

Duodenum

Stomach

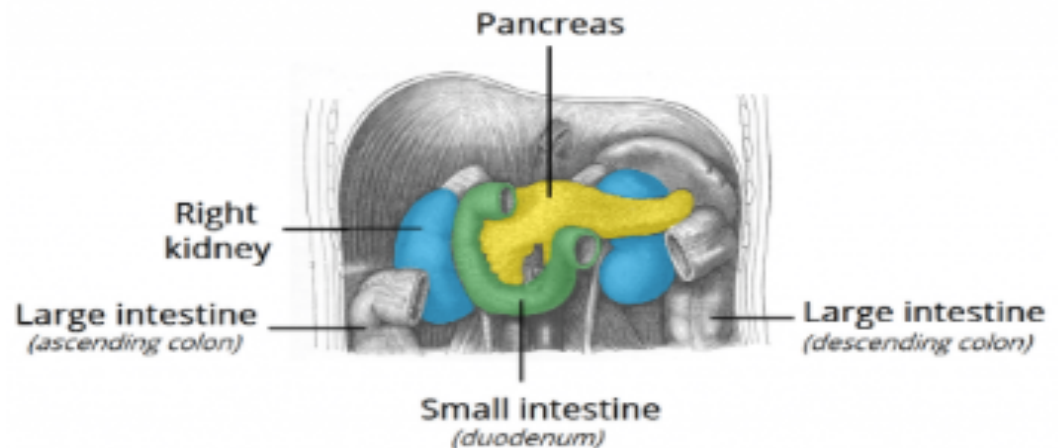
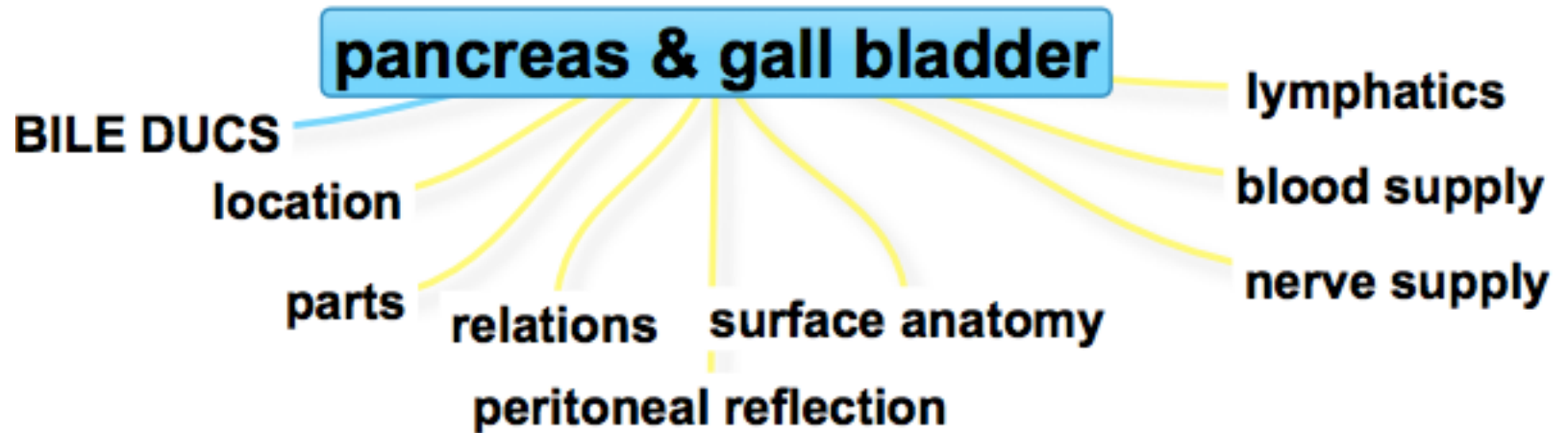
Colon

Jejunum

L3 Pancreas & Biliary System

Ileum

MIND MAP



YouTube

[Dr. Ahmed kamal PANCREAS](#)

Pancreas

LOCATION:

Epigastrium and left hypochondriac regions,
at the level of **L1 (transpyloric plane)**.

