Spleen, Liver ,Gall bladder Pancreas , Biliary duct

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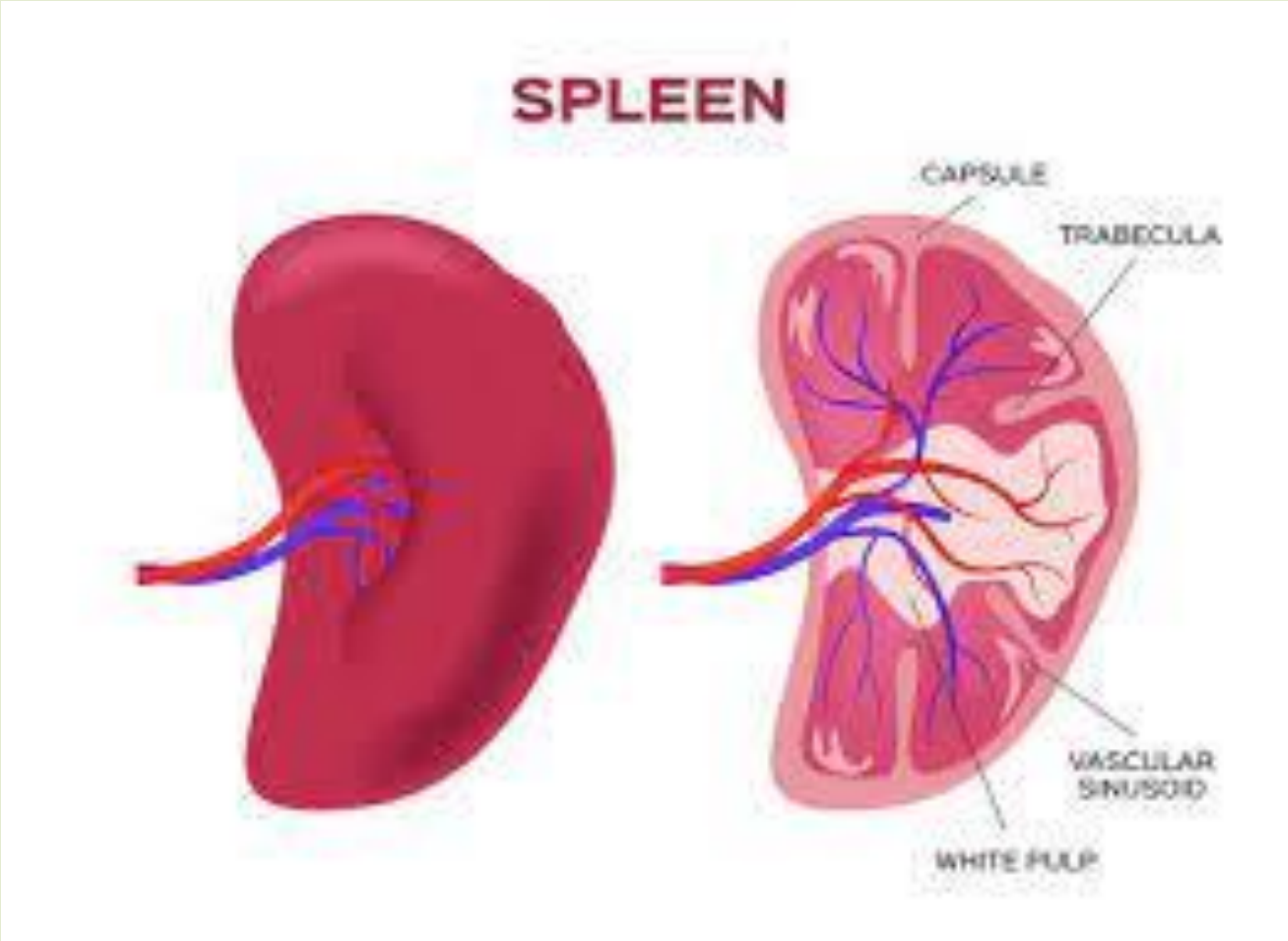
Topics

- Spleen
- Liver
- Gall Bladder
- Pancreas
- Biliary tract


SPLEEN
CAPSULE
TRABECULA
VASCULAR SINUSOID
WHITE PULP

Spleen

Spleen is a lymphatic organ connected to the blood vascular system.

- The spleen is a wedge-shaped organ lying mainly in the left hypochondrium, and partly in the epigastrium.
- It is lies in between the fundus of the stomach and the diaphragm.
- The spleen is tetrahedral in shape

- dark purple in colour.
- Highly vascular and soft
- 2.5 cm thick, 7.5 cm broad and12.5 cm long
- and is related to 9th to 11th ribs

- two ends- lateral(expanded) and medial (rounded)
- three borders
- two surface

3 border of Spleen

- The *superior border* is characteristically notched near the lateral end.
- The *inferior border* is rounded.
- The *intermediate border* is also rounded and is directed to the right

Surfaces

- The *diaphragmatic surface* is convex and smooth. The diaphragmatic surface is related to the diaphragm which separates the spleen from the costodiaphragmatic recess of pleura, lung and 9th, 10th and 11th ribs of the left side
- The *visceral surface* is concave and irregular, is related to the fundus of the stomach, the anterior surface of the left kidney, the splenic flexure of the colon and the tail of the pancreas

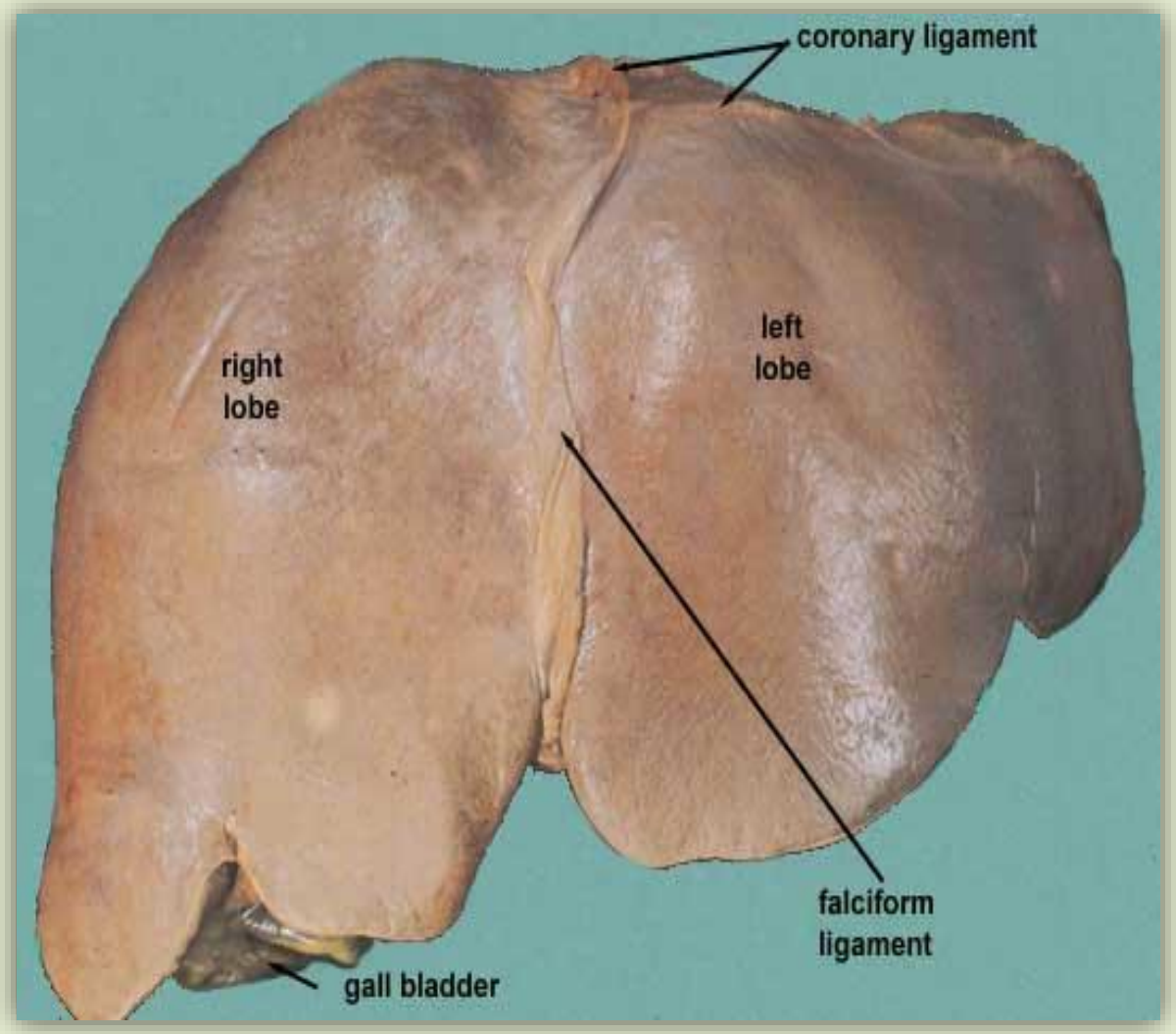
Artery supply – supplied by the splenic artery which is the largest branch of the coeliac trunk

Nerve supply -Sympathetic fibers are derived from the coeliac plexus.

