIONS OF SECOND PART

Anterior

-) Liver
-) Transverse Colon
-) Small intestine

Posterior

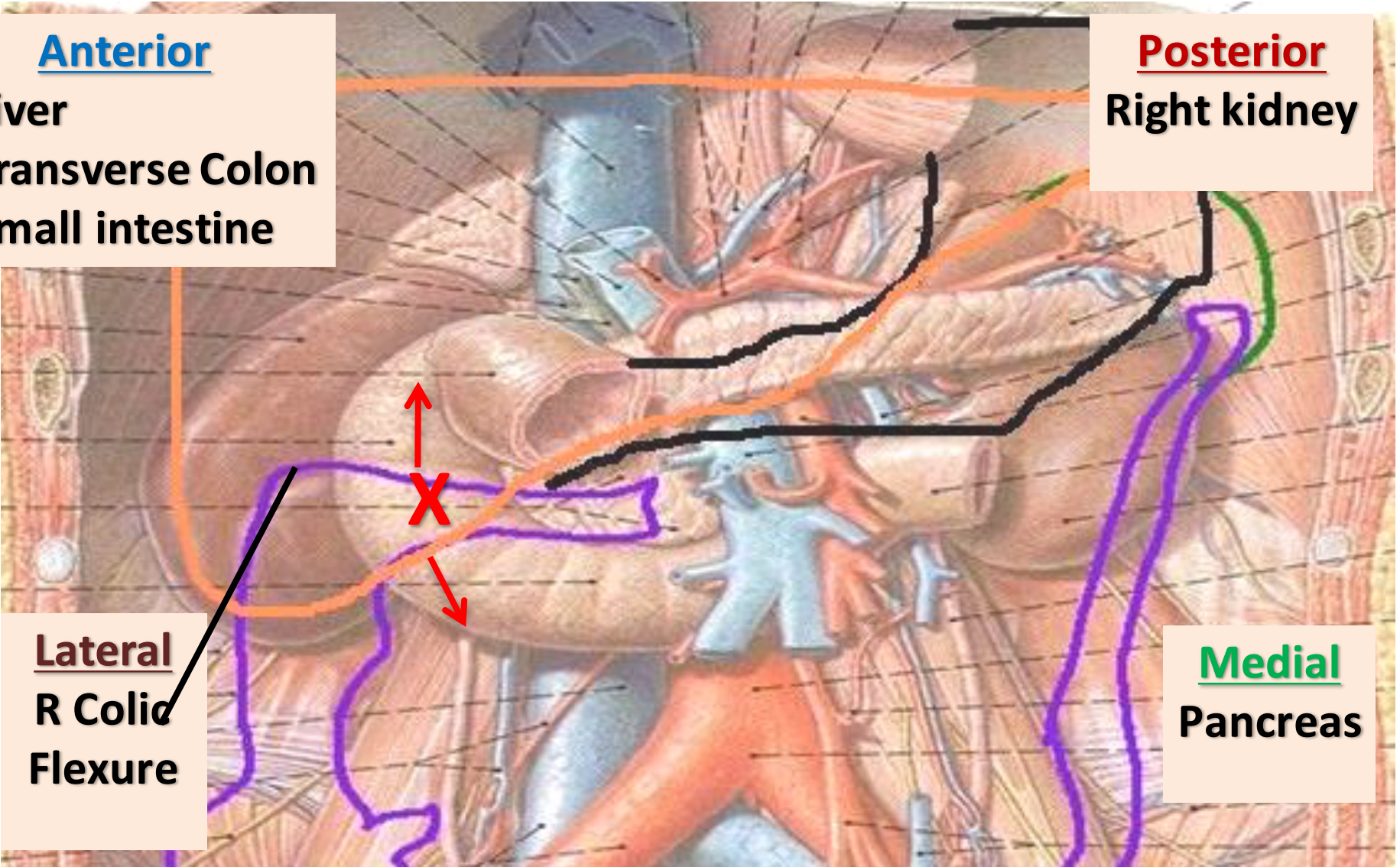
Right kidney

Lateral

R Colic Flexure

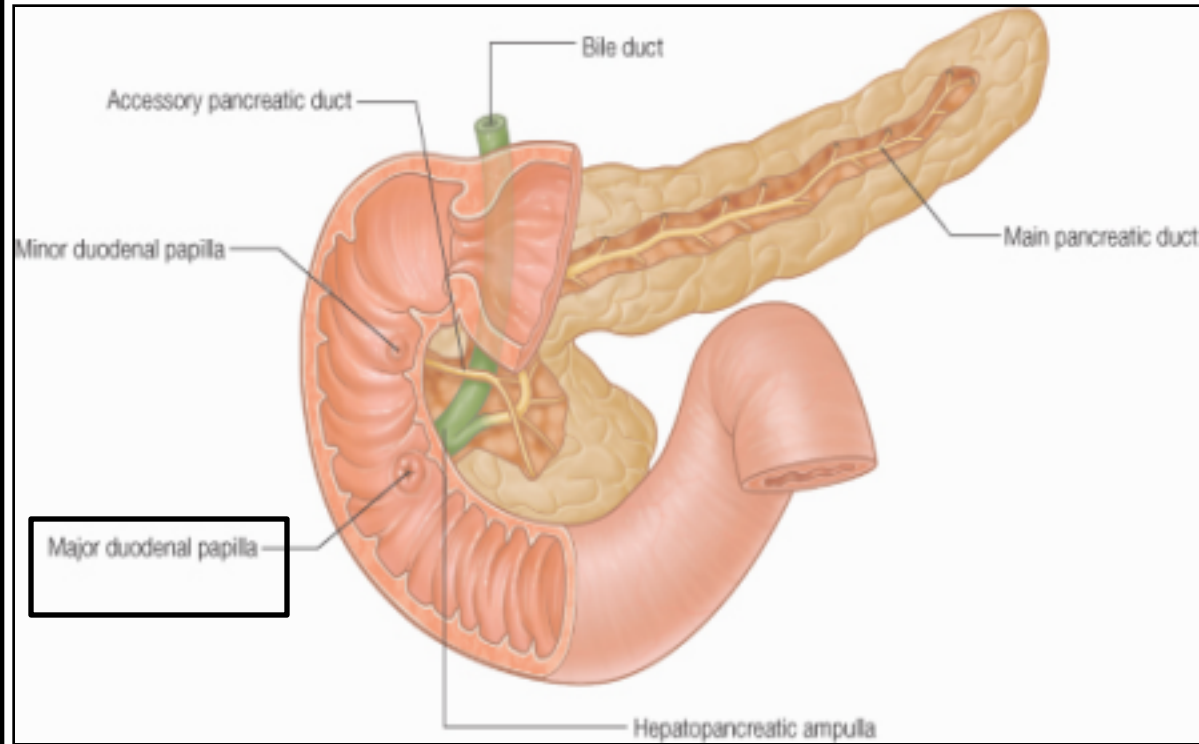
Medial

Pancreas

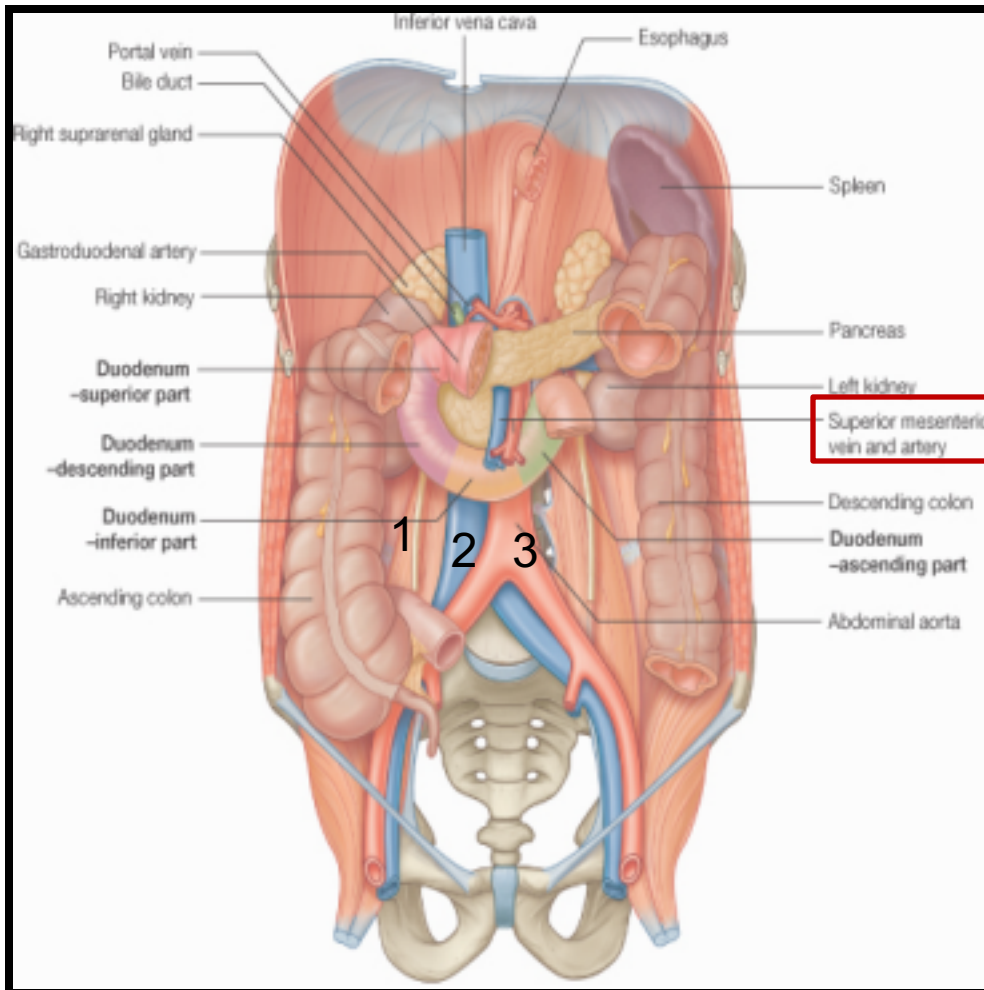


OPENINGS IN SECOND PART OF DUODENUM

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



RELATIONS OF THIRD PART



□ Anterior:

a) Small intestine

b) Superior mesenteric vessels

□ Posterior:

1) Right psoas major

2) Inferior vena cava

3) Abdominal aorta

4) Inferior mesenteric vessels.

