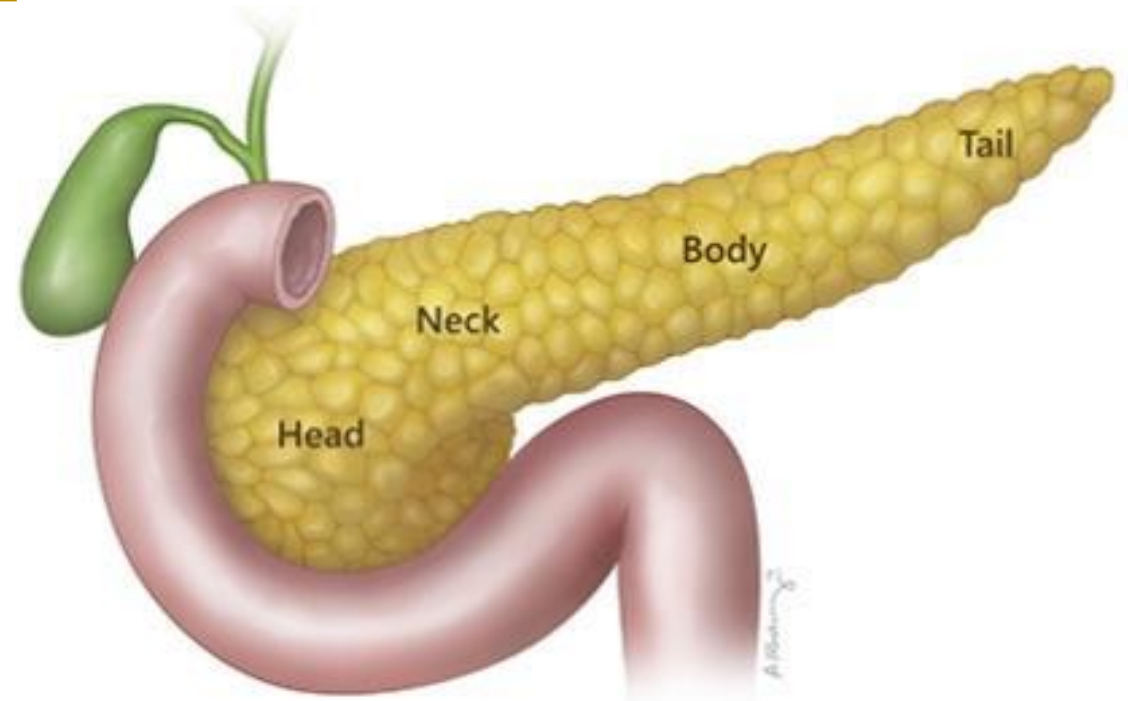


# Anatomy of Pancreas



Eman Shah  
(2<sup>nd</sup> year)

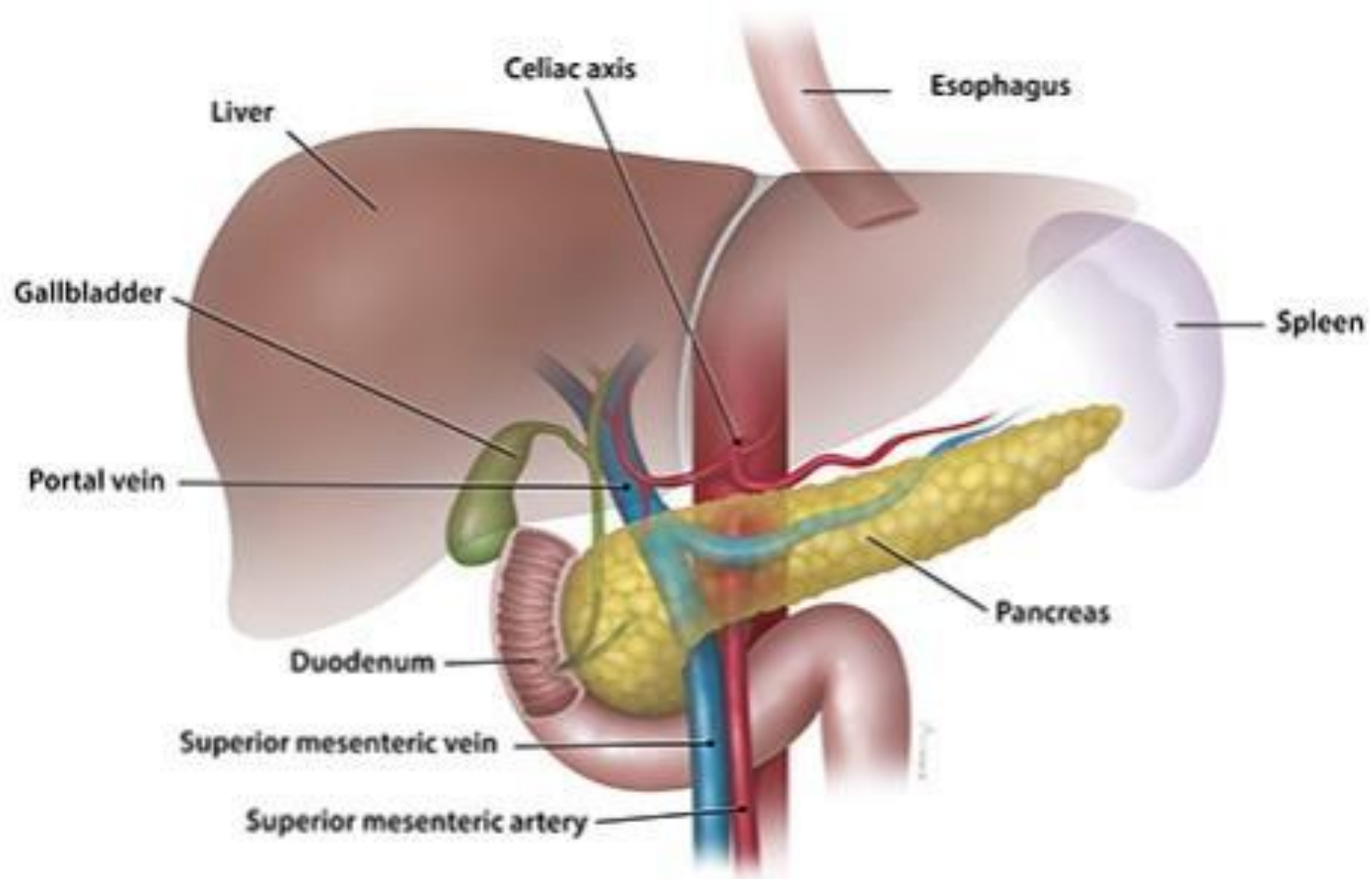
بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

# LEARNING OBJECTIVES

- We will discuss its **location , size, shape and weight.**
- We will learn about **Parts of Pancreas.**
- We will understand its **Anterior and Posterior Relation.**
- Analyze its **arterial supply.**
- Analyze its **venous drainage.**
- Describe its **nerve supply and lymph drainage.**
- Discuss clinicals related to pancreas.

# Introduction

- It is a **Retroperitoneal organ**
- It is a **Composite gland** having exocrine acini and group of endocrine cells
- This gland is of firm consistency and its surface is **firmly lobulated**.
- **Location:** It lies upward from C loop of duodenum to hilum of spleen.
- **Length** *15\_20cm*
- **Weight** *75\_100gm*