Function of Spleen

- *Phagocytosis*
- *Immune response*
- *Storage of RBC*

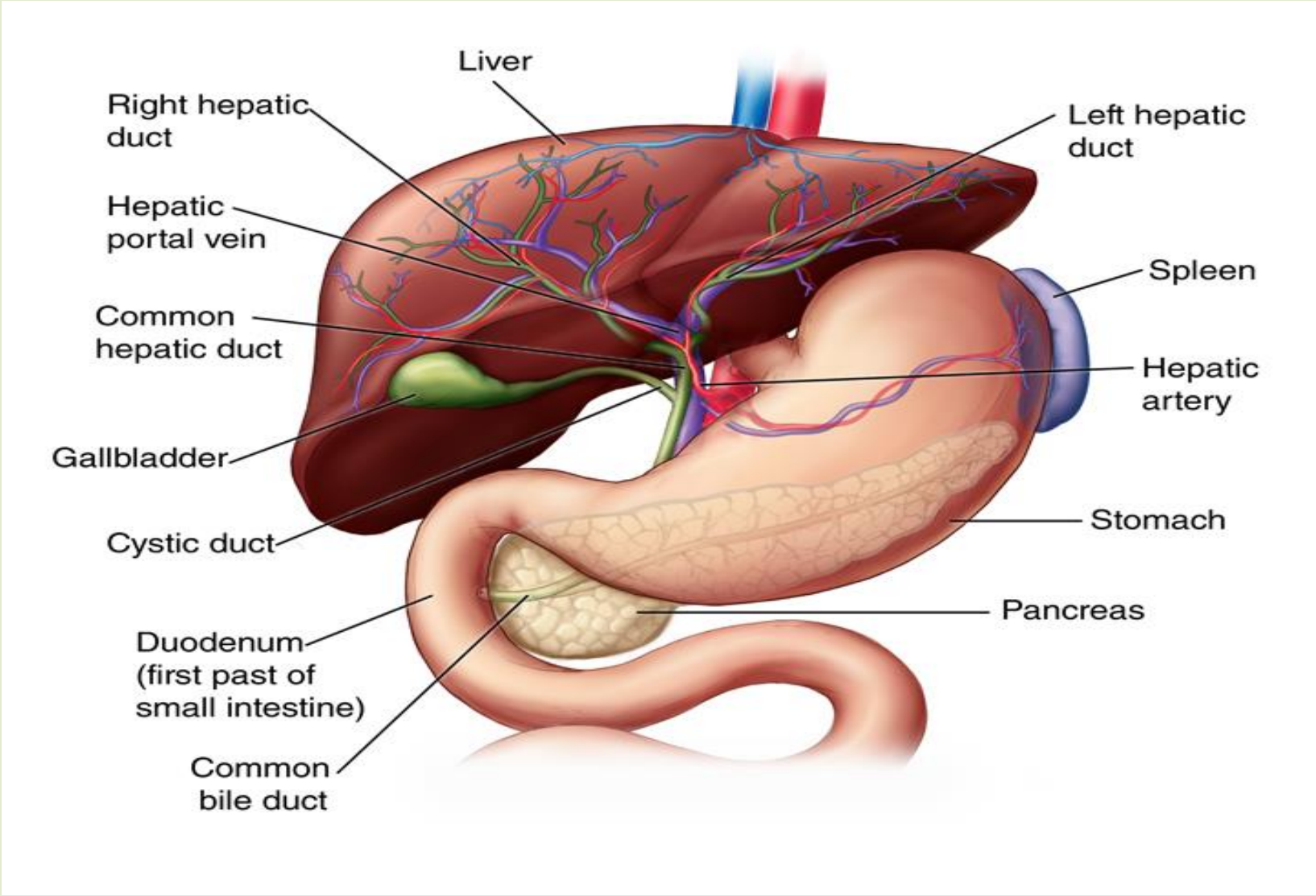
Liver


coronary ligament
right lobe
left lobe
falciform ligament
gall bladder

Introduction

- Largest gland ,reddish brown
- Weighs around 1- 2.3 kg
- Located in upper part of abdominal cavity; greater part in the right hypochondrium, relatively less in the epigastrium and left hypochondriac region
- Upper and anterior surface - underneath the diaphragm and posterior surface is irregular

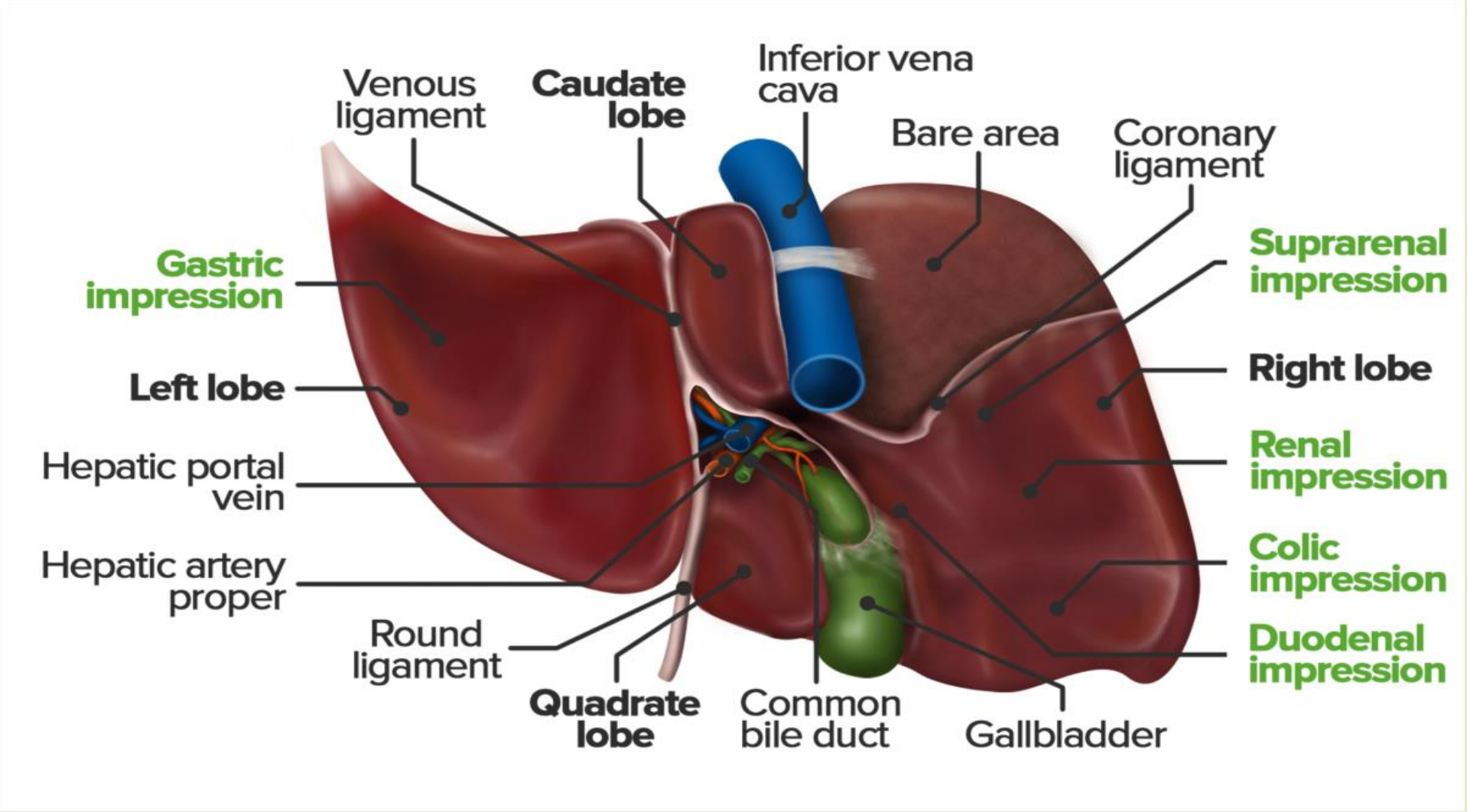
Anatomical relation with liver



Organs associated with Liver

- Superiorly and anteriorly-diaphragm and anterior abdominal wall
- Inferiorly-Stomach, bile ducts, duodenum, hepatic flexure of colon, right kidney and adrenal
- Posteriorly- Esophagus, IVC, Aorta, GB
- Laterally- Lower ribs and diaphragm,

Lobes of the Liver



Lobes of liver

- Superficially divided by fissures and ligaments
- The liver is divided into right and left lobes by the attachment of the *falciform ligament* anteriorly and superiorly; by the *fissure for the ligamentum teres* inferiorly; and by the *fissure for the ligamentum venosum* posteriorly.