Retro-peritoneal

FUNCTIONS:

Endocrine (hormone) & Exocrine (digestive enzyme)

LENGTH & WEIGHT:

6-10 inches

60-100 grams

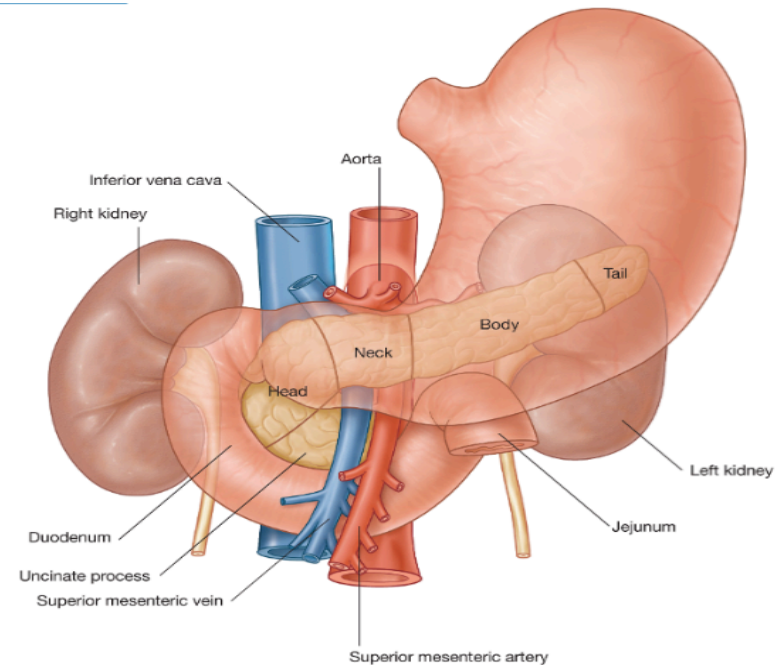
RELATIONS:

Anterior Relations

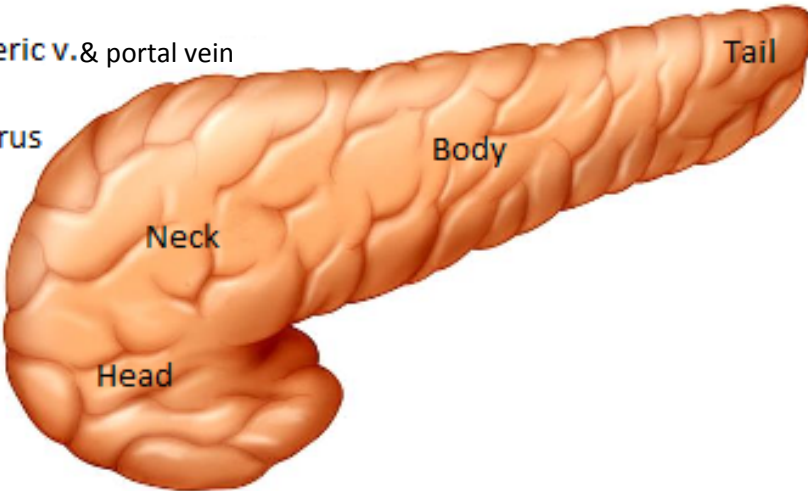
- Stomach.
separated by lesser sac
- Transverse Colon.
Transverse Mesocolon.

Posterior Relations

- IVC & Aorta
- Portal & Splenic vein
- Origin of Superior Mesenteric Vessels
- Bile Duct
- Splenic hilum
- Left psoas muscle
- Left adrenal gland & Left renal vessels, Upper third of Left kidney



Pancreas Divisions



NECK

- Anterior to superior mesenteric v. & portal vein
- Lies under and supports pylorus

BODY

- Triangular in cross section
- Embeds splenic vein in its posterior surface

TAIL

- Lies at T12, in the splenic ligament and ends at splenic hilum
- Posterior to Left colic flexure (Splenic Flexure)

HEAD

- Related to 2nd and 3rd parts of the duodenum on the right
- Includes **Uncinate Process** of pancreas, behind superior mesenteric v.