Liver

Celiac axis

Esophagus

Gallbladder

Spleen

Portal vein

Pancreas

Duodenum

Superior mesenteric vein

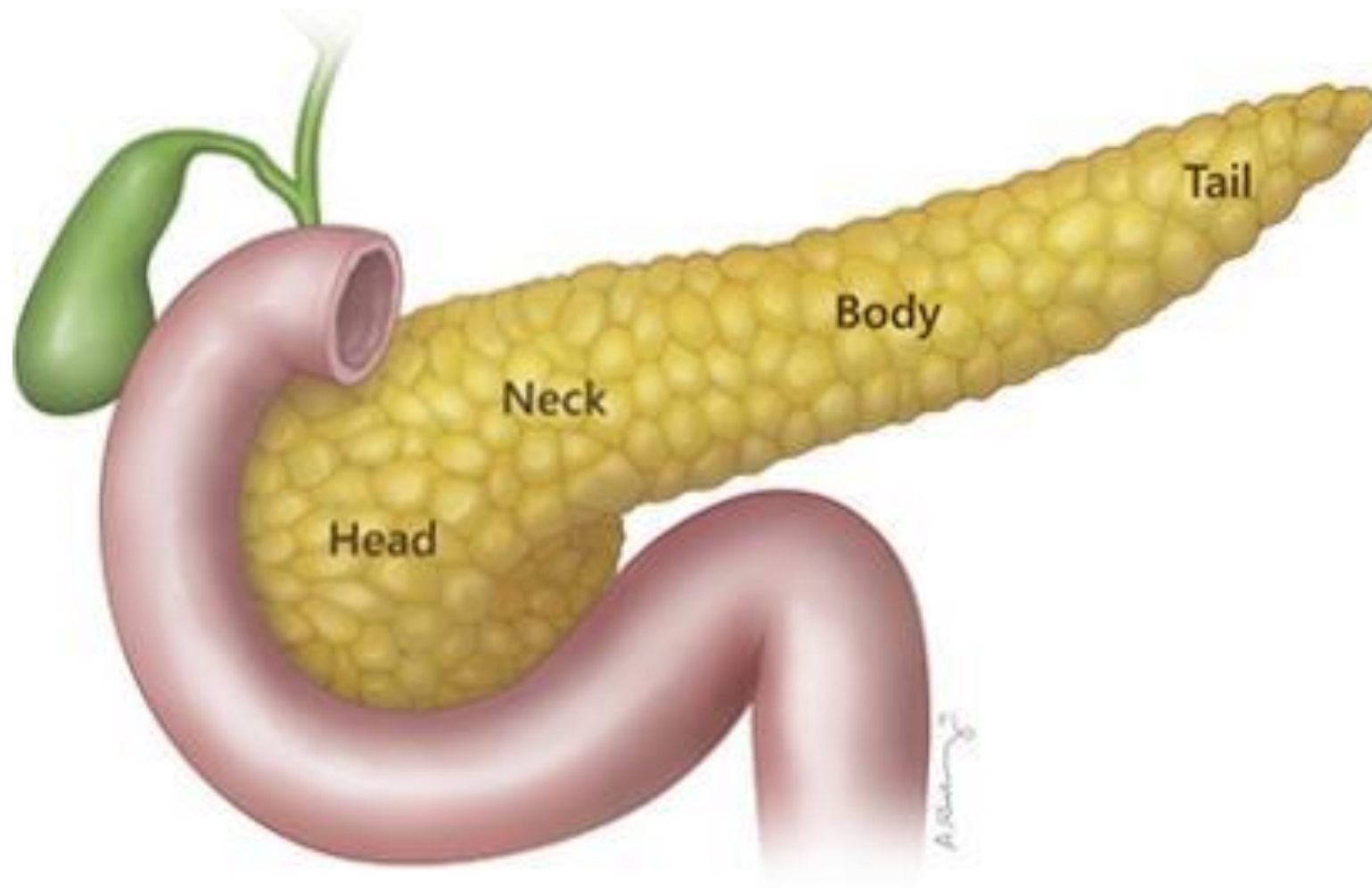
Superior mesenteric artery

# 100 grams

6 segments of a medium  
sized **tangerine**  
(clementine, mandarin)



# Parts of Pancreas 4 parts



# Head

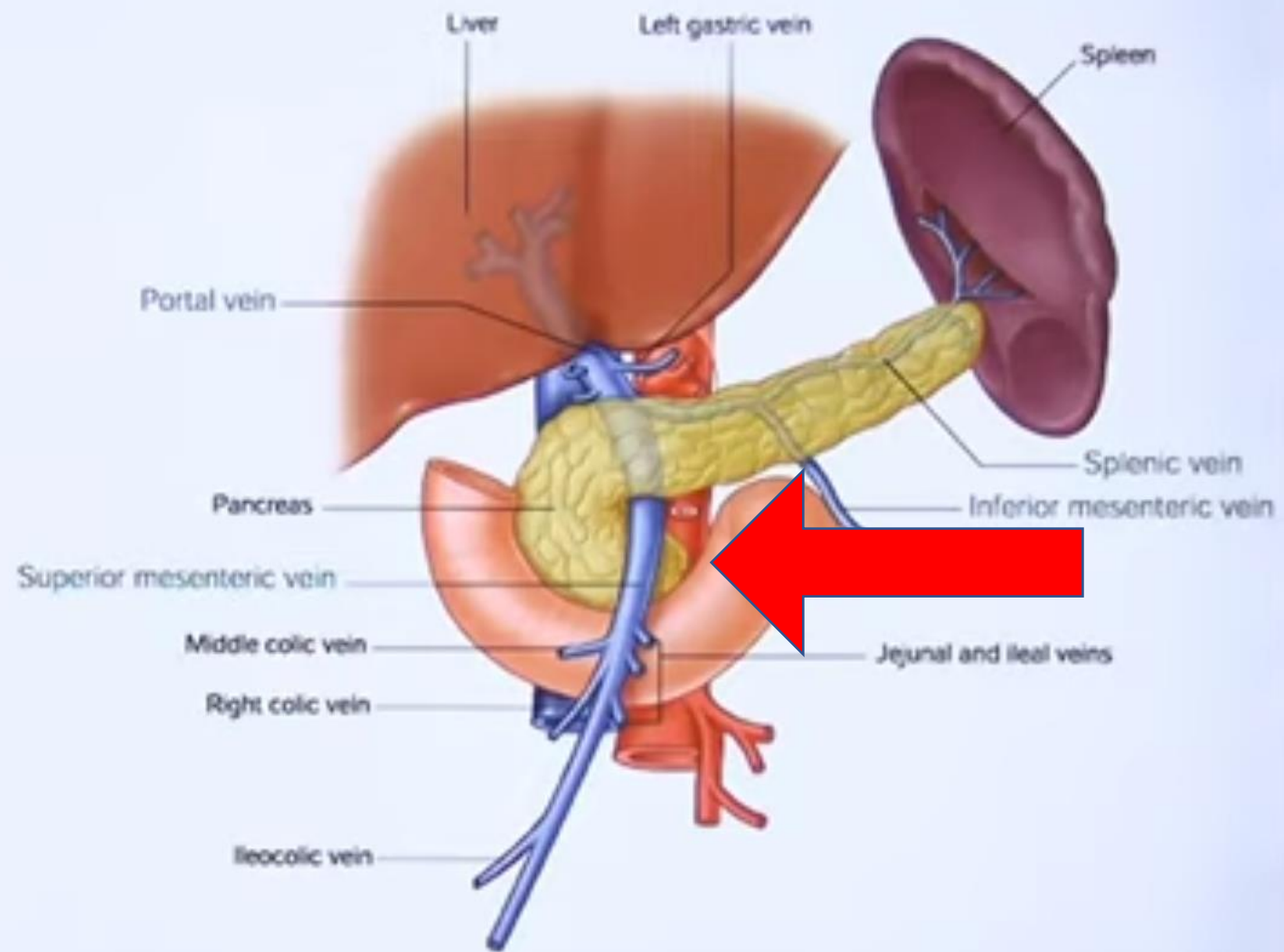
- Head of the pancreas is **disc shaped** and lies within the concavity of duodenum.
- A part of the head extend behind superior mesenteric vessels and is called **UNCINATE PROCESS**

# Neck

- The neck is the constricted portion of pancreas and connect the head to the body

It lies in front of the **Beginning of portal vein** and **Origin of superior mesenteric artery** from aorta.





## Body

- The body of pancreas is **TRIANGULAR** in shape
- The body runs upward towards to the left to joins the tail

## Tail

- The tail passes forward in the **Splenorenal ligament.**
- The tail comes in contact with the hilum of spleen.



