

Checklist GI Lab 2

- 1- Esophagus, stomach
- 2- Duodenum, pancreas
- 3- Small intestine

Esophagus:

>The esophagus is a tubular structure about 10 in. (25 cm) long that joins the pharynx to the stomach.

>Enter the abdomen through esophageal opening (level of T10) in the right crus of diaphragm.

>has thoracic part and abdominal part

>Relations of thoracic part:

Anteriorly: trachea, left recurrent laryngeal n., left bronchus, pericardium

Posteriorly: thoracic vertebra, thoracic duct, azygous vein, Rt posterior intercostal arteries, descending thoracic aorta

Right side: The right mediastinal pleura and the terminal part of the azygos vein

Left side: The left subclavian artery, the aortic arch, the thoracic duct, and the left mediastinal pleura and lung.

>Relations of abdominal part:

1-Anteriorly: left lobe of the liver & left vagus nerve

2-Posteriorly: left crus of the diaphragm & right vagus nerve

>blood supply of esophagus:

SECTION	Artery	Vein	Lymph Nodes
Upper third	Inferior thyroid artery	Drain into the inferior thyroid veins	Drain into the deep cervical nodes
Middle third	Descending thoracic aorta	Drain into the azygos veins	Drain into the superior and posterior mediastinal nodes
Lower third	Branches from the left gastric artery	Drain into the left gastric vein, a tributary of the portal vein	Drain into nodes along the left gastric blood vessels and the celiac nodes

>Innervation:

The esophagus is supplied by parasympathetic and sympathetic efferent and afferent fibers via the vagi and sympathetic trunks.

Notice the gastroesophageal sphincter

Notice the esophageal constrictions

Stomach

>The stomach is a dilated part of the alimentary canal.

>Between the esophagus and the small intestine.

>It occupies the left upper quadrant mainly in the epigastric region.

>Shape of the stomach:

It is roughly J-shaped especially in thin person BUT Steer horn in obese person, and it has:

1-Two openings, the cardiac and pyloric orifices

2-Two curvatures, the greater and lesser curvatures

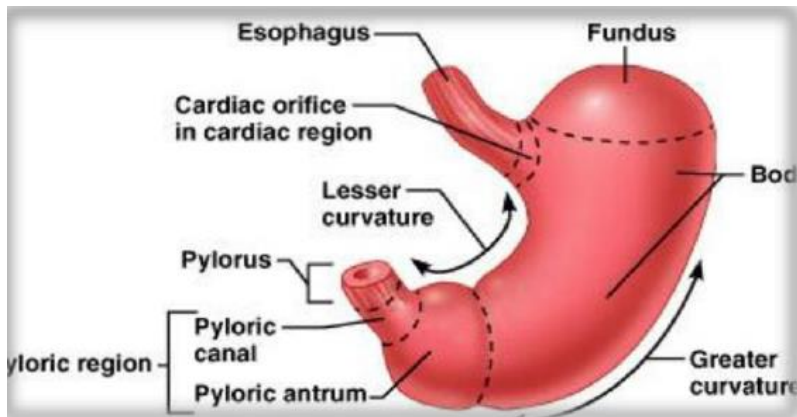
3-Two surfaces, an anterior and a posterior surface

>folds of mucosa-RUGAE-

>incisura angularis

>parts of the stomach:

1-fundus 2-body 3-pyloric antrum 4- pylorus



>epiploic foramen (foramen of Winslow):

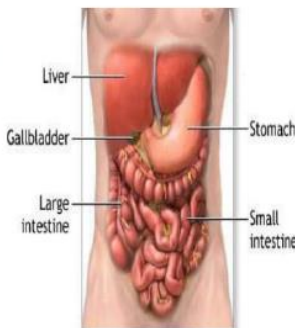
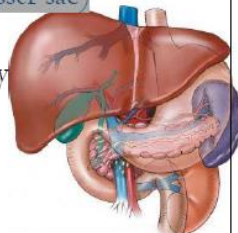
is a small vertical passage between the greater sac and the lesser sac, allowing communication between these two spaces.