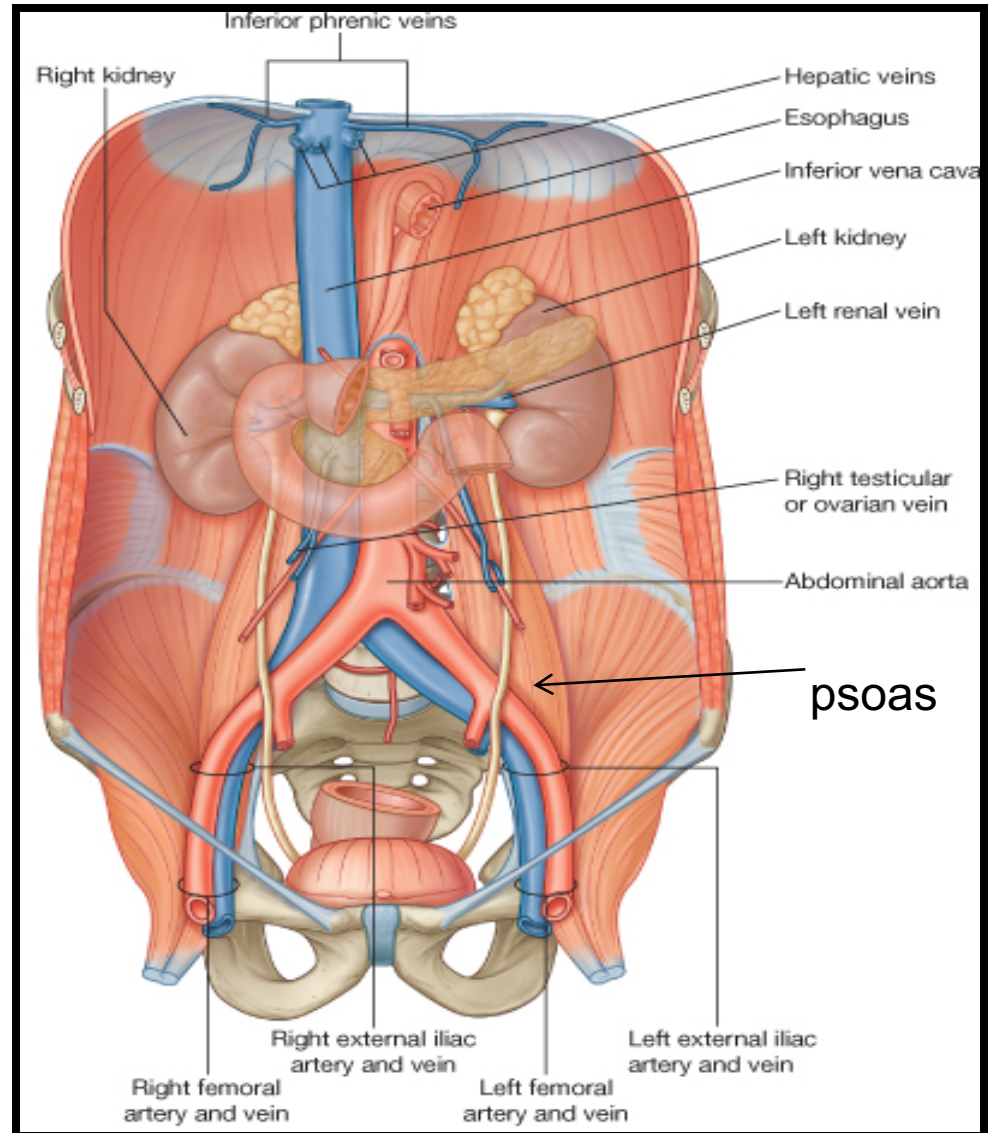
RELATIONS OF FOURTH PART