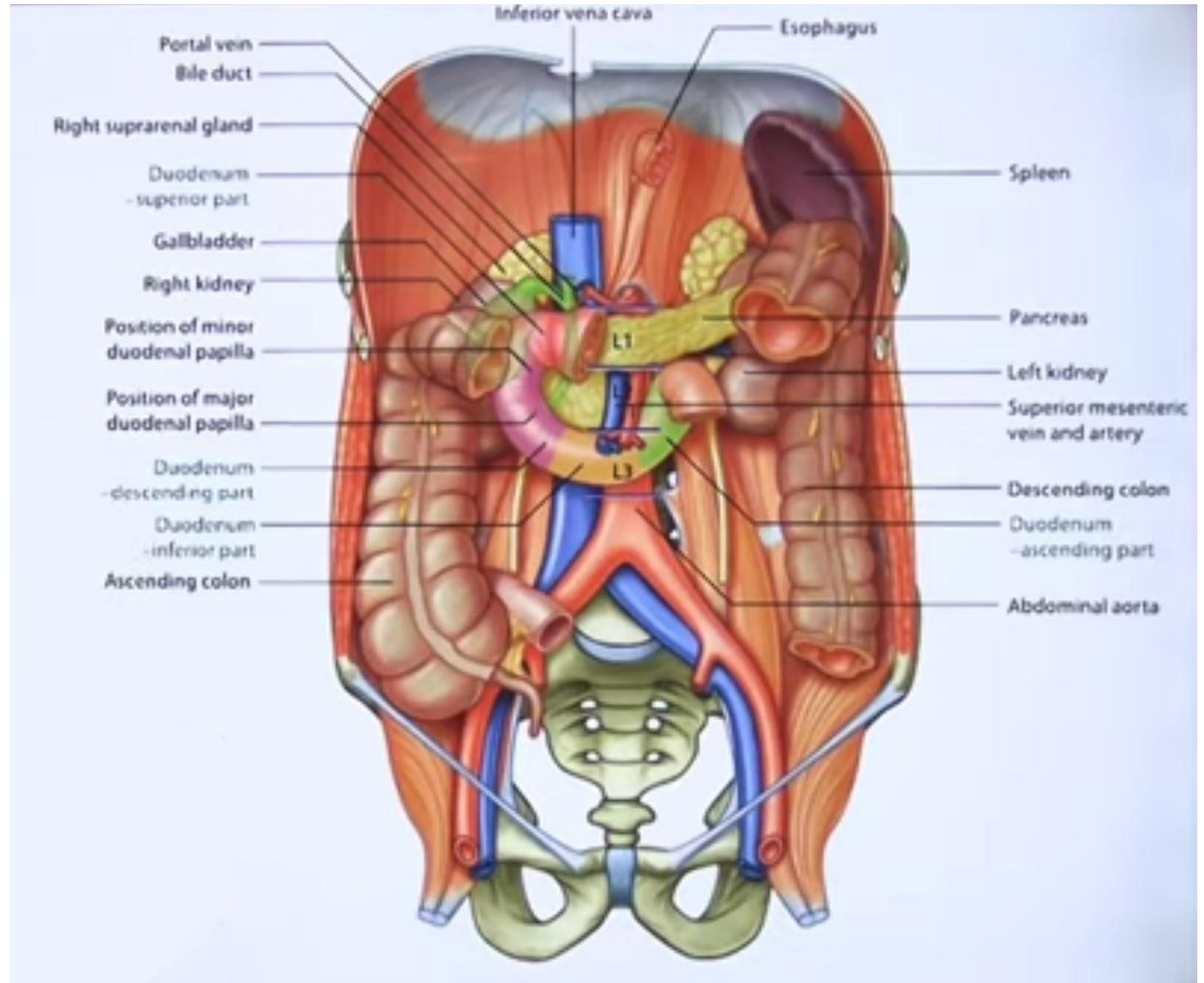
- Location of parts of pancreas with respect to vertebral levels

**1. Head • L1 L2**

**2. Neck • L1**

**3. Body • L1**

**4. Tail • T12**





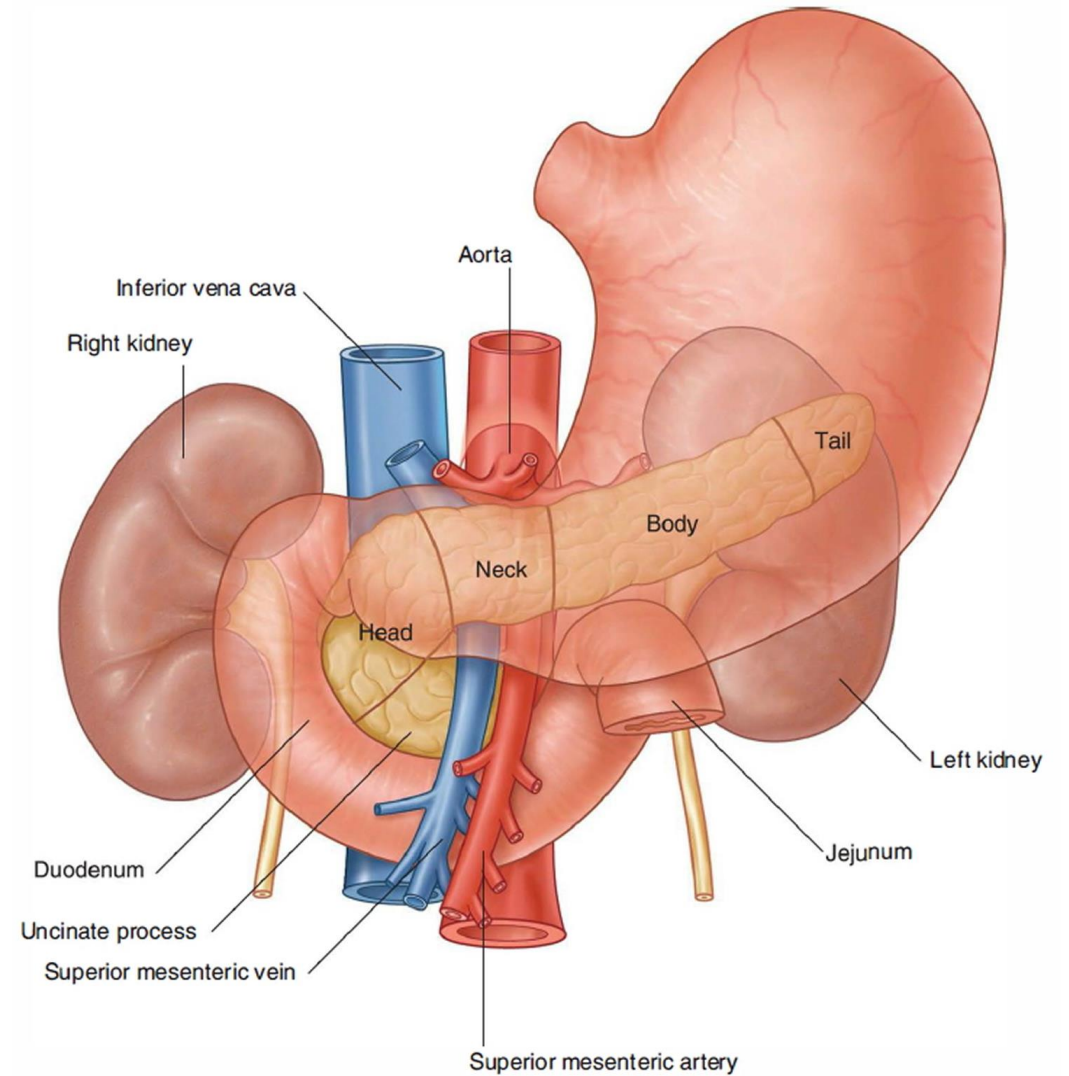


1. Pancreas lie at the level of T12\_L2  
vertebrae ?

# Relations

## Anteriorly

1. Transverse colon
2. Transverse Mesocolon
3. Lesser sac
4. Stomach
5. Superior mesenteric artery and vein (in front of uncinete process)