Boundaries

anterior: the free edge of the lesser omentum (hepatoduodenal ligament) which contains the common bile duct, hepatic artery proper, and portal vein between its two layers

posterior: peritoneum covering the inferior vena cava

>relations of stomach

ANTERIOR- SUPERIOR	POSTERIORLY = STOMACH BED
<ul style="list-style-type: none">- The anterior abdominal wall- the left costal margin- the left pleura and lung- the diaphragm- the left lobe of the liver  <p>Labels in diagram: Liver, Gallbladder, Stomach, Large intestine, Small intestine</p>	<ul style="list-style-type: none">- The lesser sac- the left crus of diaphragm- the spleen (as angle, part ant. and part post. and form the left boundary of the lesser sac)- the left suprarenal gland- the upper part of the left kidney- the splenic artery- the body of pancreas- the transverse mesocolon- the transverse colon 

>Blood supply: branches of celiac trunk (left gastric artery, right gastric artery, short gastric artery, left and right gastroepiploic arteries)

>veins: drain into portal circulation

>lymphatic drainage: gastroepiploic nodes + short gastric nodes>> celiac nodes

>Nerve supply: anterior and posterior vagal trunk

Duodenum

>The duodenum is C shaped tube, is about 25cm (10 inches) and is retroperitoneal except the first and last inches.

>Curves around the head of pancreas

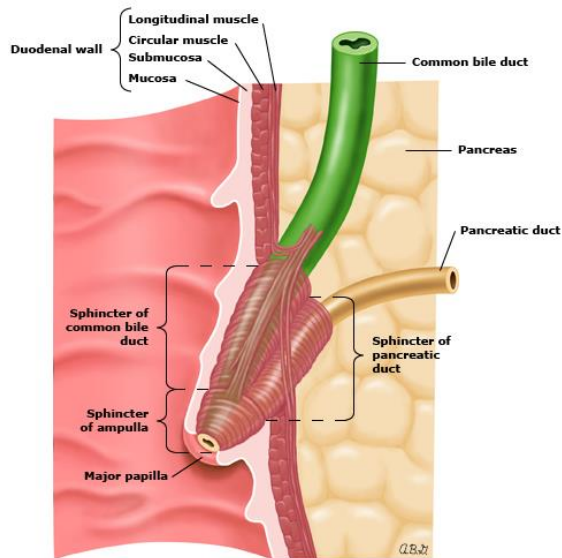
>It is important because it receives the opening of the bile and pancreatic ducts.

>The common bile duct and the pancreatic duct have the same opening in the duodenum. When they meet, they form a bulge in the duodenal wall called **ampulla of Vater**.

> Around it is a sphincter called **sphincter of Oddi (a smooth muscle)**.

>We call the opening from inside the **major duodenal papilla**, sometimes there is another opening 1 inch above the major papilla for accessory pancreatic ducts called **minor duodenal papilla**.

> The duodenum is situated in the epigastric and umbilical regions.



Parts of duodenum and relations:

First part of duodenum (2inches)

>The first part begins from the pyloduodenal junction. At the level of the transpyloric line.

>Runs upward and backward at the level of the 1 st lumbar vertebra 1 inch to the right.

Relations of the first part:

- Anteriorly: The liver (quadratus lobe), The gall bladder
- Superiorly: The epiploic foramen
- Posteriorly: The lesser sac, the bile duct, the portal vein, Inferior vena cava gastroduodenal Artery (if there is a peptic ulcer on the posterior wall of the 1st inch perforation and infiltration may occur along with bleeding from this artery)
- Inferiorly: The head of the pancreas

Second part of duodenum (3inches)

Importance of the 2nd part: it receives the common bile and pancreatic ducts.