1.Right lobe: largest

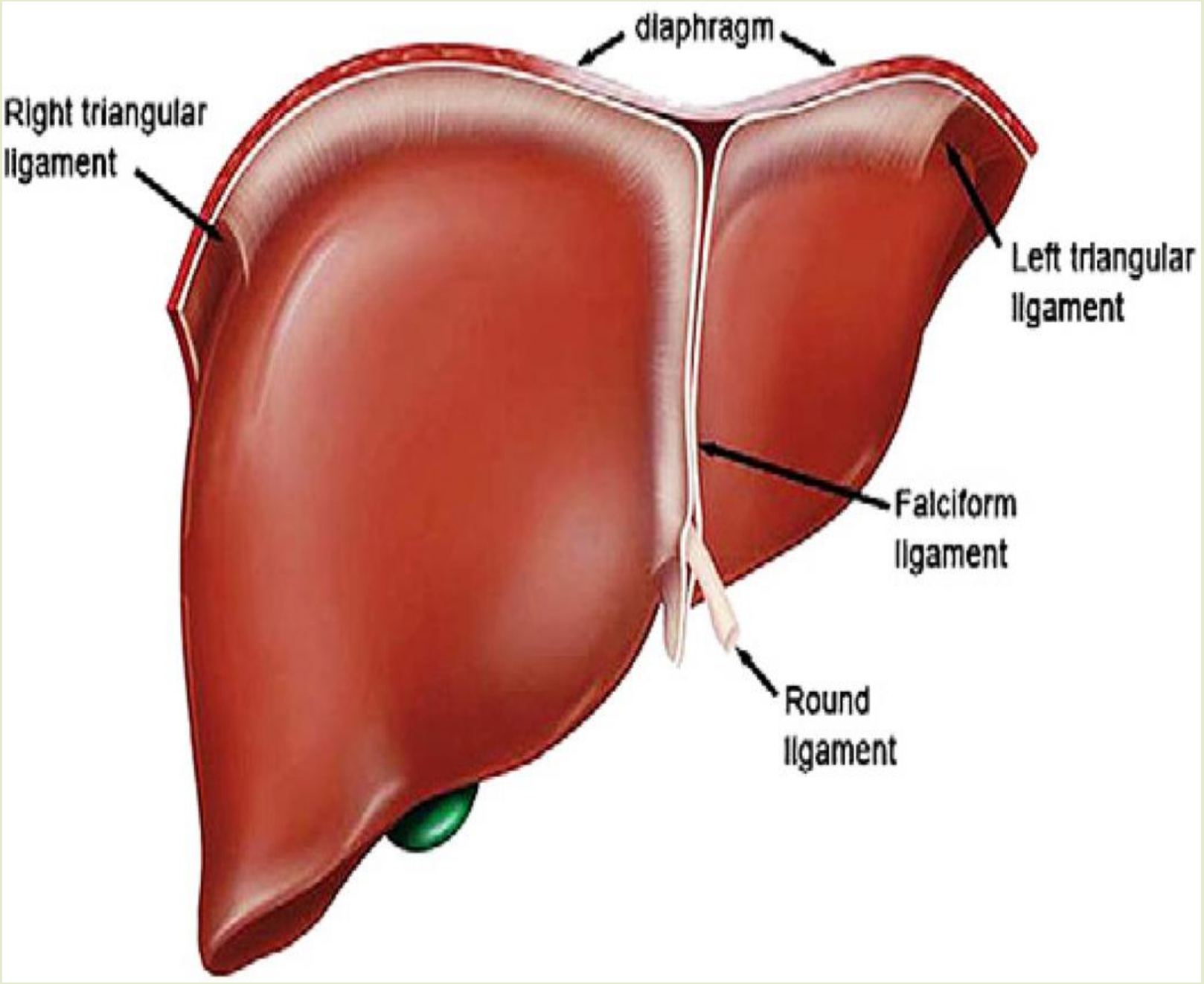
a Caudate lobe: between the venous ligament and groove for the inferior vena cava (IVC)

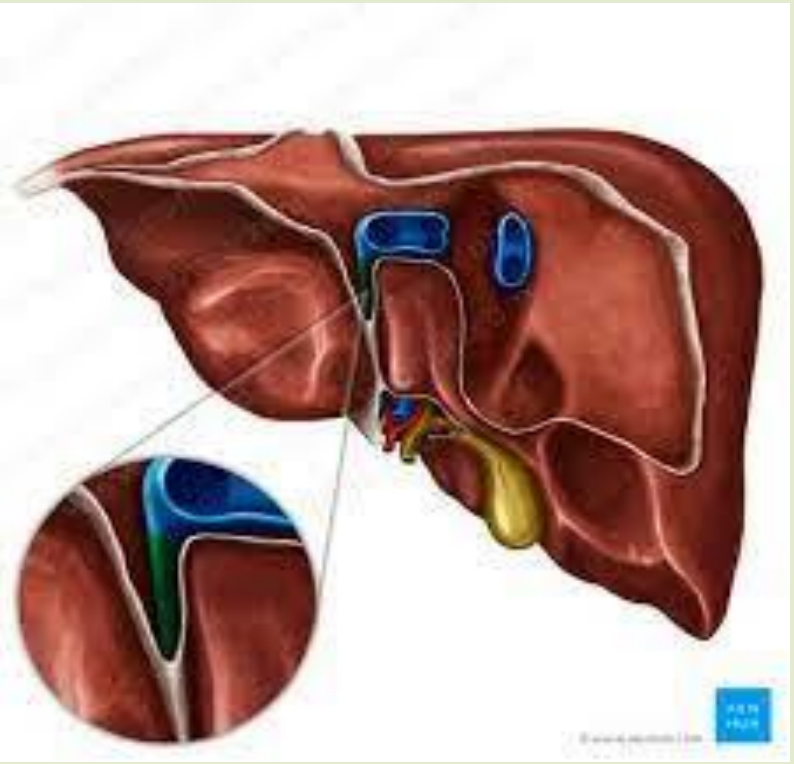
b. Quadrate lobe: between the round ligament and the gallbladder fossa

2. Left lobe: separated from the right by the falciform ligament on the diaphragmatic surface

Bare area of liver

- The bare area of the liver is found on the poster superior surface of the right lobe of the liver.
- It is the only part of the liver that has no peritoneal covering.
- It lies between the two layers of the coronary ligament, as well as the right triangular ligament.

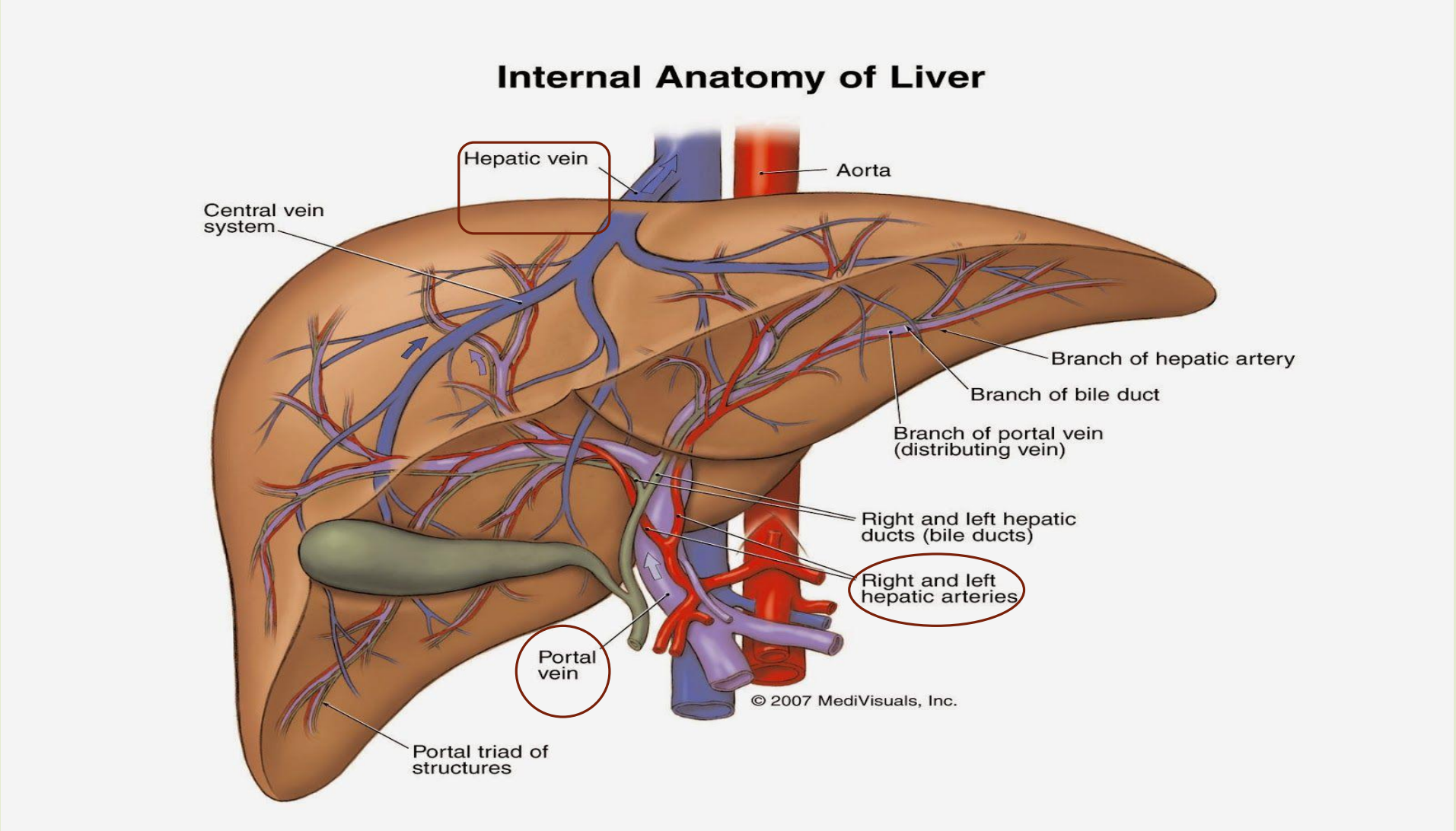

diaphragm
Right triangular ligament
Left triangular ligament
Falciform ligament
Round ligament