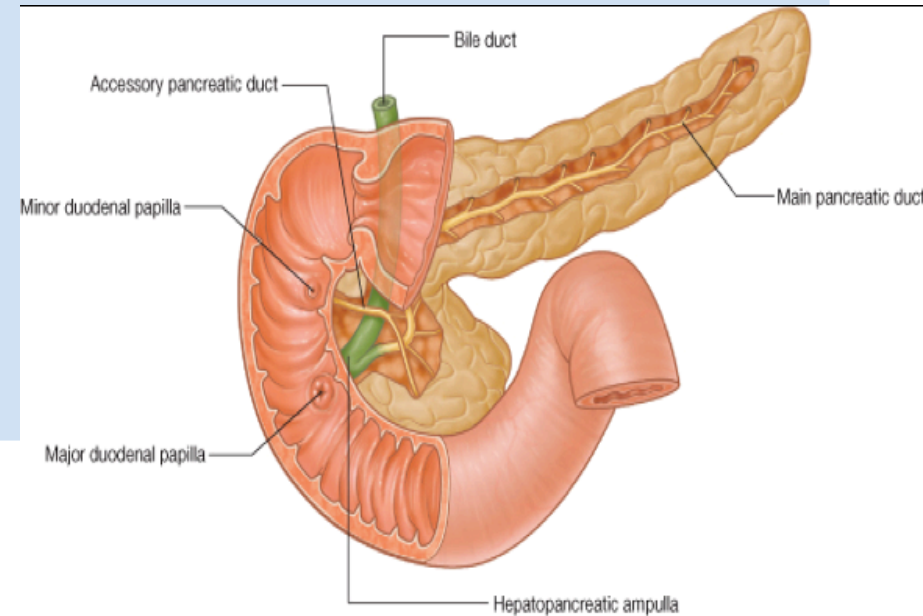
Pancreatic Ducts

MAIN PANCREATIC DUCT/ DUCT OF WIRSUNG

- Drains the **whole pancreas** except the superior portion of the head into the duodenum.
- Joins **common bile duct** and opens into the hepatopancreatic ampulla (also known as **Ampulla of Vater**) the ampulla are surrounded by circular muscle, (**sphincter of Oddi**).
- This ampulla opens into the duodenum via **Major Duodenal Papilla**.

ACCESSORY PANCREATIC DUCT/ DUCT OF SANTORINI

- Drains **superior portion of the head** into the 2nd portion of the duodenum via **Minor Duodenal Papilla**.



Blood Supply of Pancreas

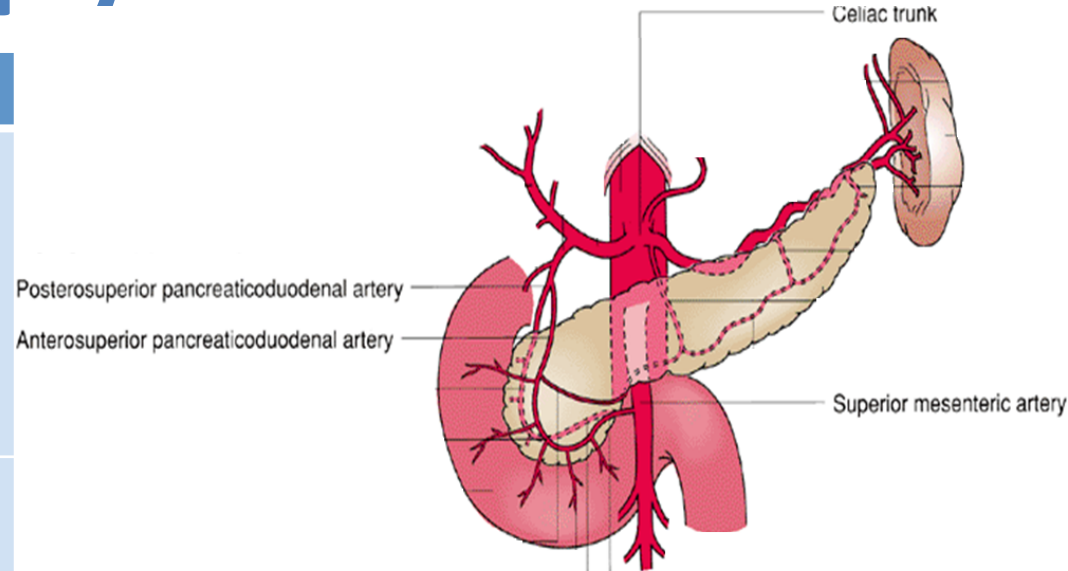
ARTERIES

Head & Neck:

