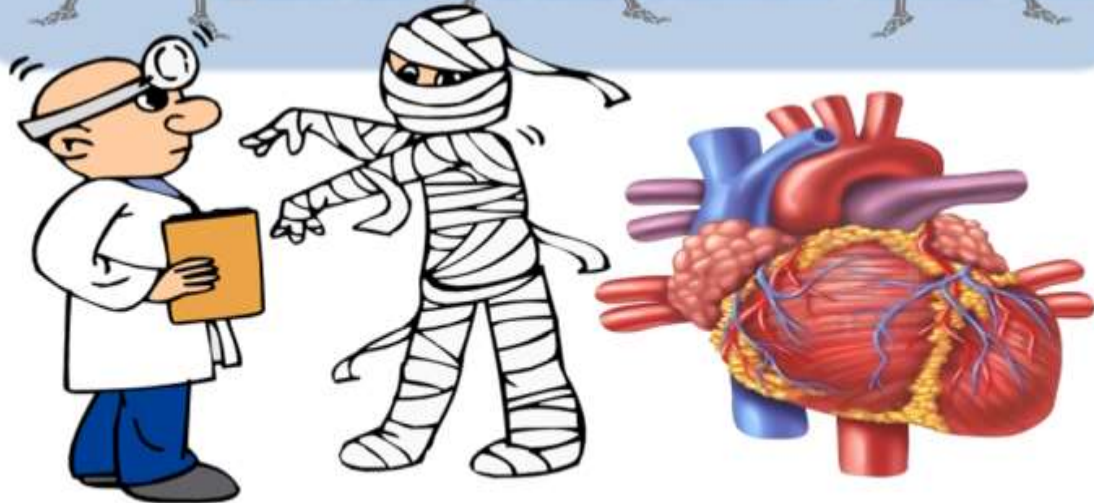




Anatomy Team 432

Cardiovascular Block



LECTURE (3)

MAJOR VEINS OF THE BODY

Done by : Reem Al Rakaf

تنويه : هذا العمل لا يعتبر مصدر رئيسي للمذاكرة وإنما هو للمراجعة فقط

If there is any mistake please feel free to contact us:

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OBJECTIVES

1. Define the 'vein' and understand the general principle of the veins.
2. Describe the role of the superior and inferior vena cavae & list the tributaries of each vein.
3. List major veins in the head, neck, thorax, abdomen, upper & lower extremities.
4. Describe the hepatic portal vein and list its tributaries.

تنويه : يوجد اختلاف كبير بين سلايدز الأولاد والبينات ، وننصح كل طرف بتحميل سلايد الطرف الآخر

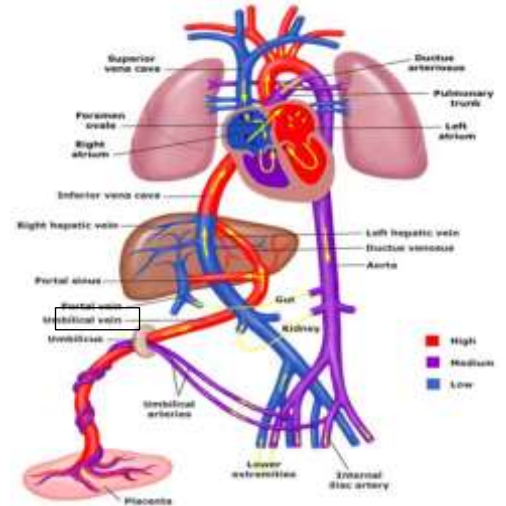


General Principles

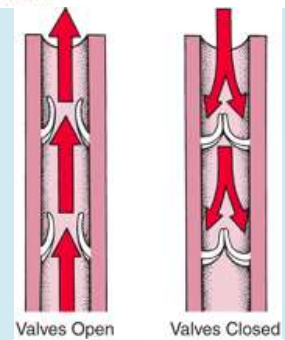
Veins are the vessels that carry blood towards the heart.



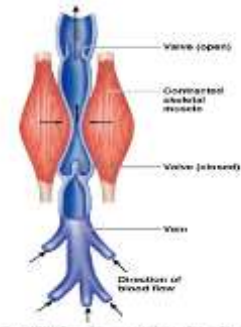
- All veins, carry deoxygenated blood.
 - except the pulmonary and umbilical veins.
- Pulmonary veins → oxygenated blood from the lungs(Postnatal)
 Umbilical veins → oxygenated blood from the placenta (prenatal)



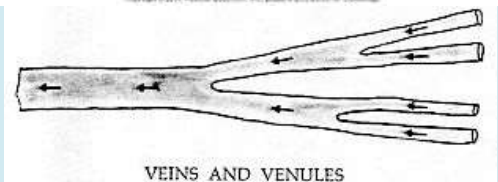
Veins have valves that allow unidirectional blood flow.