Blood supply

- The liver receives 20% of its blood supply through the hepatic artery, and 80% through the portal vein
- hepatic veins which drain directly into the inferior vena cava

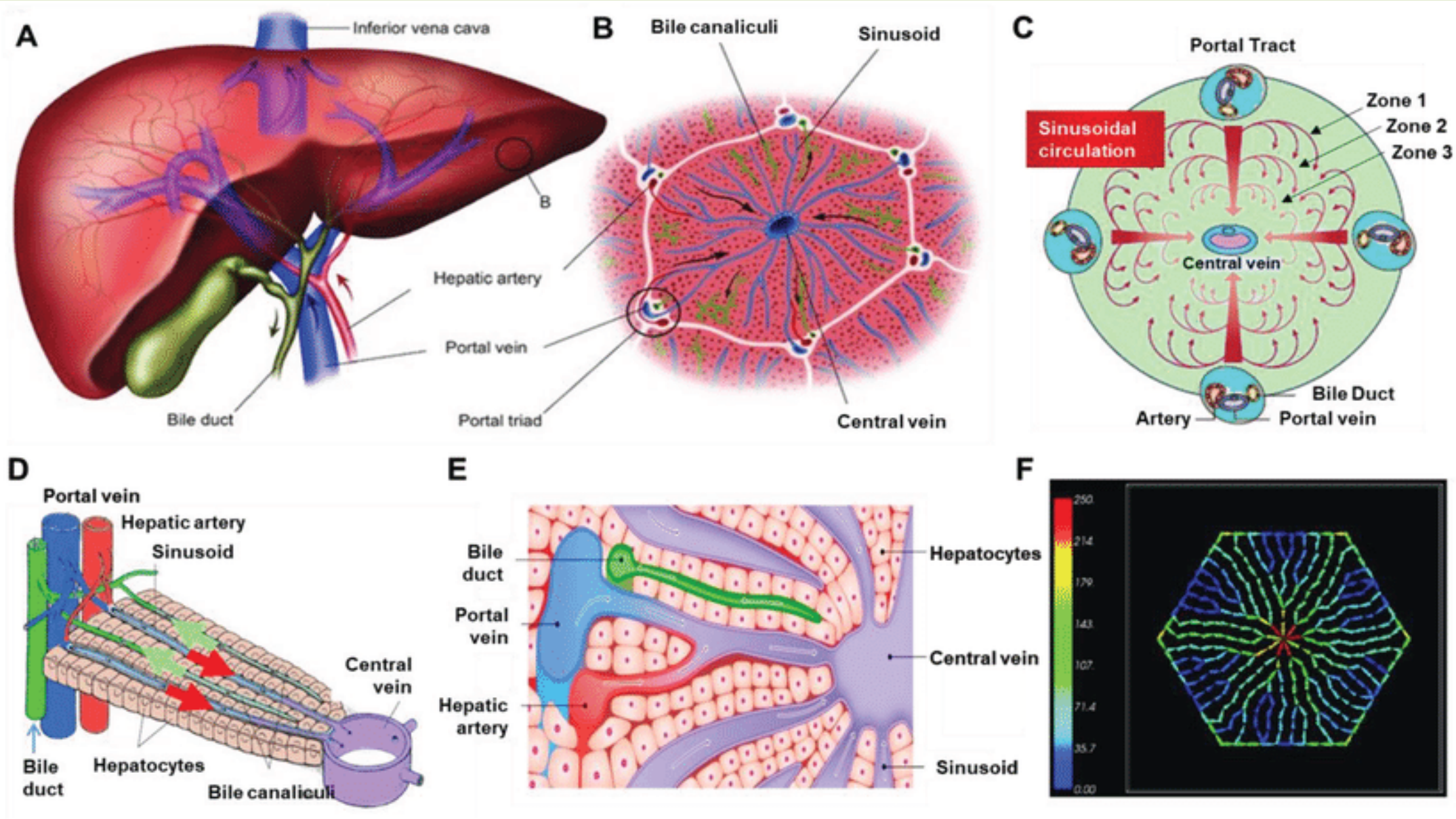
Blood supply to the liver



Nerve supply

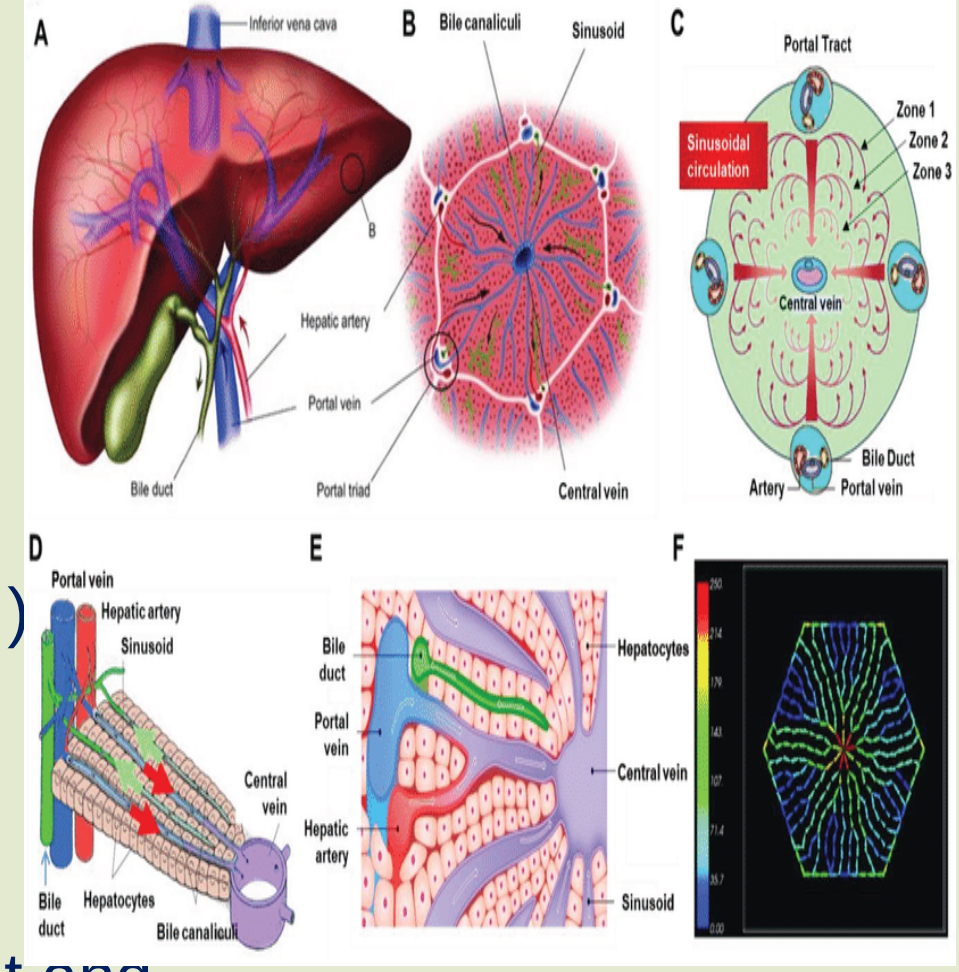
- The liver receives its nerve supply from the hepatic plexus which contains both sympathetic and parasympathetic or vagal fibres