- ✓ - Celiac Trunk
via **Superior Pancreatico-duodenal Artery**
- ✓ - Superior mesenteric artery
via **Inferior Pancreatico-duodenal Artery**

Body & Tail:

- ✓ 8-10 branches of Splenic artery



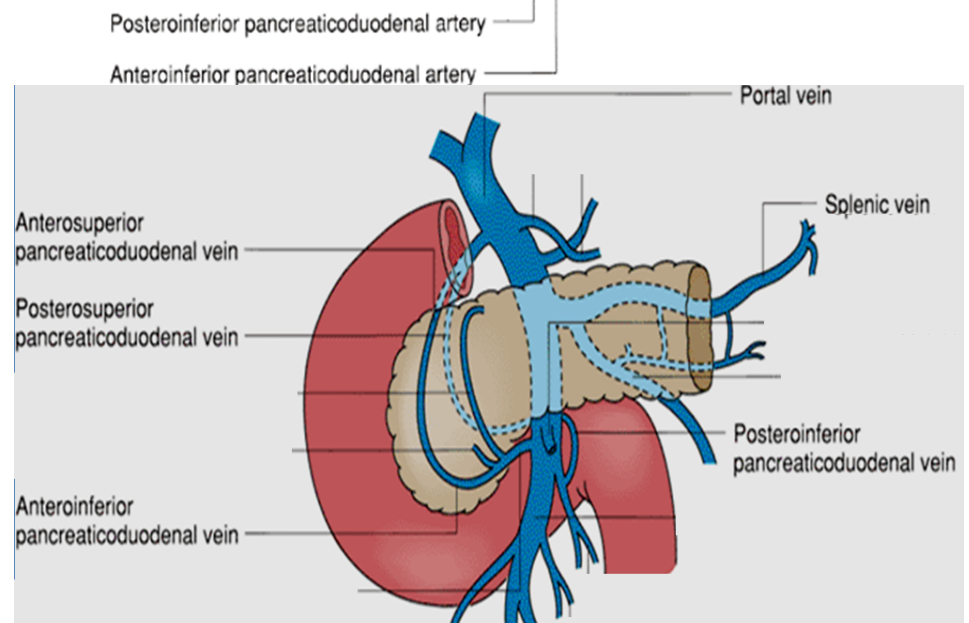
VEINS

Head & Neck:

- ✓ **Superior Pancreatico-duodenal Vein**
- ✓ **Inferior Pancreatico-duodenal Vein**
(formed by **ant&post venous arcades**)

Body & Tail:

- ✓ Splenic vein (tributary of portal vein).



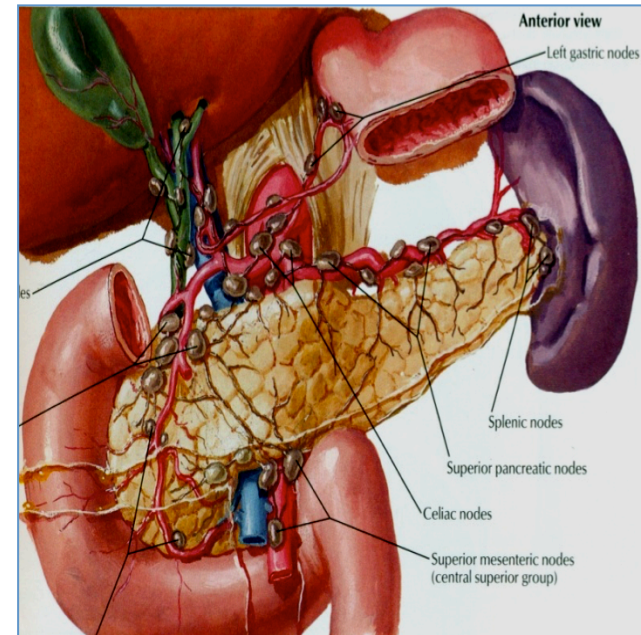
Nerve Supply & Lymphatic Drainage of Pancreas

LYMPHATIC DRAINAGE:

1. There is a network which drains into pyloric, hepatic and splenic nodes then into the celiac and superior mesenteric lymph nodes.