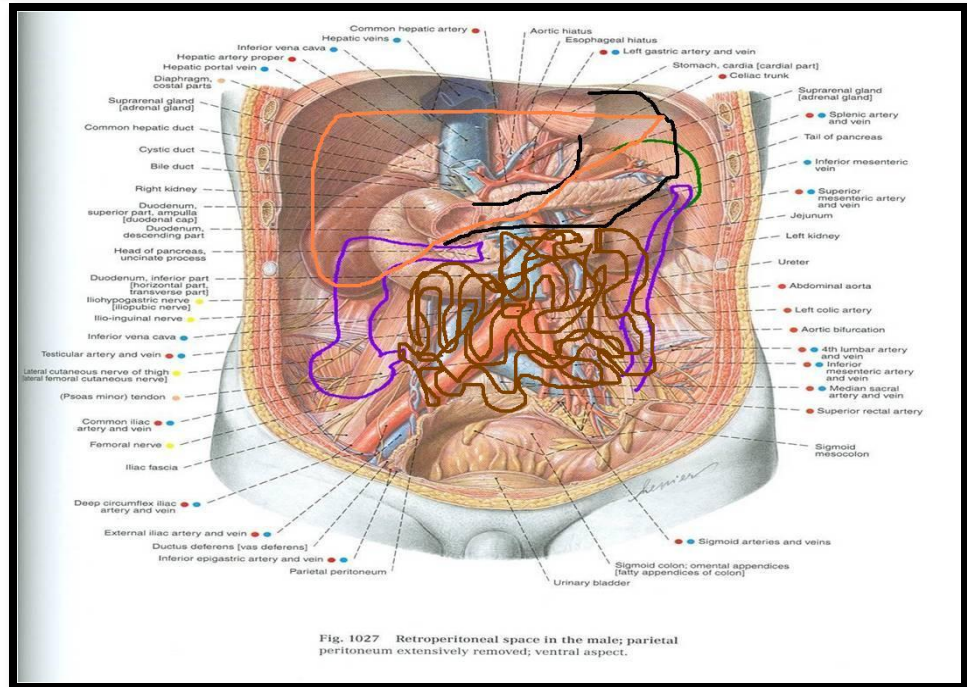
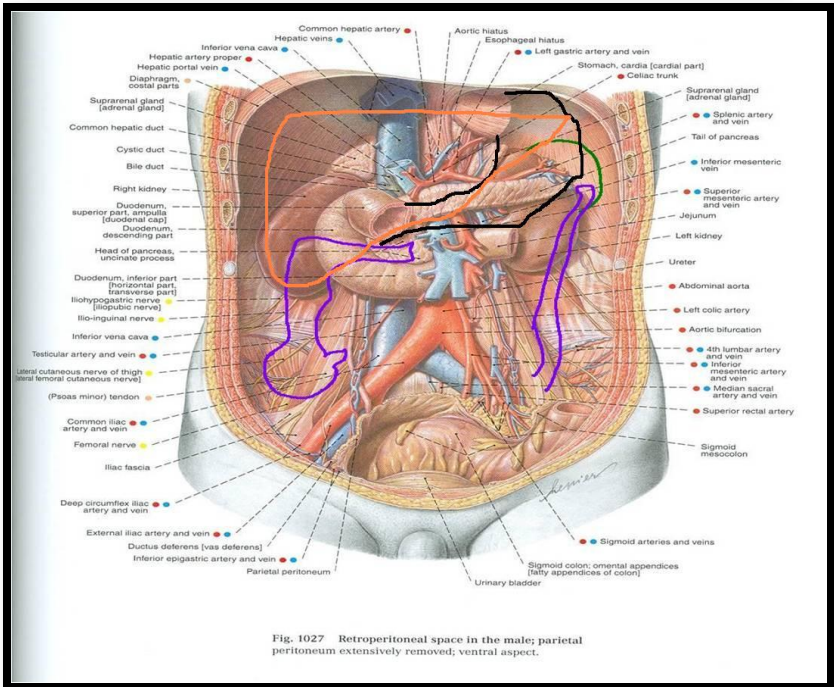