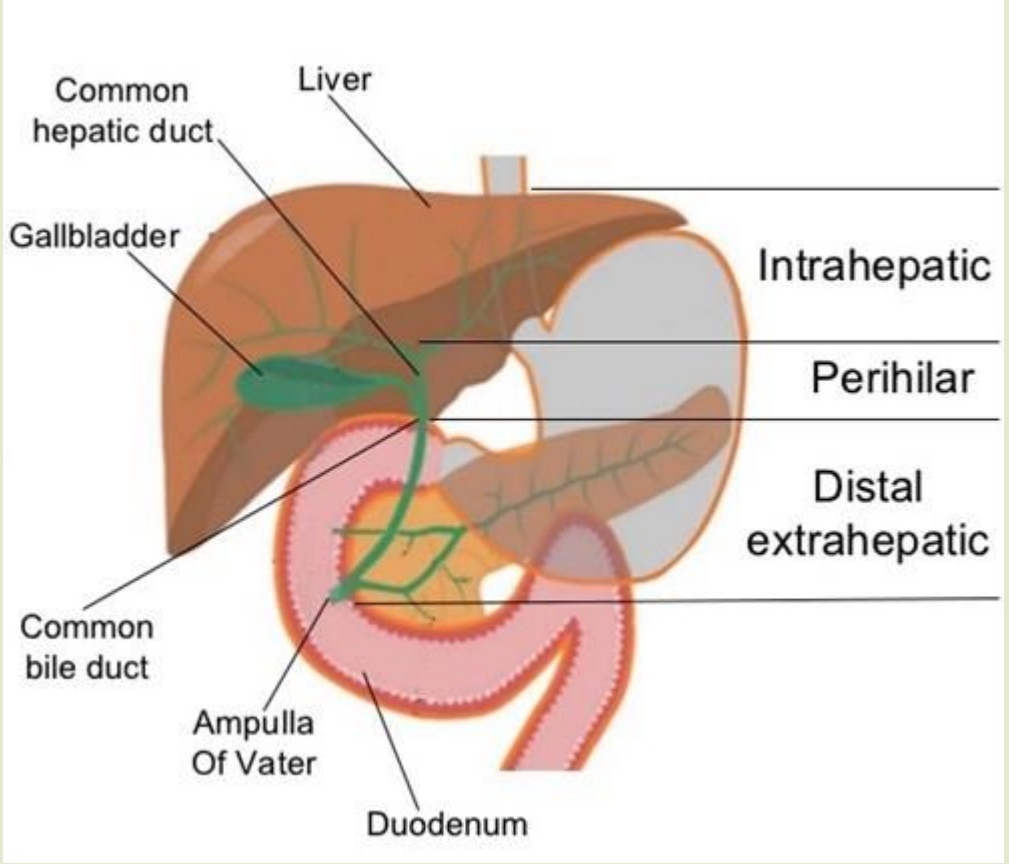
Structure of Liver



Structure

- The lobe of the liver are made up of lobules that contains hepatic cells(liver cells and hepatocytes) sinusoids , kupffers cells and central vein.
- Bile is secreted by hepatocytes
- Bile passes from bile canaliculi to bile duct to right and left hepatic duct which unite to form common hepatic duct



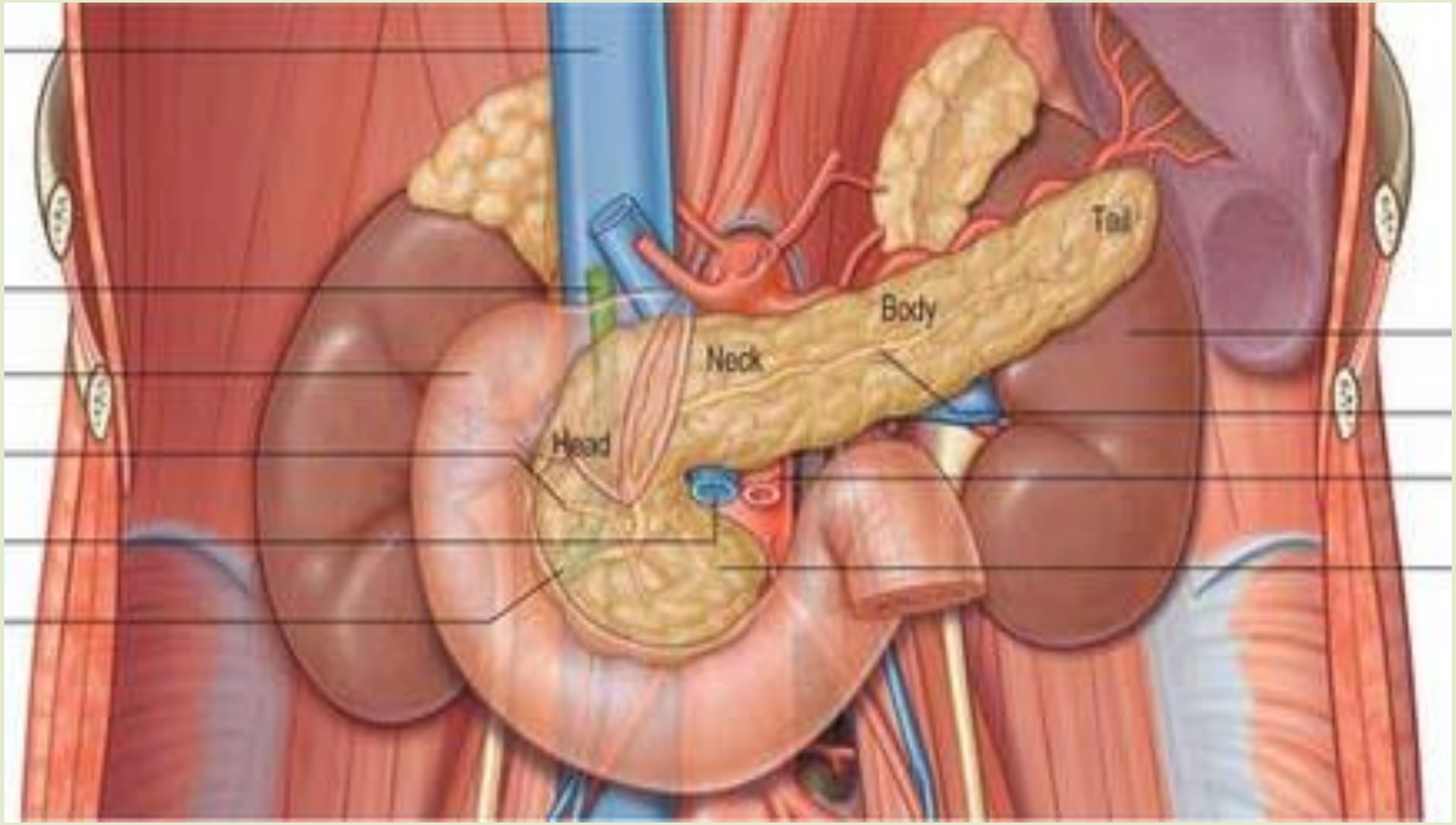

Common
hepatic duct
Liver
Gallbladder
Intrahepatic
Perihilar
Distal
extrahepatic
Common
bile duct
Ampulla
Of Vater
Duodenum

Pancreas

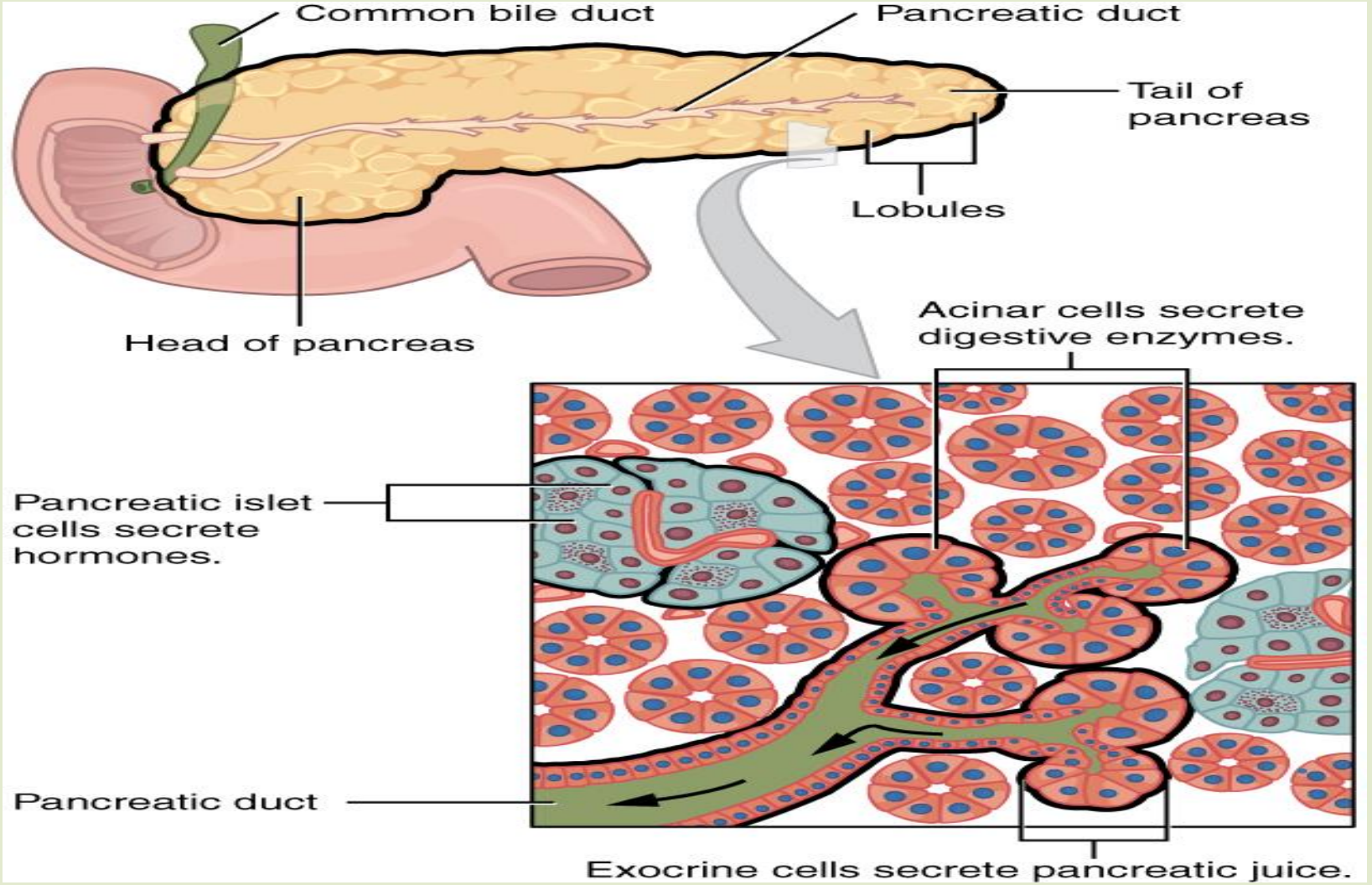
- Creamy, pink gland
- Weighs around 60 gm, measures around 12-15 cm long
- Located in epigastric and left hypochondriac region of abdominal cavity

Parts of Pancreas

- Broad head, neck , body and a narrow tail.