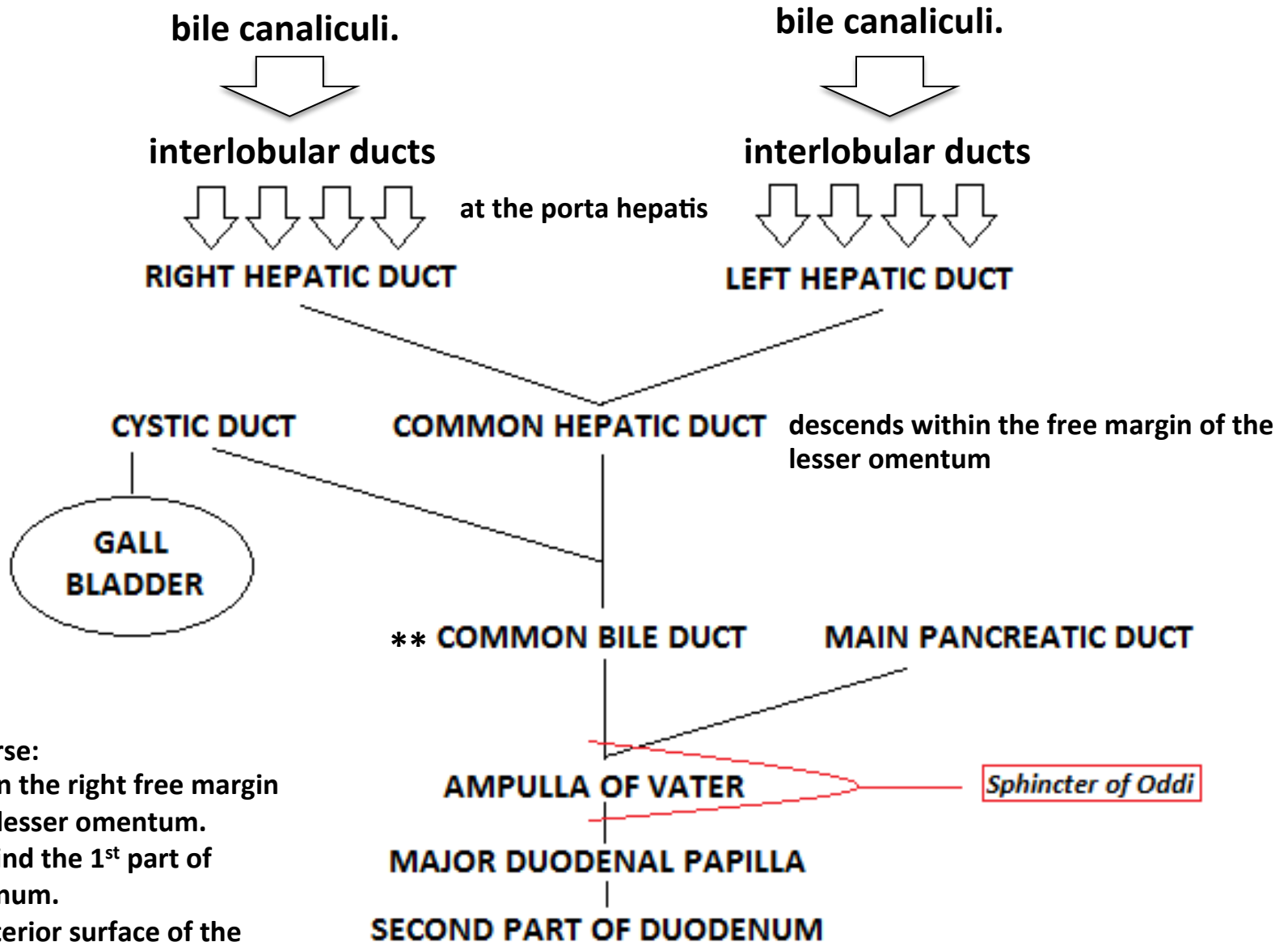
NERVE SUPPLY:

1. Sympathetic fibers: From splanchnic nerves. (**Inhibits secretions**)
2. Parasympathetic fibers: From Vagus Nerve. (**Induces endocrine & exocrine secretions**)



The Bile Ducts

Bile is secreted by the **liver cells**



****Course:**

it lies in the right free margin of the lesser omentum.

→ behind the 1st part of duodenum.

→ posterior surface of the head of the pancreas

Gall Bladder

The biliary system :

bile ducts, liver & gallbladder

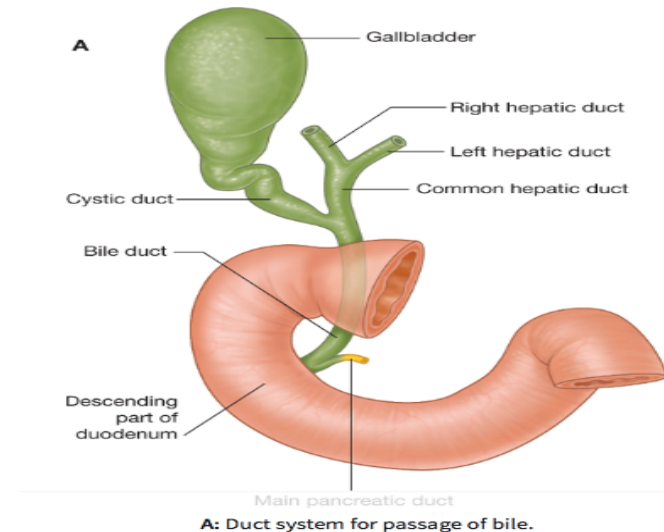
FUNCTIONS:

Concentrates and stores bile, excretes cholesterol, secretes mucus, absorbs bile salts.

CAPACITY:

30-50 ml

RELATIONS:



Anterior Relations	Posterior Relations
<ul style="list-style-type: none"> Abdominal wall(fundus) Inferior surface of liver 	<ul style="list-style-type: none"> Transverse colon 1st and 2nd parts of duodenum

Divisions:

Fundus = contact with the anterior abdominal wall

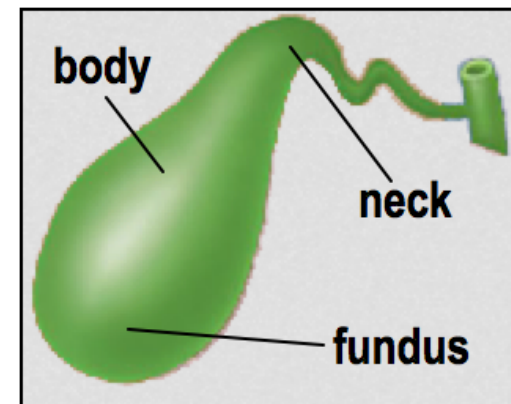
At the level of **9th right costal cartilage.**

Projects from under the **inferior surface of the liver.**

completely surrounded by peritoneum

Body = In contact with liver. (upwards/backwards/left)

Neck = Continuous with cystic duct.



Gall Bladder

BLOOD SUPPLY	NERVE SUPPLY	LYMPHATIC DRAINAGE
<ul style="list-style-type: none">○ Cystic artery (branch of hepatic artery)○ Cystic vein (drains into portal vein)	<ul style="list-style-type: none">○ CELIAC PLEXUS: Formed by sympathetic and parasympathetic vagal fibers.○ Hormone involved: cholecystokinin	<ul style="list-style-type: none">○ Drains into <u>cystic</u> lymph nodes.○ then, into <u>hepatic</u> lymph nodes.○ Then, into <u>celiac</u> lymph nodes.