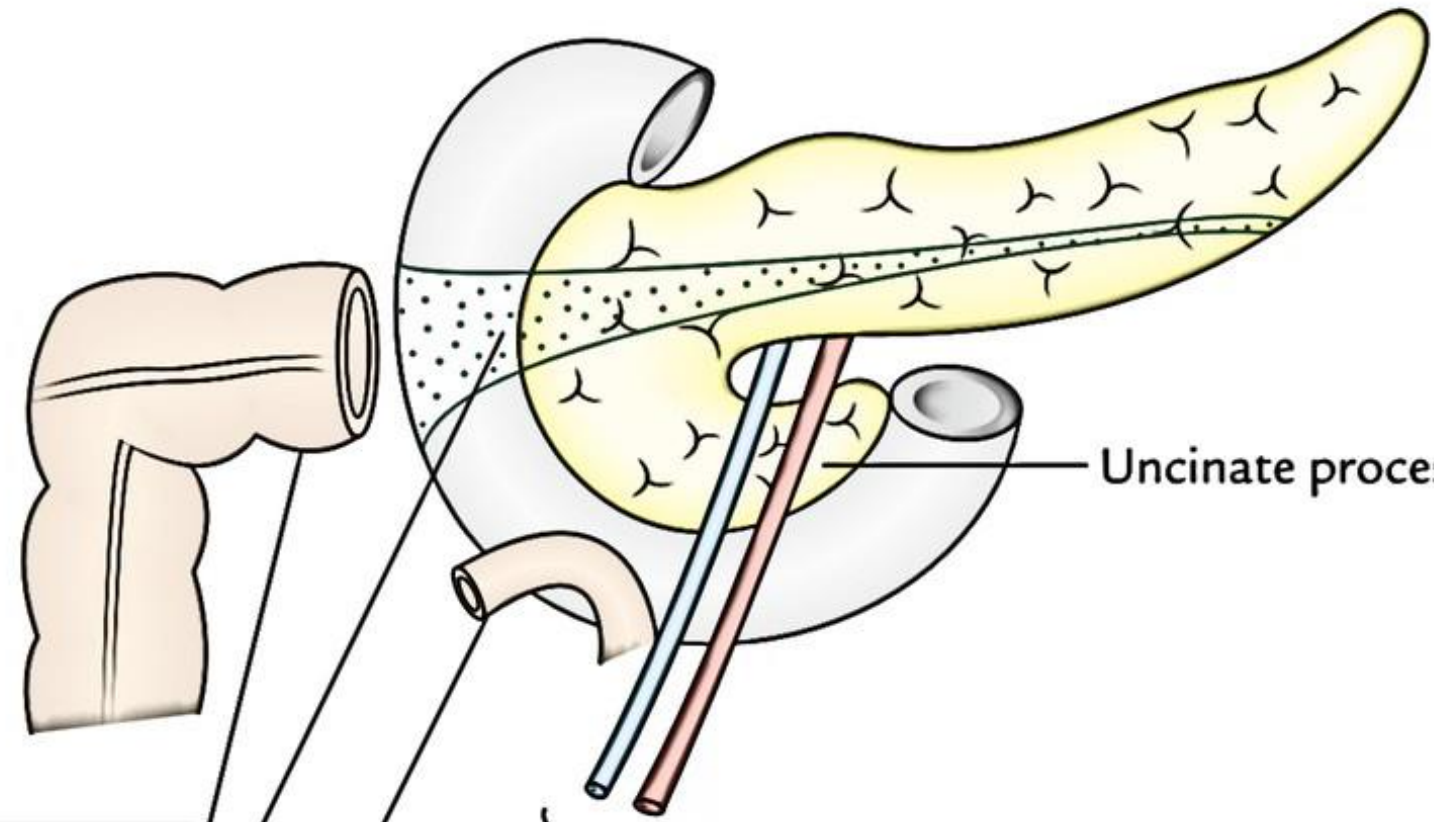


Uncinate process of pancreas

**Anterior relations**



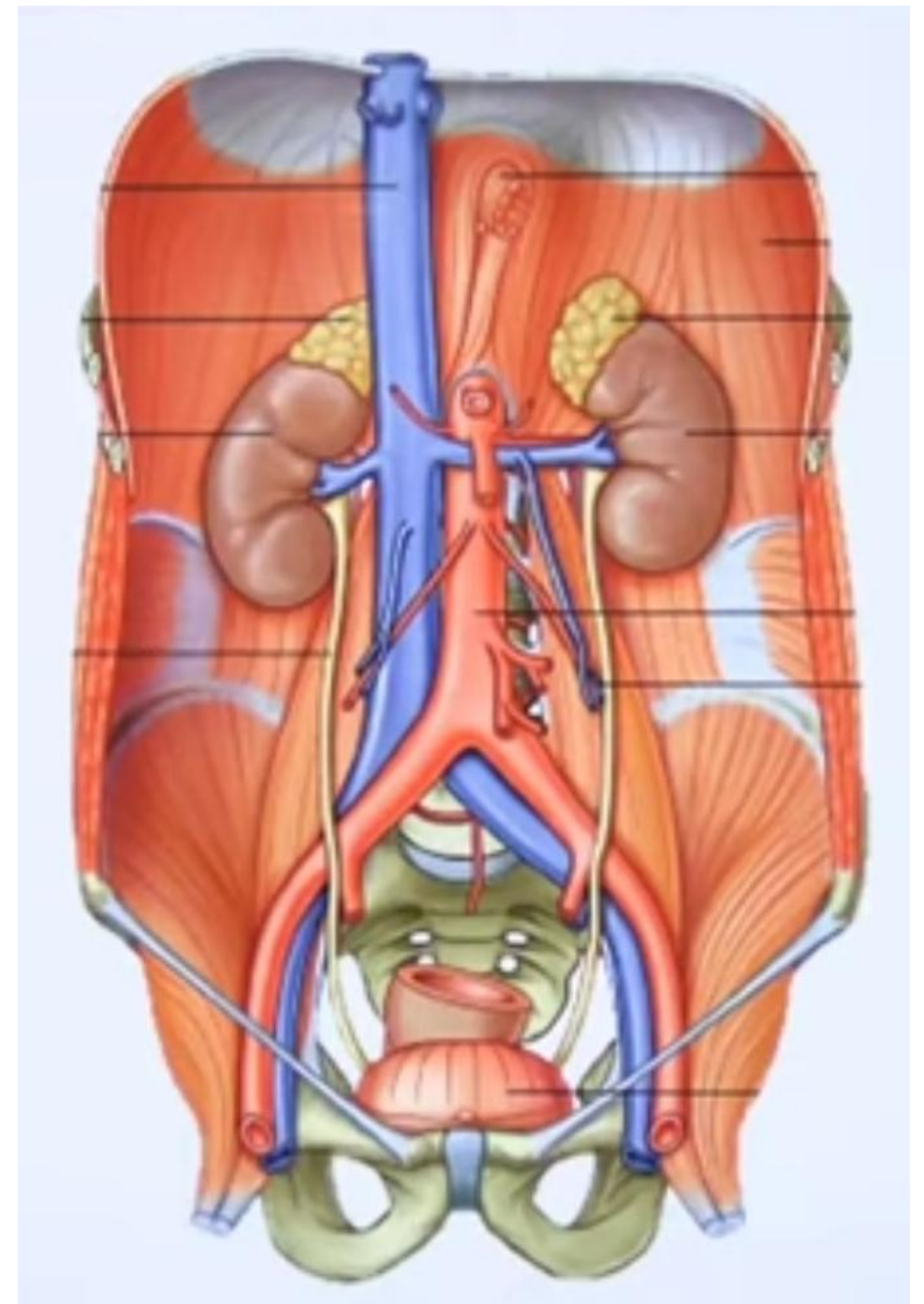
- 1. Transverse colon
- 2. Transverse mesocolon
- 3. Jejunum
- 4. Superior mesenteric vessels



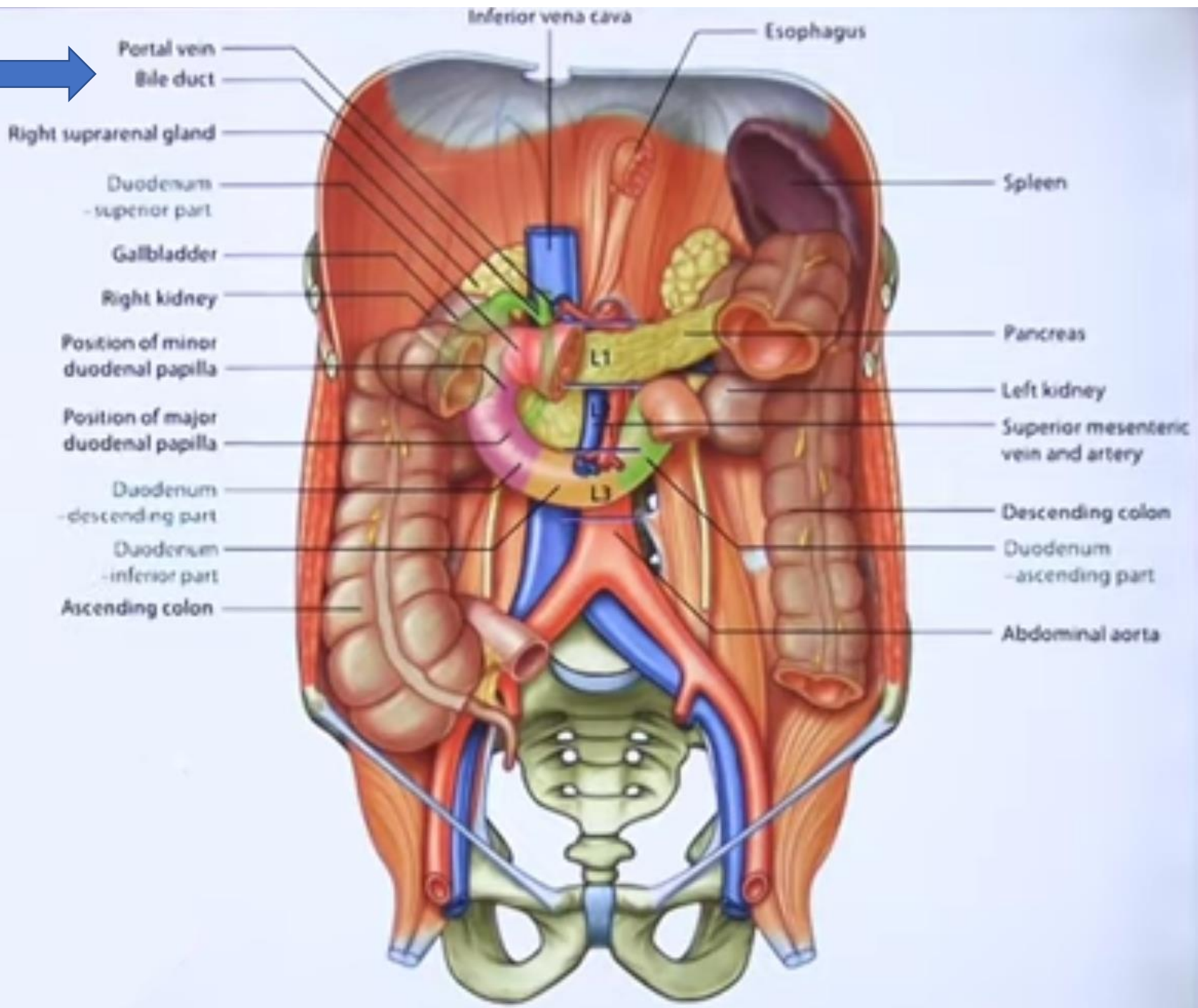
# Posterior relations

## From right to left

1. Bile duct
2. Portal and splenic veins
3. Inferior Vena Cava
4. Aorta
5. Origin of superior mesenteric artery
6. Left psoas muscle
7. Left kidney
8. Left suprarenal gland
9. Hilum of spleen