Exocrine and Endocrine Pancreas



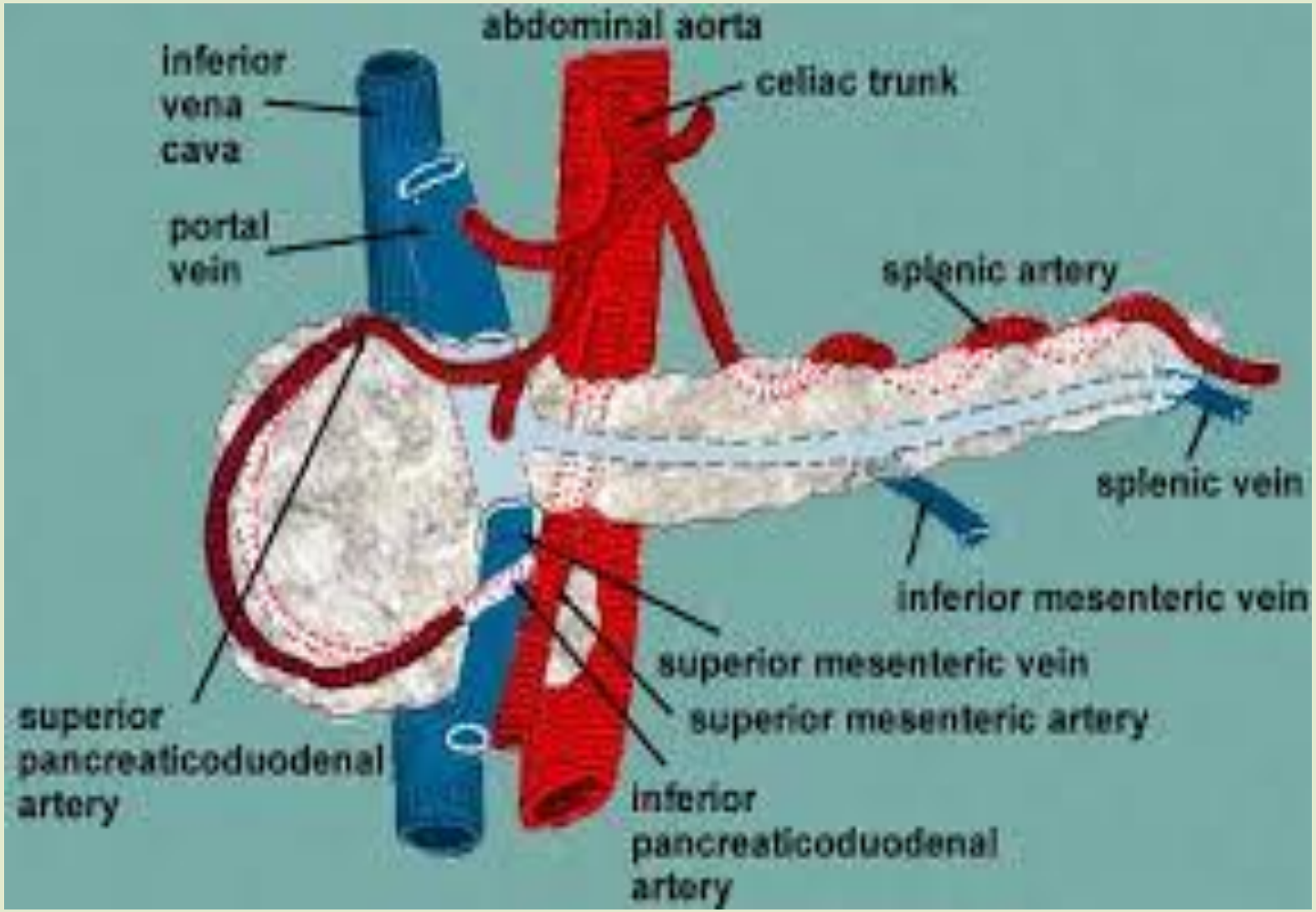
- Exocrine Part- It secretes digestive pancreatic juice
- Endocrine part- It secretes Alpha cells- Glucagon

  Beta cells- insulin

Blood supply

- Supplied by the pancreatic branches of splenic artery, superior pancreaticoduodenal artery a branch of gastro duodenal artery, inferior pancreaticoduodenal artery a branch of superior mesenteric artery