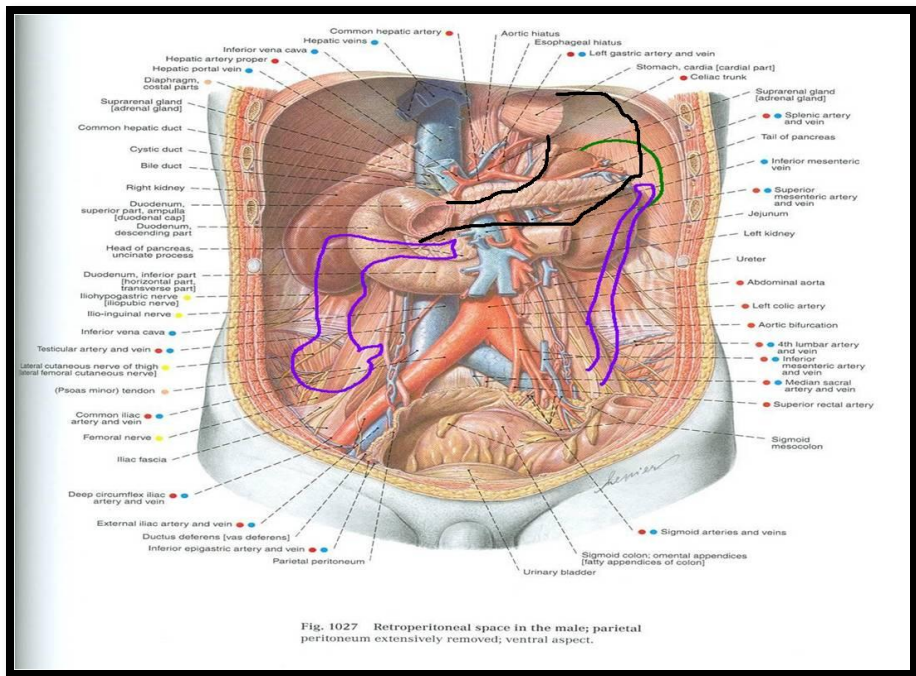
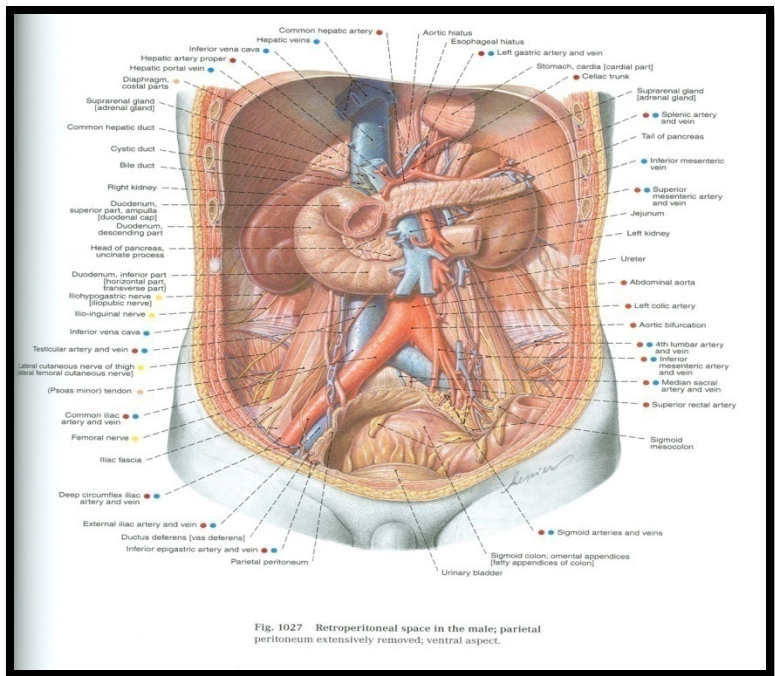
□ **Anterior:**