# Posterior relations

1 Inferior Vena cave

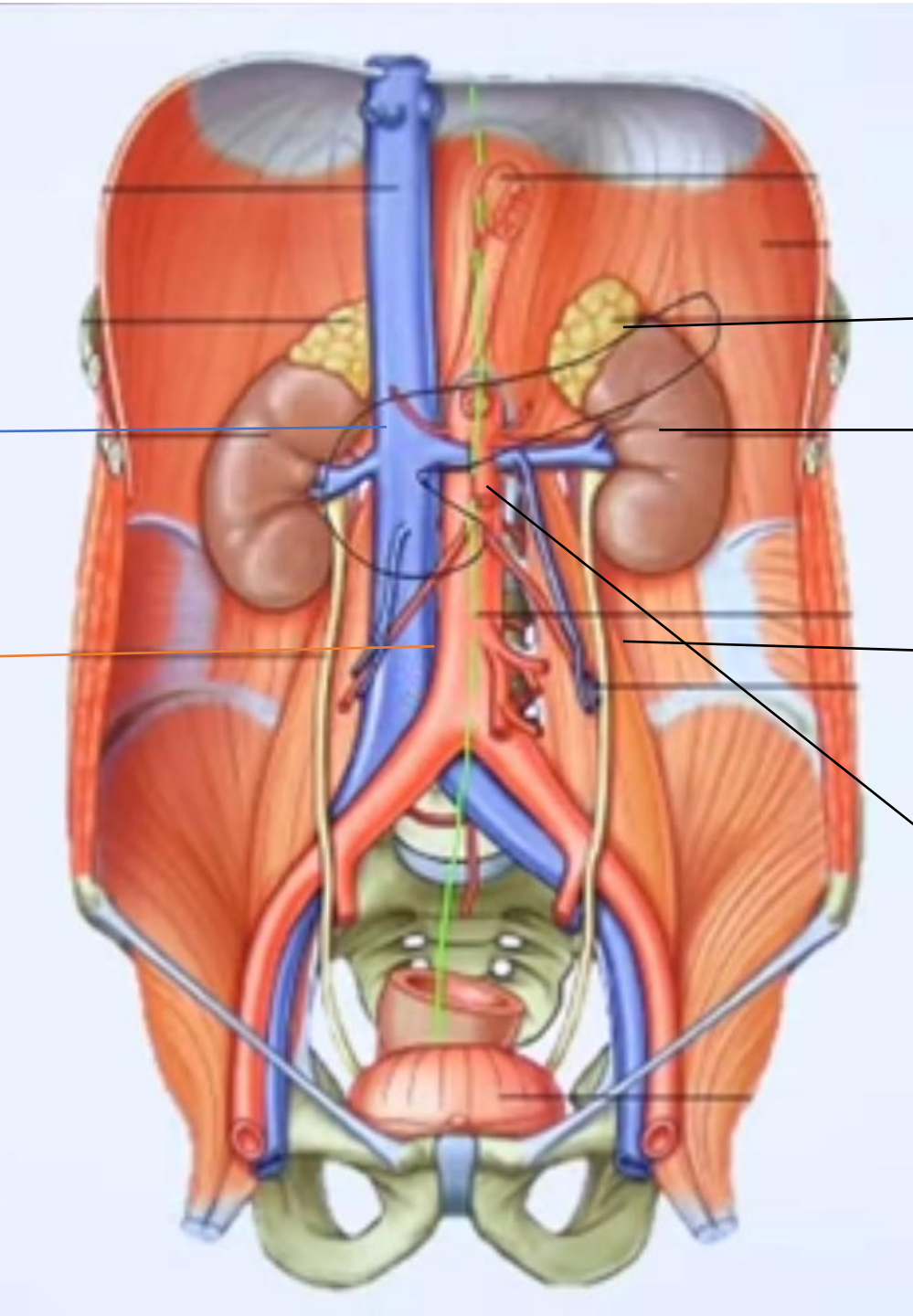
2 Aorta

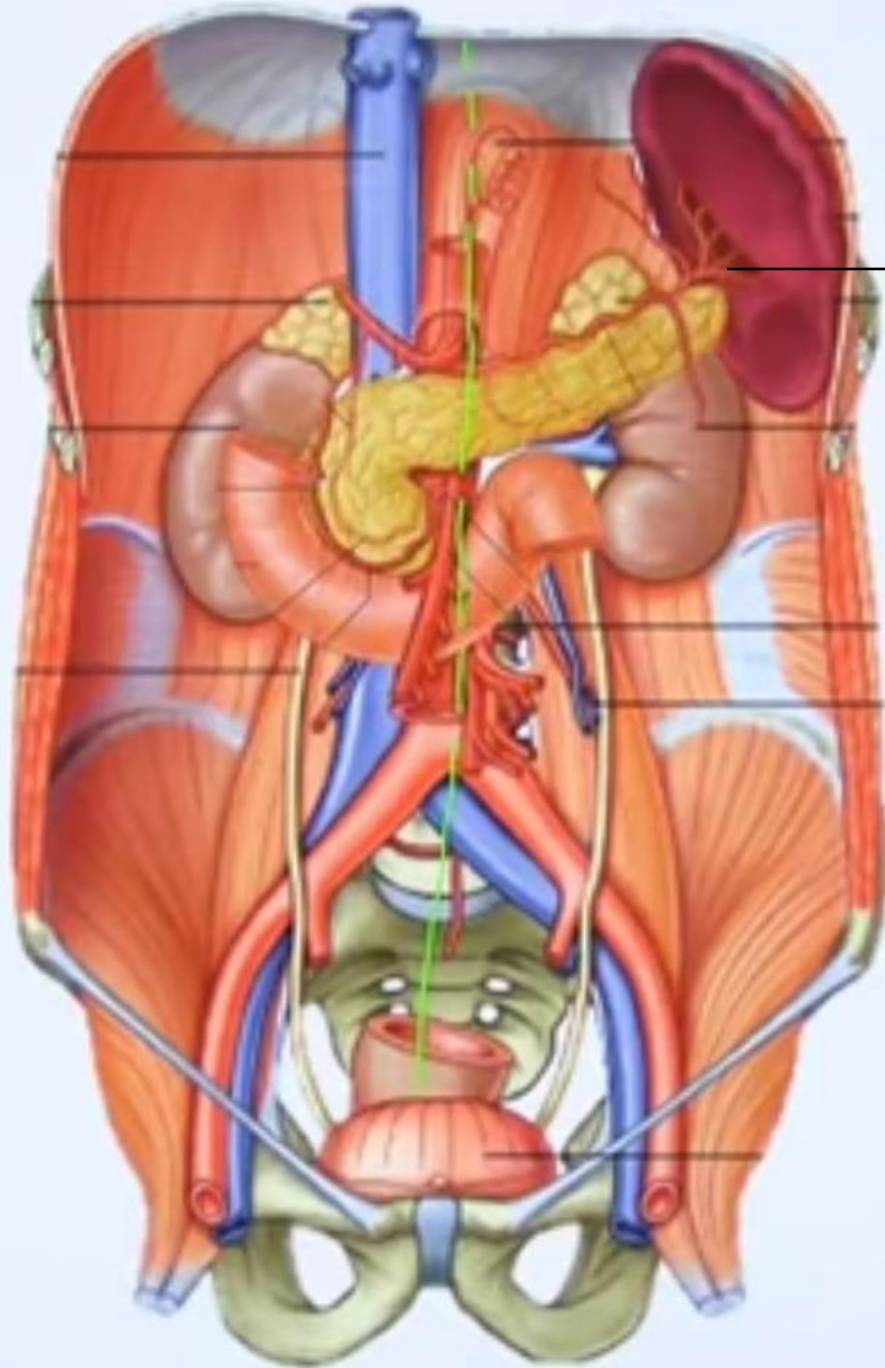
Left 5  
Suprarenal gland

Left 6  
Kidney

Left psoas muscle 4

Superior mesenteric artery 3





7

Hilum of  
Spleen

# Pancreatic ducts

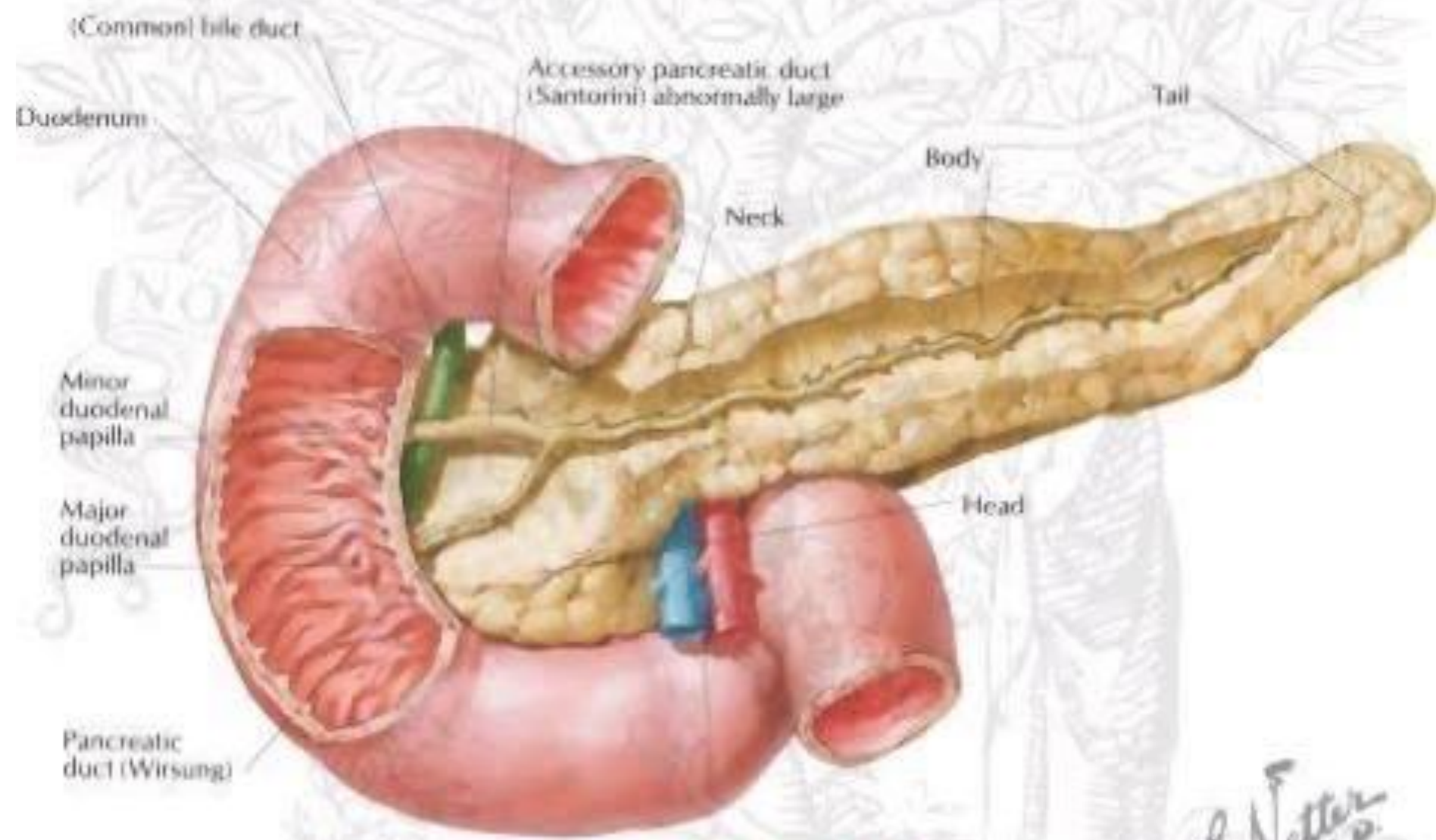
- **Main pancreatic duct**

- It begins in tail and runs the length of the gland.