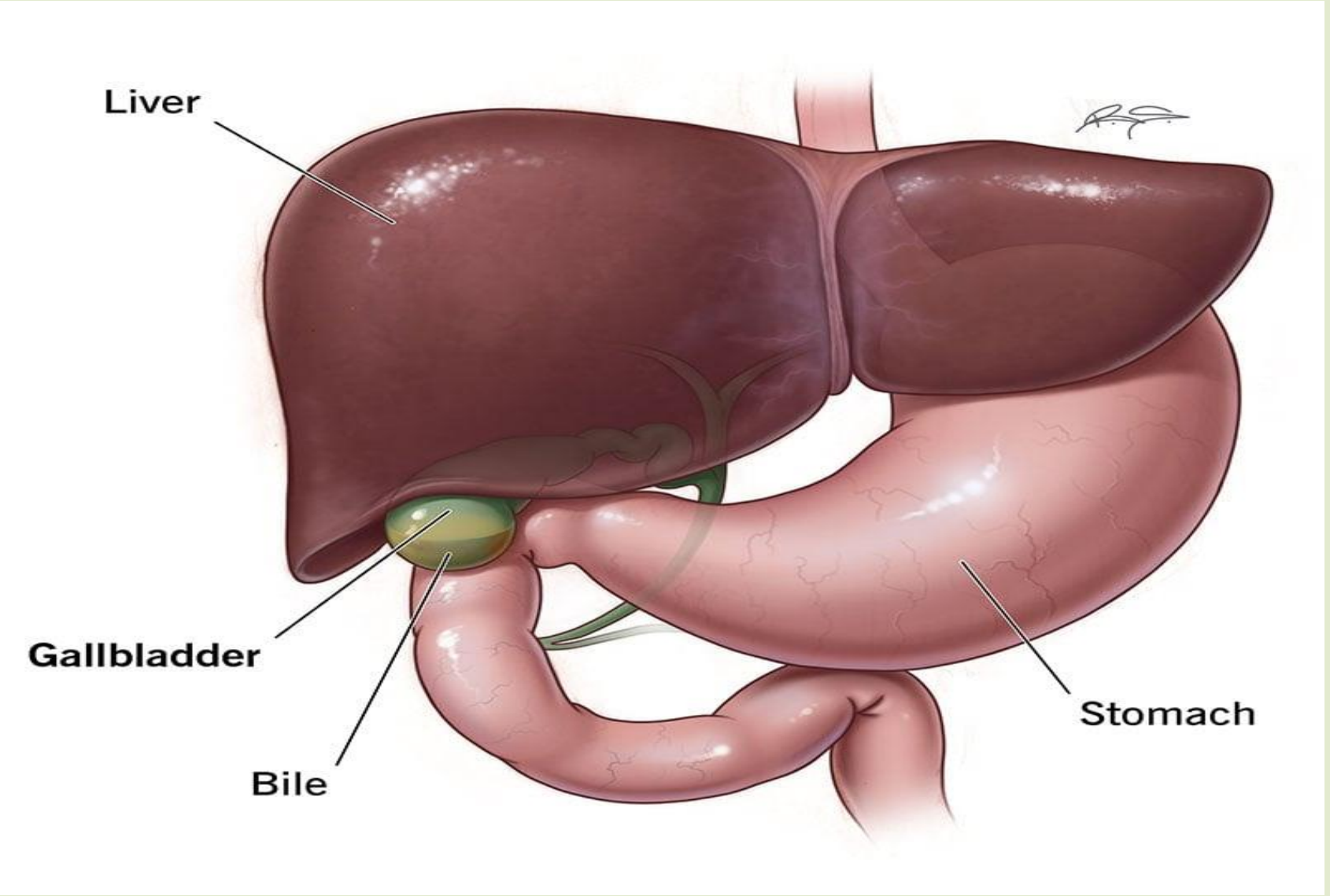
Blood supply of the pancreas



Nerve supply

- Parasympathetic – Vagus
- Sympathetic – Splanchnic nerve

Gall bladder

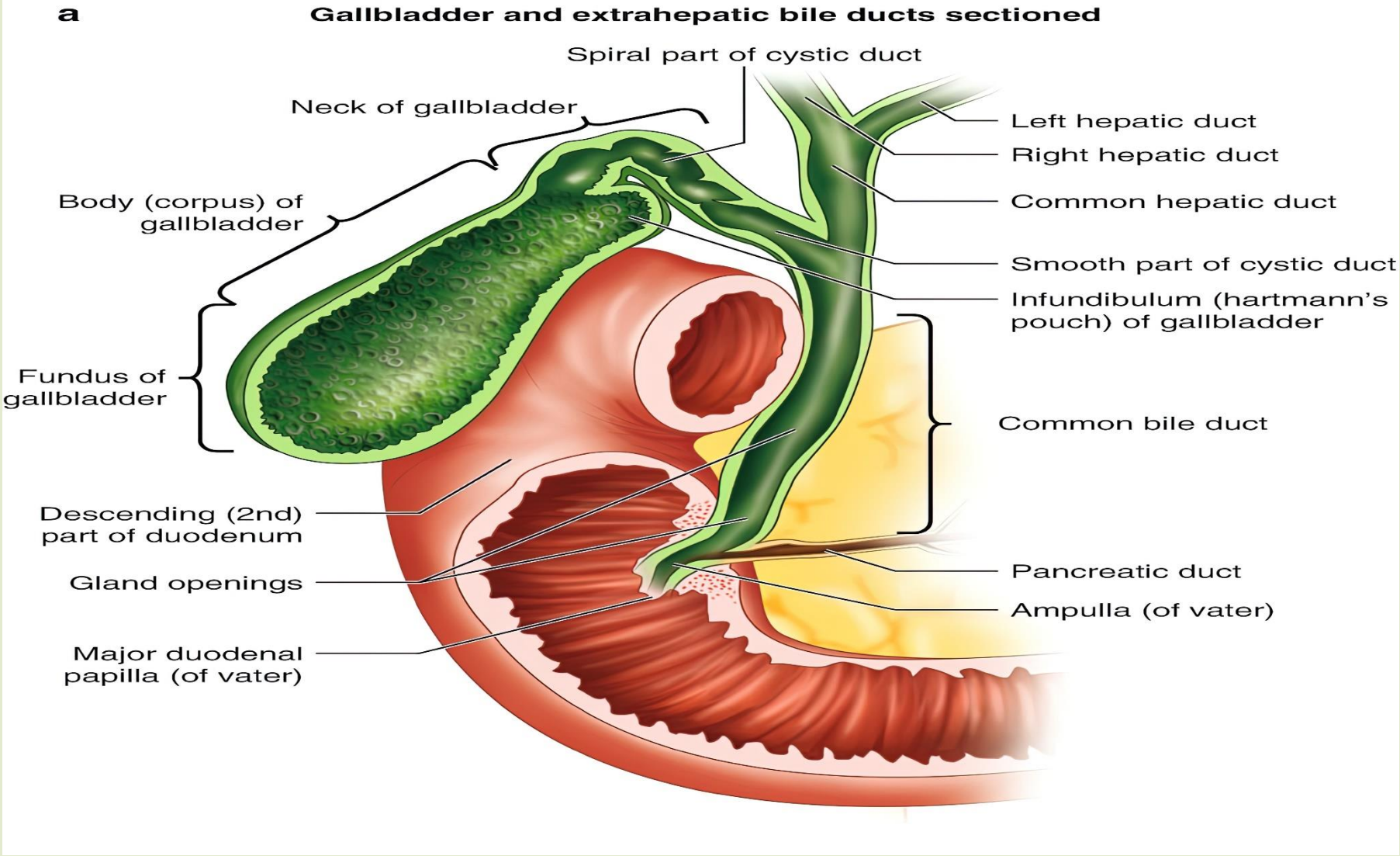


Parts

- Divided into 3 parts

1. Fundus- Project beyond the inferior border of liver
2. Body – lies in the gall bladder fossa of liver
3. Neck- narrowest part-situated near the right end of portal hepatic

Parts of gall bladder



blood supply

- Blood supply; Cystic artery- branch of hepatic artery, and

  Cystic vein- portal vein

Function of Gall badder

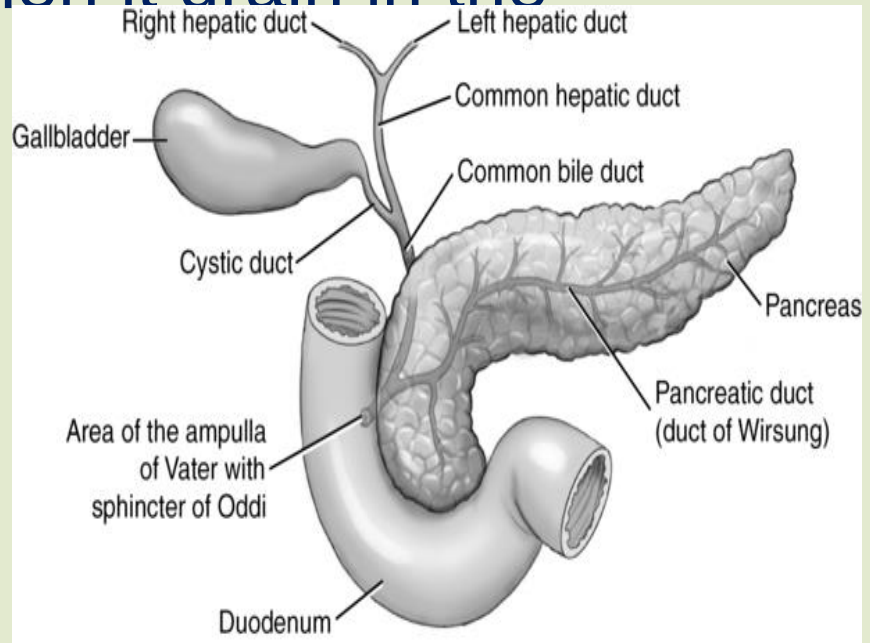
- Storage of bile
- Absorption of water and concentration of bile 10 times.
- Bile pH regulation
- **Absorption of certain vitamins in our body:** The gallbladder also helps absorb fat-soluble vitamins such as Vitamin K and Vitamin A

Bile duct

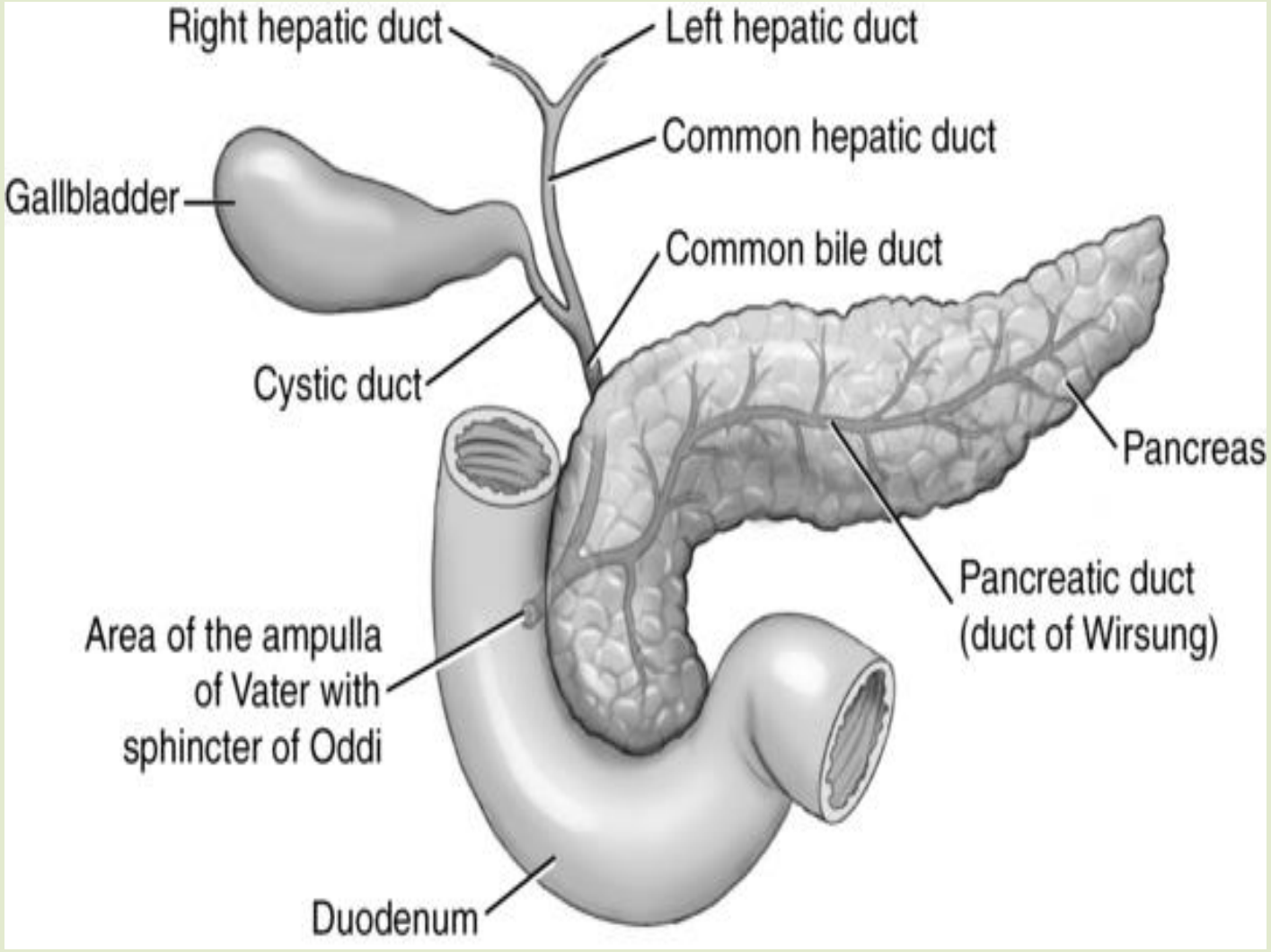
- Formed by union of cystic and common hepatic duct near the portal hepatic
- 3 inches long
- 6mm diameter