Cystic Duct:

S-shaped

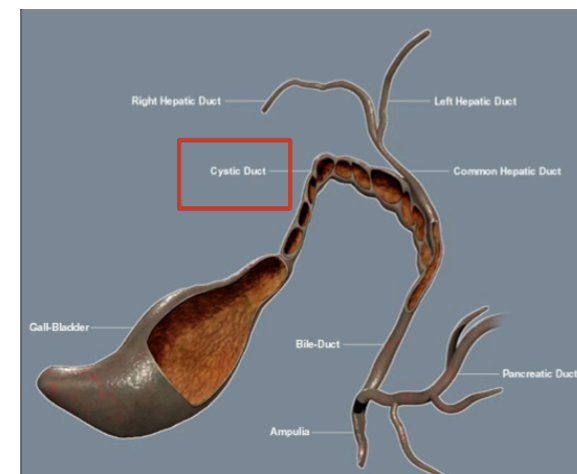
Descends in the right free margin of the lesser omentum.

spiral fold:

raised mucous membrane of the cystic duct.

spiral valve:

keep the lumen constantly open.



MCQs

1- which of the following is NOT an anterior relation of the pancreas:

- A. Stomach.
- B. Transverse Colon.
- C. Transvers mesocolon.
- D. Portal vein.

2- which part of the pancreas has the uncinete process:

- A. Head.
- B. Neck.
- C. Body.
- D. Tail.

3- relating to the main pancreatic duct:

- A. Drains the entire pancreas.
- B. Opens into the major duodenal papilla
- C. Opens into the minor duodenal papilla.
- D. Drains superior portion of head.

4- inferior pancreato-duodenal artery comes from:

- A. Celiac trunk.
- B. Inferior mesenteric artery.
- C. Superior mesenteric artery.
- D. Splenic artery.

5- sympathetic supply to the pancreas comes from:

- A. Splanchnic nerves.
- B. Vagus nerves.
- C. Lumbar plexus.
- D. Non of the above.

6- which part of the gall bladder is related to the abdominal wall anteriorly:

- A. Neck.
- B. Body.
- C. Fundus.
- D. A & C.

7-Pancreas is:

- A. An endocrine organ
- B. An exocrine organ
- C. Both

8-The pancreatic juice which aids in digestion is secreted into:

- A. the Oesophagus
- B. Stomach
- C. Duodenum
- D. Ileum

9-which one of these lie posterior to pancreas:

- A. Hilum of the spleen.
- B. Stomach
- C. Transverse colon & transverse mesocolon

10-The bile canaliculi open into the:

- A. Right and left hepatic ducts.
- B. Cystic duct
- C. The common bile duct
- D. Interlobular ducts

MCQs

1-The Form of common bile duct is by join of:

- A. Bile canaliculi and interlobular ducts
- B. Right and left hepatic ducts and common hepatic duct
- C. Cystic duct and common hepatic duct

2-The superior mesenteric vessels emerge from inferior border of:

- A. Head
- B. Neck
- C. Body
- D. Tail

3-The peritoneum completely surrounds which part of gallbladder:

- A. Fundus
- B. Body
- C. Neck

4-Accessory duct of pancreas "Santorini" receive tributary from?

- A. Tail of pancreas
- B. Superior portion of the head of pancreas
- C. Inferior portion of head of pancreas
- D. Uncinate process

5-Fundus of Gallbladder contact with the anterior abdominal at?

- A. Tip of the ninth right costal cartilage.
- B. Tip of the fourth right costal cartilage.
- C. C3
- D. Tip of the ninth left costal cartilage

6-Which part of pancreas may get injured during splenectomy :

- A. Head
- B. Body
- C. Tail
- D. Neck

7-Which part of pancreas is supplied by Splenic artery ?

- A. Body
- B. Head
- C. Neck
- D. Tail
- E. A+D

8-Function of the gallbladder:

- A. Storage of bile
- B. Transport of the bile
- C. Production of the bile

9-The neck of the gallbladder continuous with:

- A. Bile duct
- B. Common hepatic duct
- C. Cystic duct

10-main duct (of wiring) runs the entire length of pancreas beginning from??

- A. head
- B. neck
- C. body
- D. tail



Anatomy Team

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