- It opens into the 2<sup>nd</sup> part of duodenum at about its middle with the bile duct on the **Major Duodenal papilla**.

- **Accessory pancreatic duct**

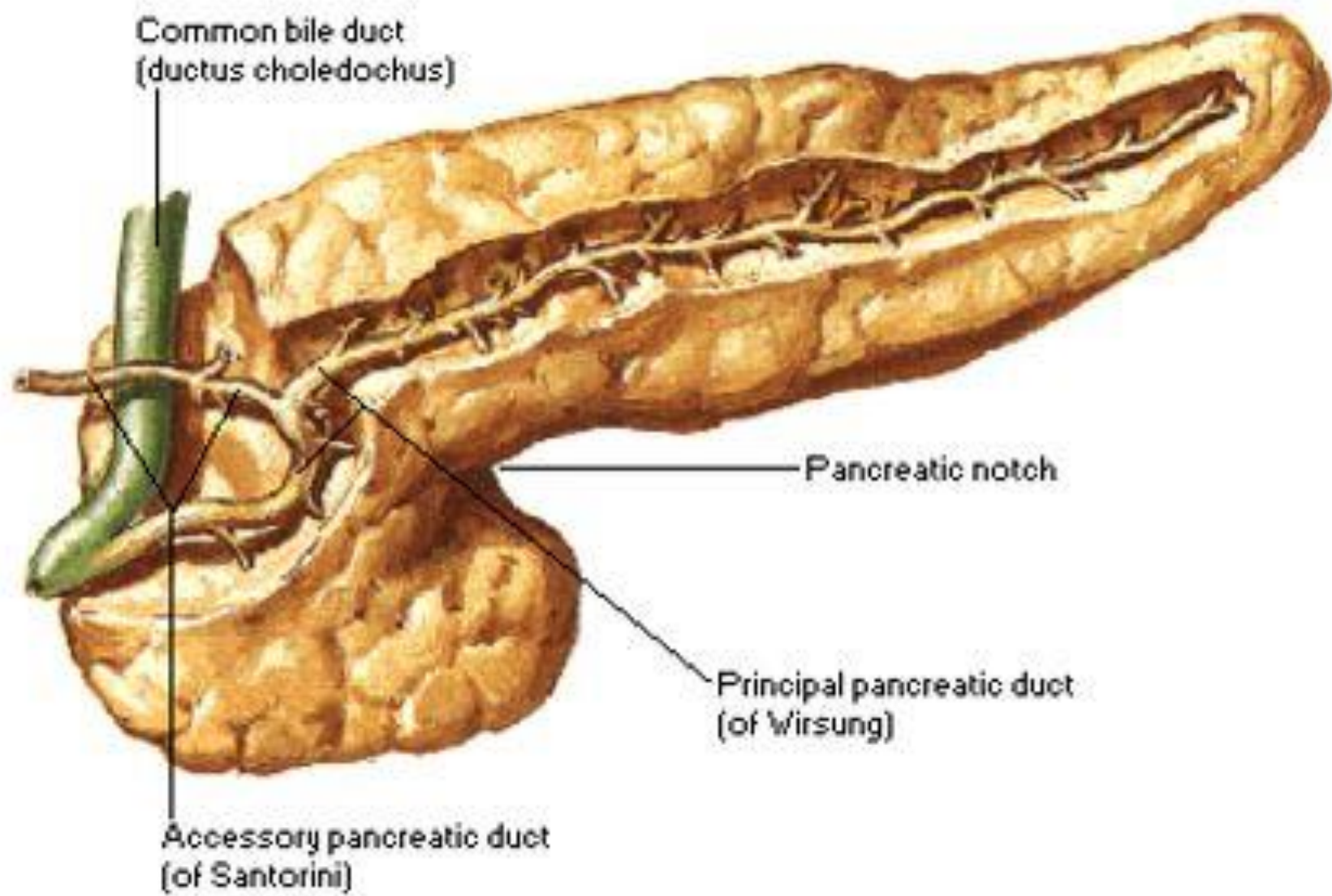
- The accessory pancreatic duct when present drains the **upper part of head of pancreas** and then open into the duodenum a short distance above the main duct on the **minor duodenal papilla**