Relations of the second part:

- Anteriorly: The gallbladder (fundus), the right lobe of the liver, the transverse colon, the coils of small intestine
- Posteriorly: Hilum of the right kidney, the right ureter
- Laterally: Right colic flexure, ascending colon, right lobe of the liver
- Medially: Head of the pancreas, Bile and pancreatic ducts

Third Part of the Duodenum(4inches)

Runs horizontally to the left, in front of the vertebral column. On the subcostal plane.

Relations of the third part:

- Anteriorly: The root of the mesentery of the small intestine, the superior mesenteric vessels contained within the mesentery coils of the jejunum
- Posteriorly: The right ureter, the right psoas muscle, the inferior vena cava, the aorta
- Superiorly: The head of pancreas
- Inferiorly: Coils of jejunum

forth Part of the Duodenum (1inch)

>Runs upward to the left

>Ends in the duodenojejunal junction at the level of the 2nd lumbar vertebrae 1 inch to the left.

>The junction (flexure) is held in position by the ligament of Treitz, which is attached to the right crus of the diaphragm (duodenal recess).

Relations of the fourth part:

- Anteriorly: The beginning of the root of the mesentery, Coils of the jejunum
- Posteriorly: Left psoas major muscle, The sympathetic chain on the left margin of the aorta
- Superiorly: Uncinate process of the pancreas

>Blood supply: upper half>>> superior pancreaticoduodenal artery

Lower half>>>inferior pancreaticoduodenal artery

>venous drainage: upper half>>> portal vein

Lower half>>> superior mesenteric vein

>Lymphatic drainage: via pancreaticoduodenal nodes>>> gastroduodenal node>> celiac nodes

Pancreaticoduodenal nodes>>>superior mesenteric nodes

Pancreas

>The pancreas is both an exocrine and endocrine gland

>The pancreas is an elongated structure that lies in the epigastrium and the left upper quadrant.

>The pancreas is divided into a head, neck, body, and tail

>apart of the head extends to the left behind the superior mesenteric vessels and is called the uncinata process.

>Relations

Anteriorly: From right to left: the transverse colon and the attachment of the transverse mesocolon, the lesser sac, and the stomach.

Posteriorly: From right to left: the bile duct, the portal and splenic veins, the inferior vena cava, the aorta, the origin of the superior mesenteric artery, the left psoas muscle, the left suprarenal gland, the left kidney, and the hilum of the spleen.

>Blood supply: The splenic and the superior and inferior pancreaticoduodenal arteries.

Small intestine

>divided into three parts: the duodenum, the jejunum, and the ileum.

>The jejunum and ileum measure about 20 ft (6 m) long

>The jejunum begins at the duodenojejunal flexure

>the ileum ends at the ileocecal junction.

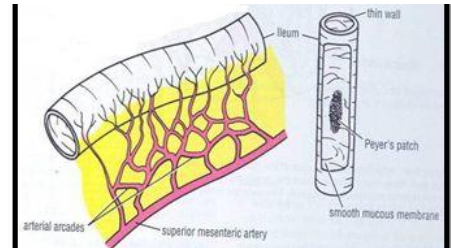
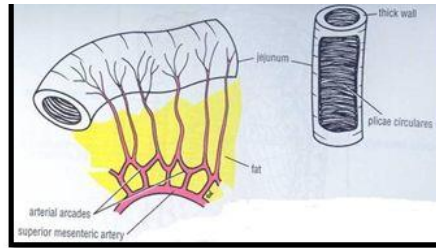
- The coils of jejunum and ileum are freely mobile and are attached to the posterior abdominal wall by a fan shaped fold of peritoneum known as the **mesentery of the small intestine**

>Identify the root and content of the small intestine mesentery

>Blood supply: branches of superior mesenteric artery, ileocolic artery (the lowest part of ilium)

>veins: superior mesenteric vein

>Lymphatic drainage: superior mesenteric nodes



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