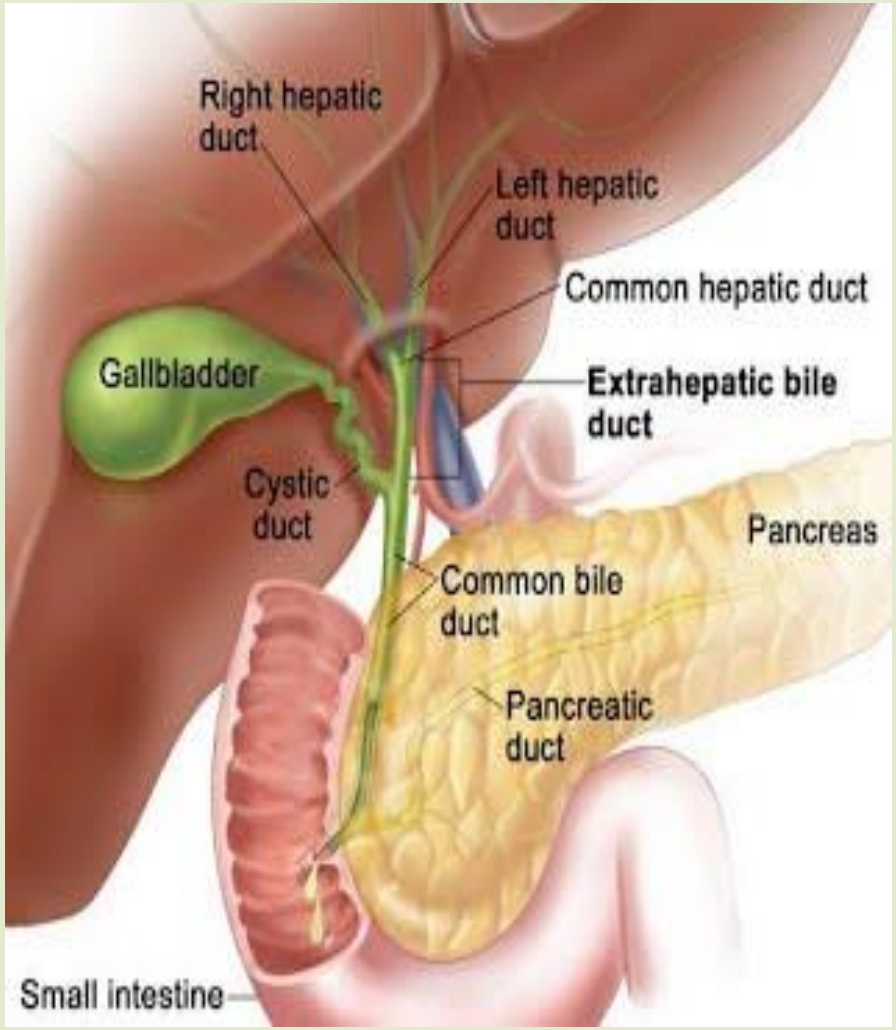
Course

- The bile duct runs downwards and backwards,
- First it run in the free margin of the lesser omentum and behind the first part of the duodenum then it unite with the main pancreatic duct to form Ampulla of vater then it drain in the middle part of second part of duodenum



Biliary duct





Function

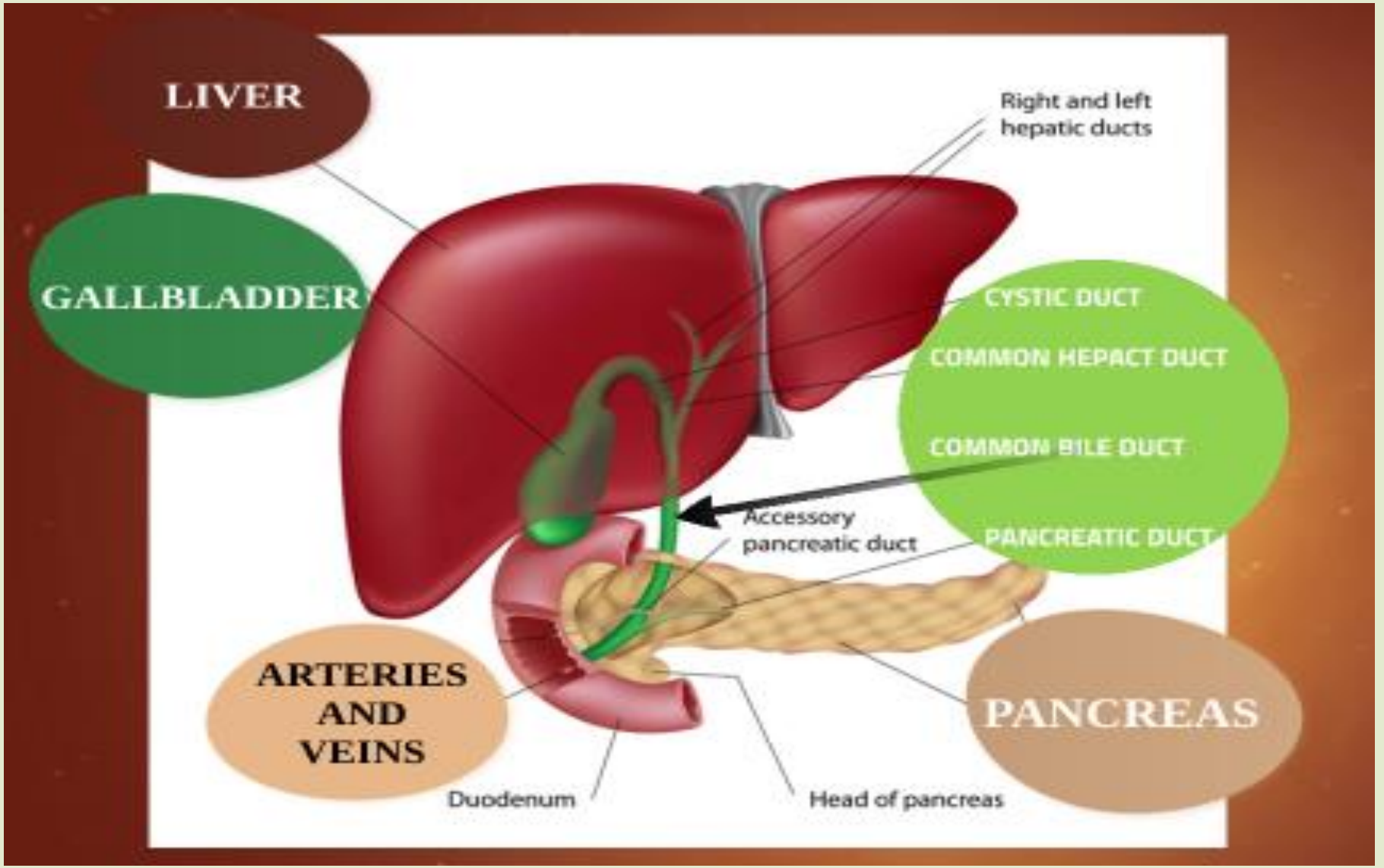
- To drain waste products from the liver into the duodenum.

Point to be remember

Spleen is a lymphatic organ connected to the blood vascular system. It acts as a filter for blood and plays an important role in the immune responses of the body.

Pancreas is a organ associated with diabetes.

Liver maintains blood glucose level


LIVER
GALLBLADDER
ARTERIES AND VEINS
Right and left hepatic ducts
CYSTIC DUCT
COMMON HEPACT DUCT
COMMON BILE DUCT
PANCREATIC DUCT
Accessory pancreatic duct
PANCREAS
Duodenum
Head of pancreas


Thank You