# PANCREAS

F. Netter  
M.D.

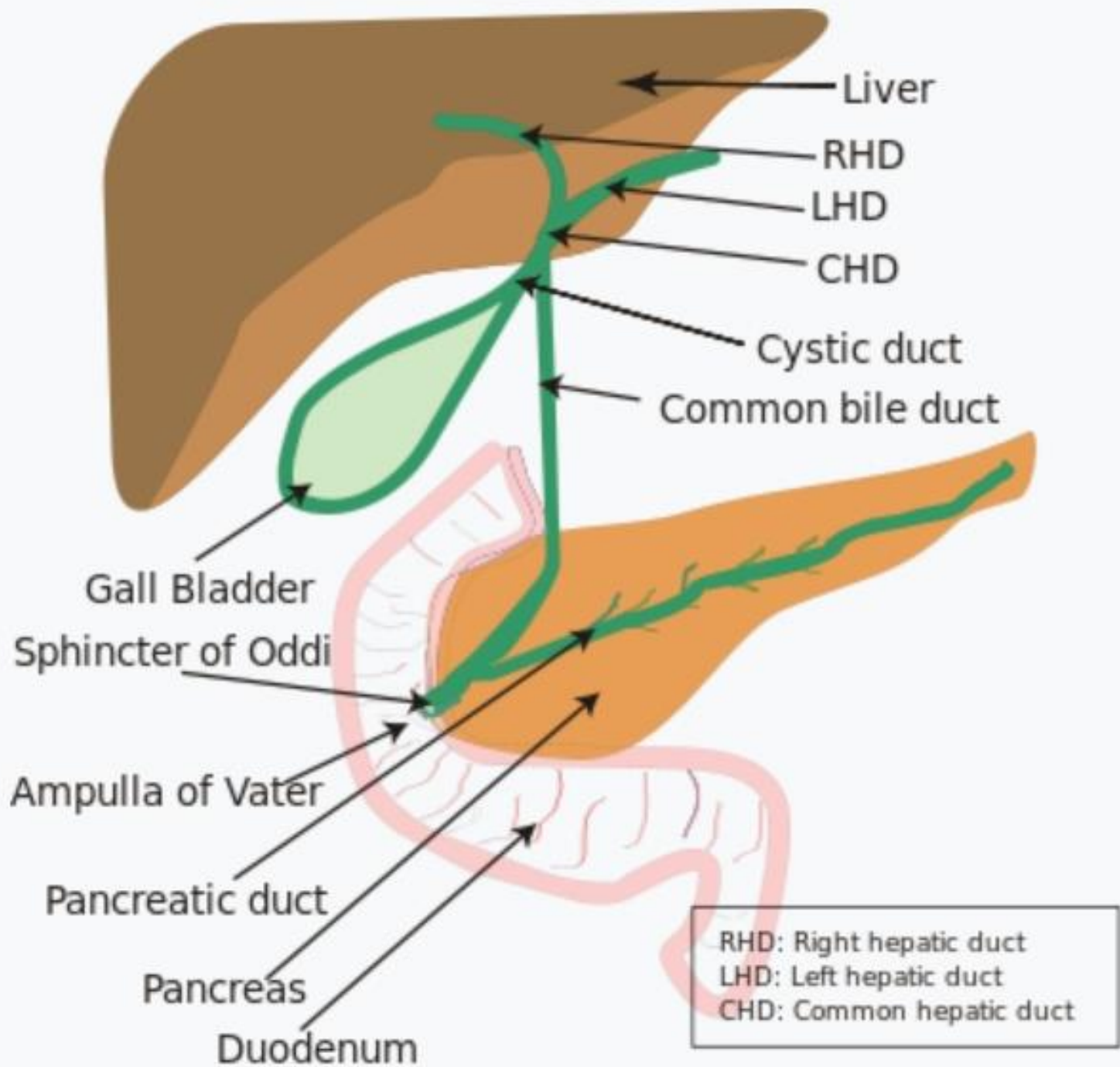


## Ampulla of vater

- The **ampulla of Vater**, also known as the hepatopancreatic ampulla or the **hepatopancreatic duct**, is formed by the union of the **pancreatic duct** and the **common bile duct**.

## Sphincter of oddi

The sphincter of Oddi is a muscular valve in your digestive tract. It helps move bile and juices from your pancreas into your small intestine.





# Blood supply of pancreas

## Splenic Artery

It is the branch of **Celiac artery** and supply

1. Neck
2. Body and tail

## Superior pancreaticoduodenal artery

it is the branch of **gastroduodenal artery** and supplies the

1. Upper half of head

## Inferior pancreaticoduodenal artery

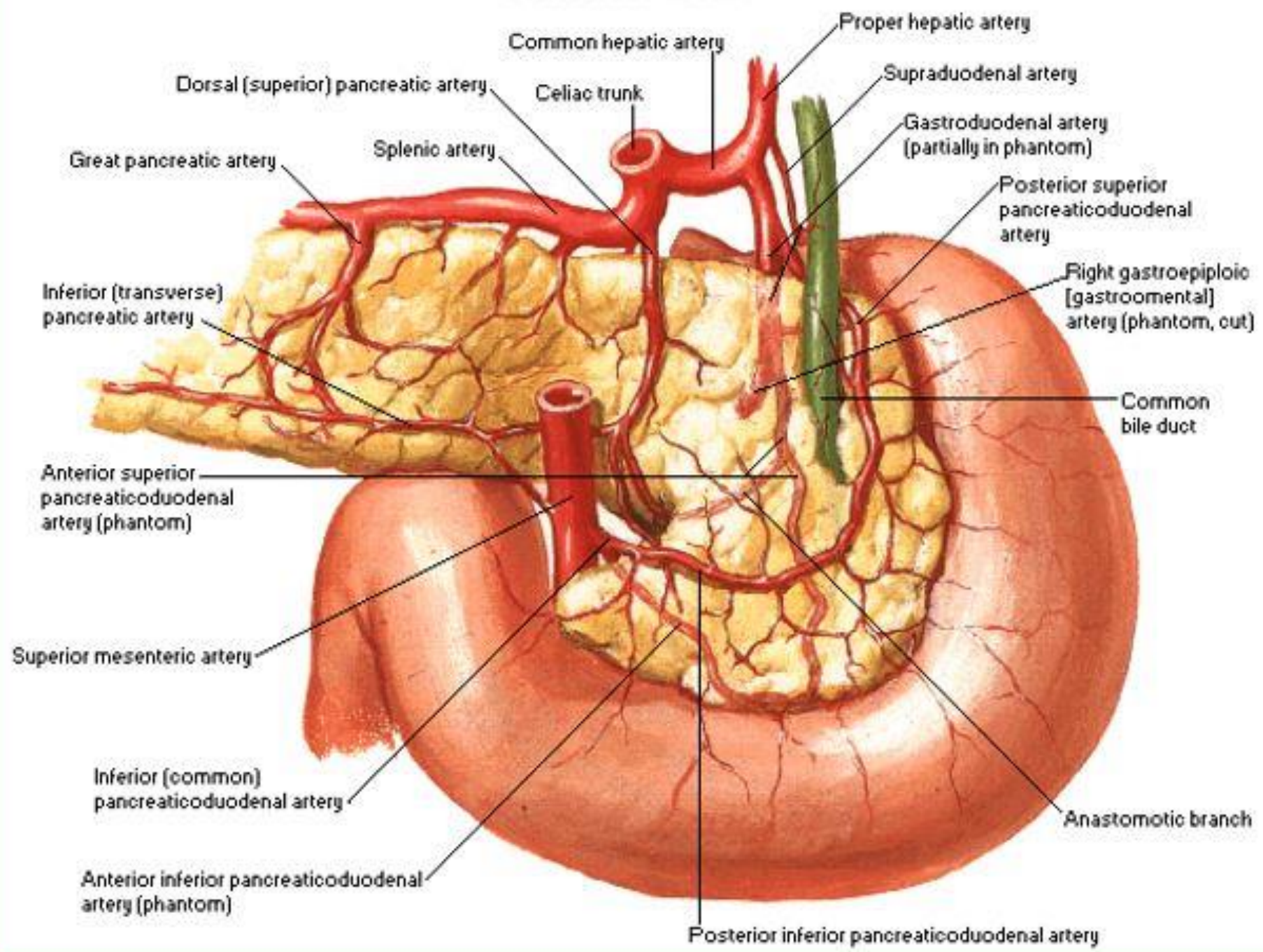
it is the branch of **superior mesenteric artery** and supplies

1. Lower Half of head

# Veins

- Venous return is by numerous small veins into **Splenic veins**
- The upper half of head is drained by **superior pancreaticoduodinal vein** into ***portal vein*** .
- The lower half of head is drained by **inferior pancreaticoduodinal vein** into ***superior mesenteric Vein***

# Posterior View



- Common hepatic artery
- Proper hepatic artery
- Dorsal (superior) pancreatic artery
- Celiac trunk
- Supraduodenal artery
- Gastroduodenal artery (partially in phantom)
- Great pancreatic artery
- Splenic artery
- Posterior superior pancreaticoduodenal artery
- Inferior (transverse) pancreatic artery
- Right gastroepiploic [gastrointestinal] artery (phantom, cut)
- Common bile duct
- Anterior superior pancreaticoduodenal artery (phantom)
- Superior mesenteric artery
- Inferior (common) pancreaticoduodenal artery
- Anterior inferior pancreaticoduodenal artery (phantom)
- Posterior inferior pancreaticoduodenal artery
- Anastomotic branch