Small intestine

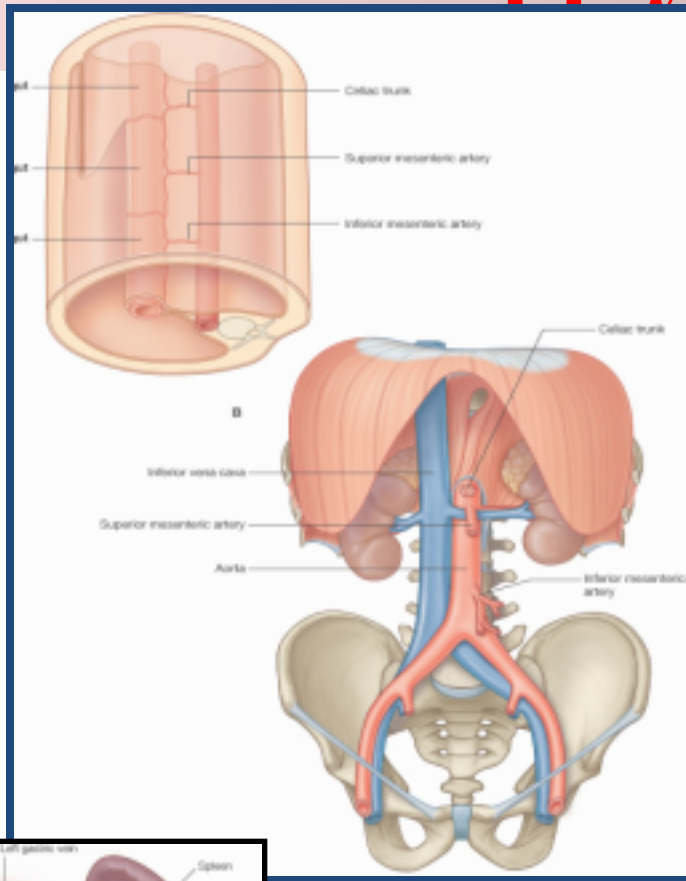
□ **Posterior:**

Left psoas major



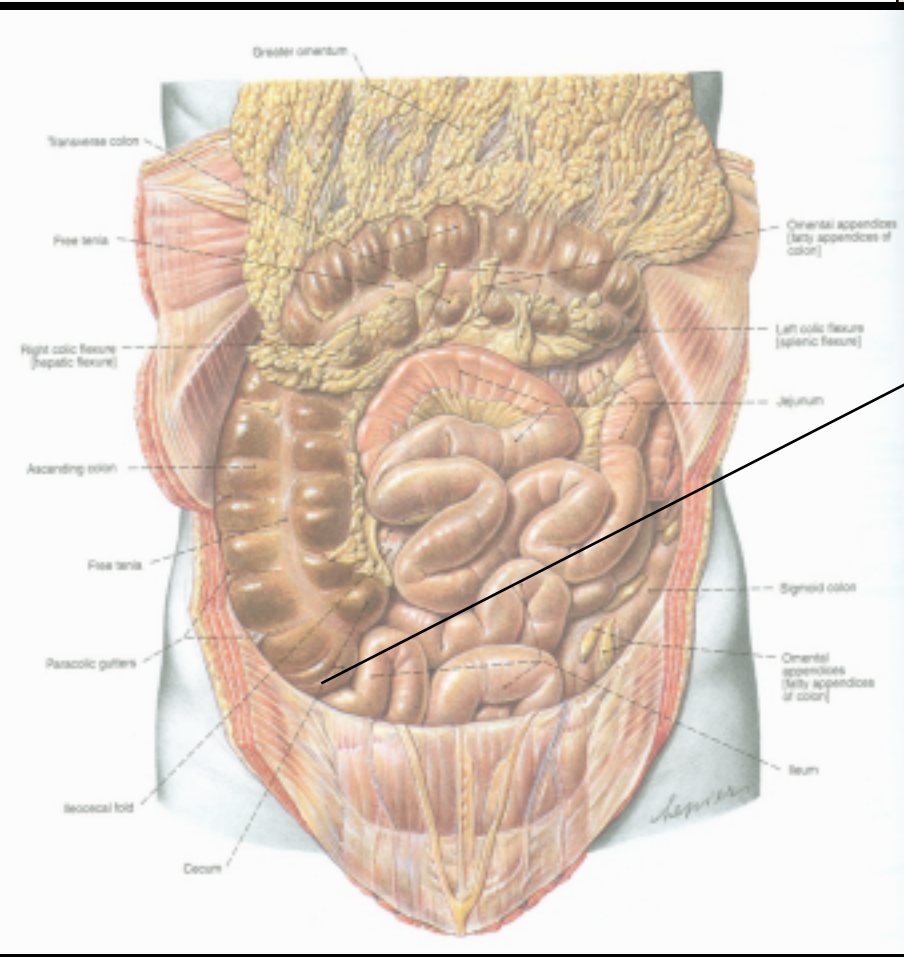


Blood Supply & Lymph drainage

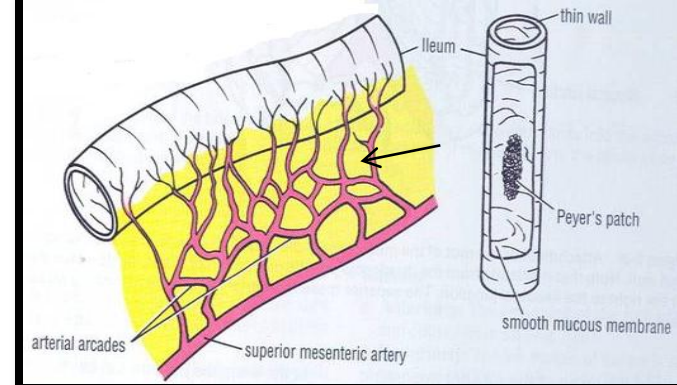
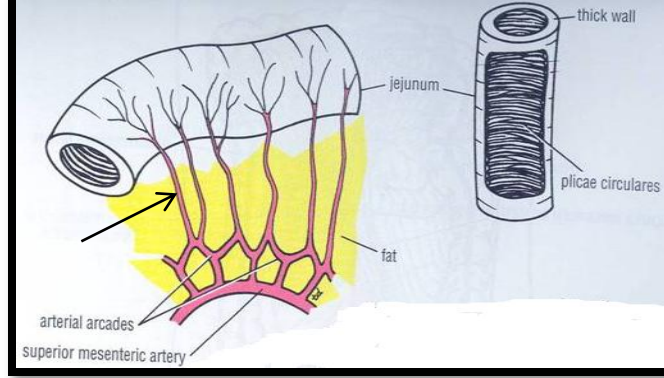


- ❑ Because the duodenum is derived from both: Foregut & Midgut,
- ❑ It has its Arterial Supply from :
 - ❑ Celiac & Superior mesenteric arteries.
 - ❑ Venous Drainage to :
 - ❑ Superior mesenteric & Portal veins.
 - ❑ **LYMPHATIC DRAINAGE:**
 - ❑ Celiac & Superior mesenteric lymph nodes.

JEJUNUM & ILEUM



- ❑ **SHAPE:** Coiled tube
- ❑ **LENGTH:** 6 meters (20 feet)
- ❑ **BEGINNING:** at Duodeno-jejunal flexure
- ❑ **TERMINATION:** at Ileocaecal junction
- ❑ **EMBRYOLOGICAL ORIGIN:** Midgut
- ❑ **Blood SUPPLY:** Superior mesenteric A & V
- ❑ **LYMPHATIC DRAINAGE:** Superior mesenteric lymph nodes



	JEJUNUM	ILEUM
LENGTH	Shorter (proximal 2/5) of SI	Longer (distal 3/5) of SI
DIAMETER	Wider	Narrower
WALL	Thicker (more plicae circulares)	Thinner (less plicae circulares)
APPEARANCE	Dark red (more vascular)	Light red (less vascular)
VESSELS	High & Less arcades (long terminal branches)	Low & More arcades (short terminal branches)
MESENTERIC FAT	Small amount & away from intestinal border	Large amount & close to intestinal border
LYMPHOID TISSUE	Few aggregations	Numerous aggregations (Peyer's patches)

THANK YOU