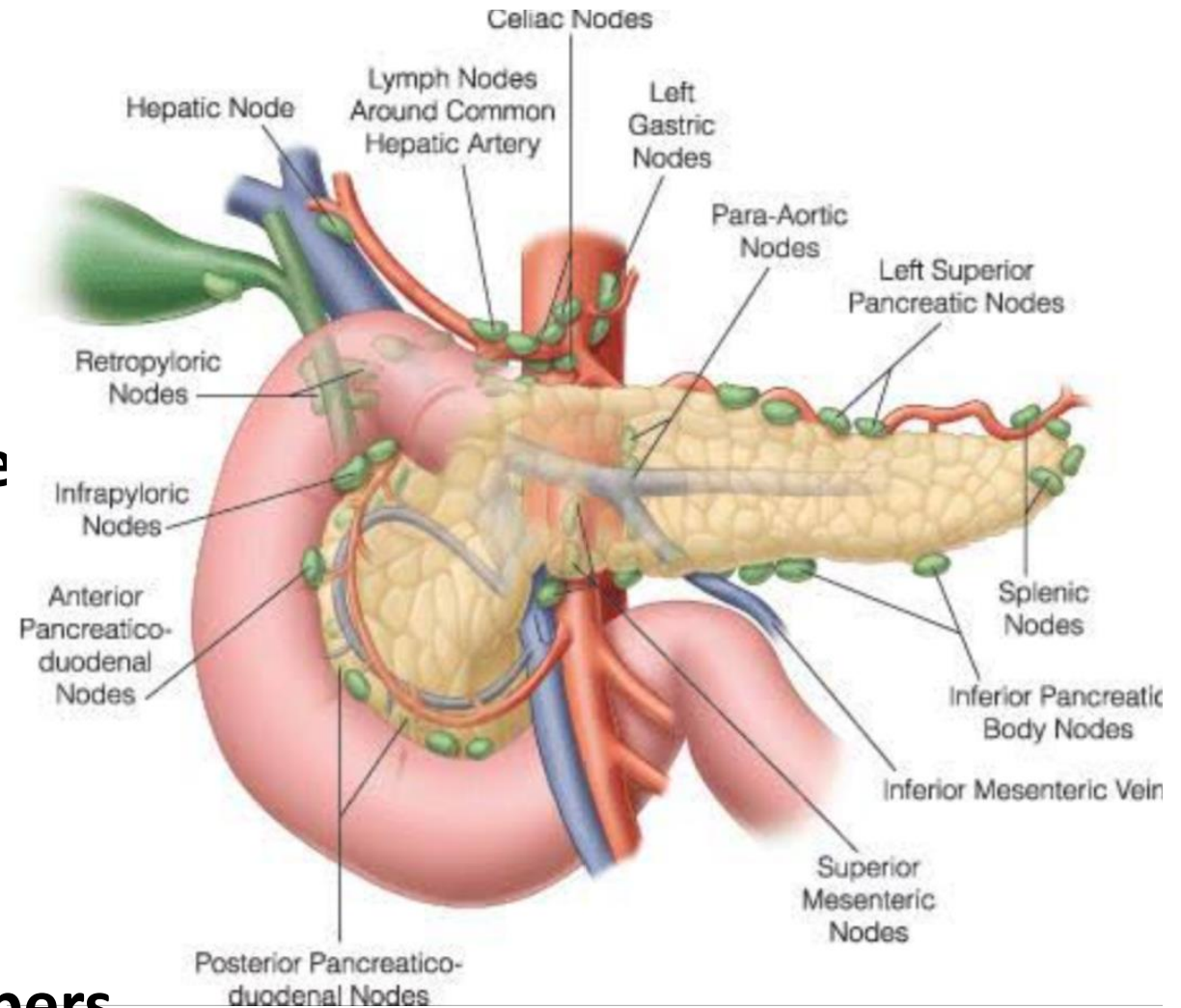


# Lymph Drainage

- The efferent vessels drain into the
  1. Celiac lymph nodes.
  2. Superior mesenteric lymph node

# Nerve supply

- Nerve supply is through
  1. Sympathetic nerve fibers
  2. Parasympathetic (vagal) nerve fibers



## Clinical Case presentation

- A **45** year old male with a history of **alcohol abuse** presented with severe **epigastric abdominal pain** that lasted for approximately *10 hours* .The pain was sudden in onset radiating to back and associated with nausea and vomiting .His last alcoholic drink was one day prior to presentation.Whats your diagnosis?What test you will prescribe to diagnose?

# ACUTE PANCREATITIS

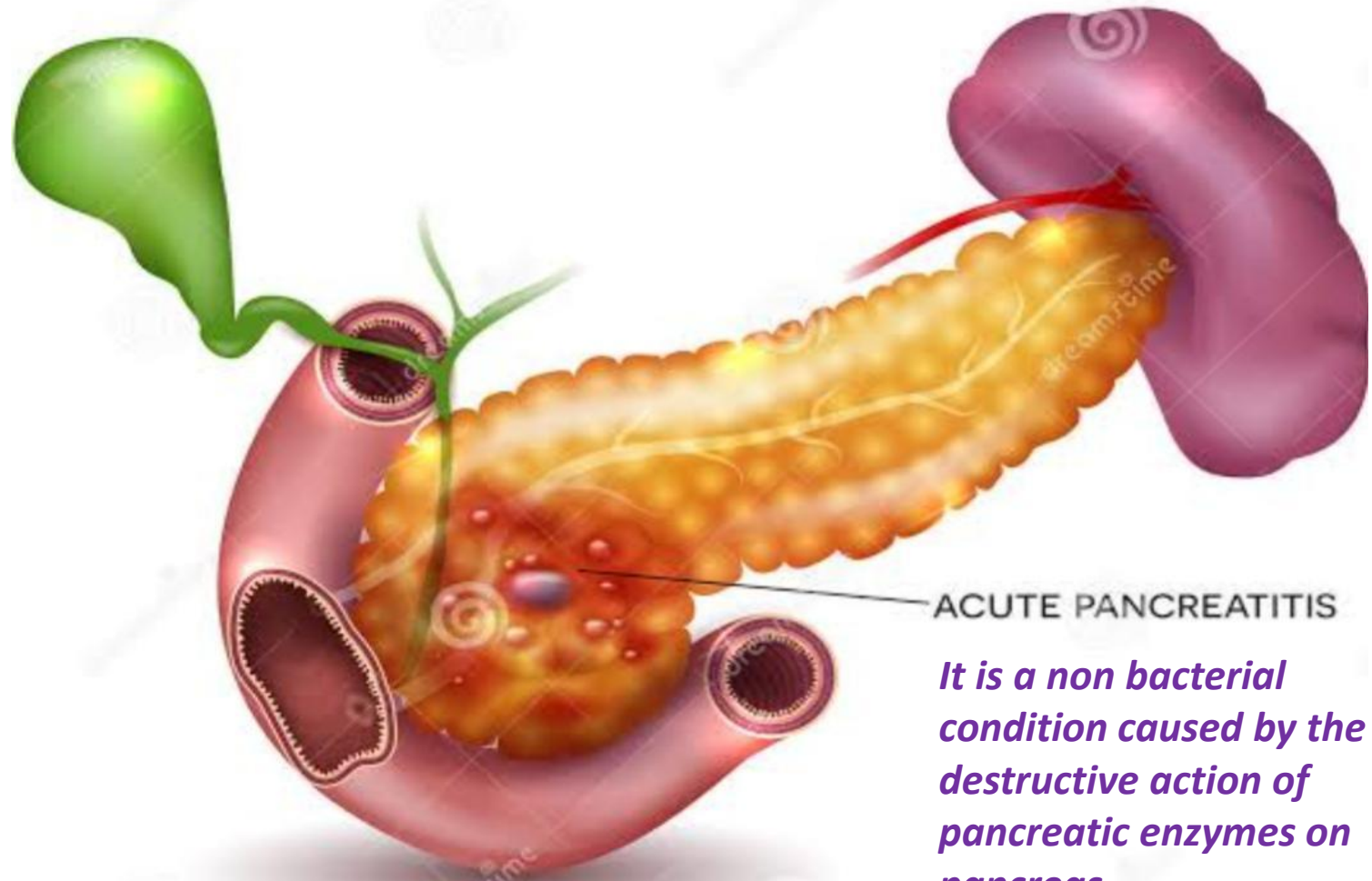
## Diagnosis

*Serum lipase*

*elevated*

*Serum amylase*

*elevated*



ACUTE PANCREATITIS

*It is a non bacterial condition caused by the destructive action of pancreatic enzymes on pancreas*



***Any questions?***