The flow of blood depends on the peripheral muscular activity

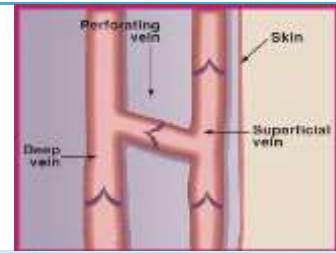


Veins begin as venules, which unite into vessels of increasing size to form veins





Arranged as **superficial** and deep veins, draining **the superficial** and deep parts of the body respectively.



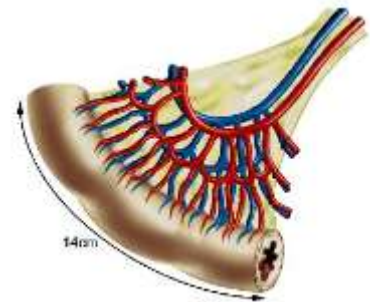
Deep veins are paired with arteries



Superficial veins usually have names unrelated to those of arteries, because there are very few superficial arteries.



Communicate with each other forming extensive anastomoses which provides for collateral return blood flow in case of venous obstruction.



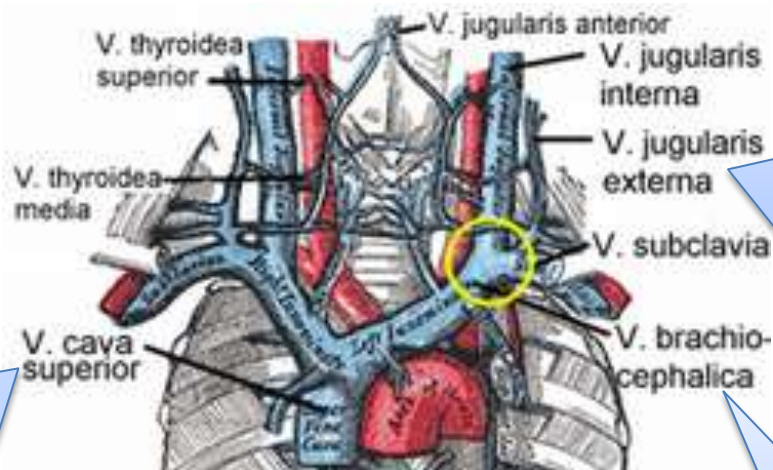


Superficial Vein	Deep Vein
Drains the superficial part of the body	Drain the Deep part
Are not paired	Paired with Arteries
Have names different than the arteries, because there are few superficial arteries	
They drain in the deep veins	

United by 2 brachiocephalic veins to give **SVC**
“brings blood from all parts **above** the Diaphragm.

Tributaries:

Azygos v.
Pericardial v.
Mediastinalv.



All **Superficial** veins of the head and neck drain in the **External jugular** then it is emptied in the **Subclavian v.**

United by Internal jugular and Subclavian vein to give **Brachiocephalic Vein**



IVC brings blood from all parts of the body **below** the Diaphragm. United by **the 2 common iliac v.** at L5.

Tributaries:

Inferior phrenic

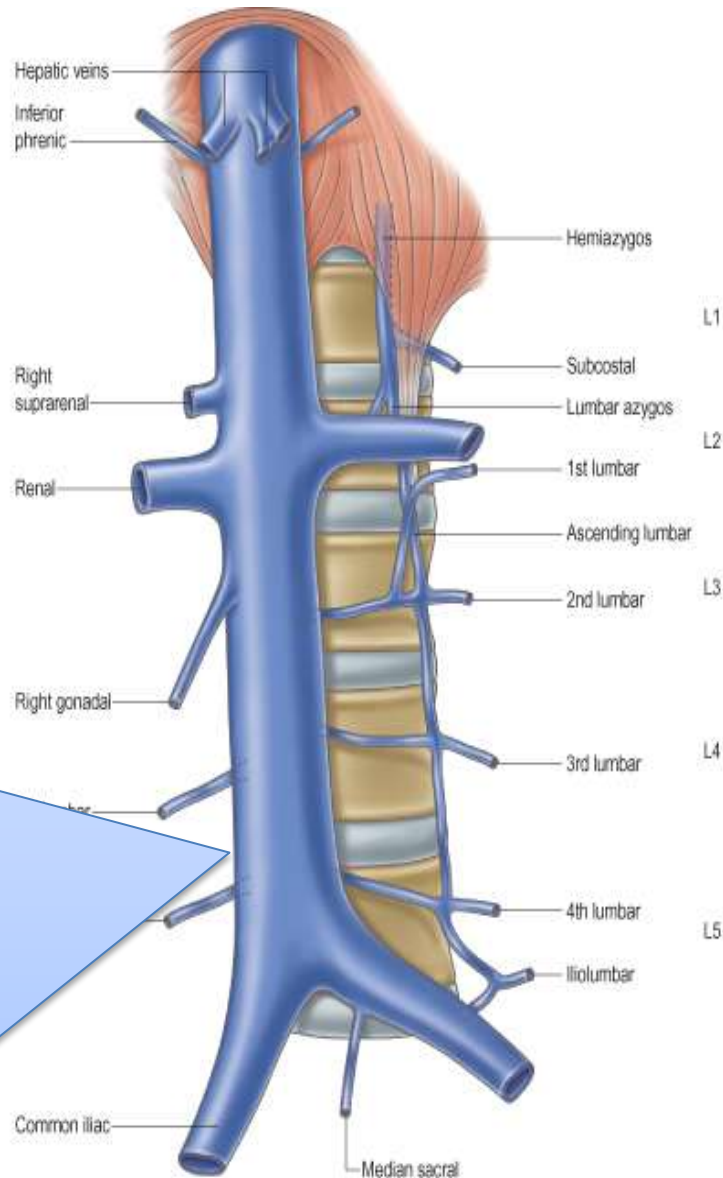
Right Supra renal

Renal

Hepatic v.

Lumbar v.

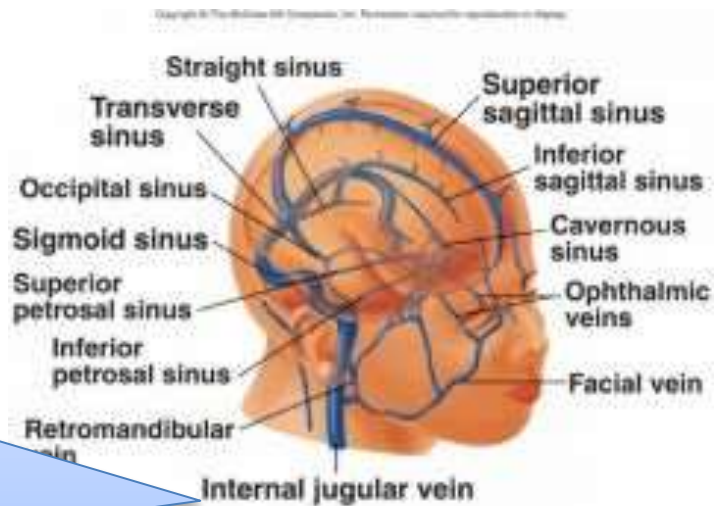
Right gonad v. " Left gonad v. Drains in the left renal v.



Elsevier Ltd 2005. Standing: Gray's Anatomy 39e - www.graysanatomyonline.com

All deep v. supplying the head and neck drain into **the internal jugular v.**

In the brain there are venous channels found in the layers of dura matter called **Dural Sinuses**. They receive blood from internal and external veins of the brain emptying it in the **IJV**





Important Notes:

The veins have two Brachiocephalic veins, while the Arteries have only one.

Deep veins of the Upper limb is called: Vena Comitantes except the Axillary and Subclavian veins.

Emissary veins are small veins that connect the superficial veins with the dural venous sinuses, and they are a possible avenue for infections to enter the cranial cavity (**Clinical interest**)

Emissary veins, **have no valves** so that has advantage and disadvantages, the advantage is that it maintains the inter cranial pressure so when the pressure in the brain rises the Emissary veins push the blood to the deep veins. Disadvantages is that it is susceptible to infections, pus can flow into the skull through them as well, making them a possible route for transmission of extracranial infection to get into the skull. Damage the the Emissary veins can cause Subdural hematoma and will compress the brain

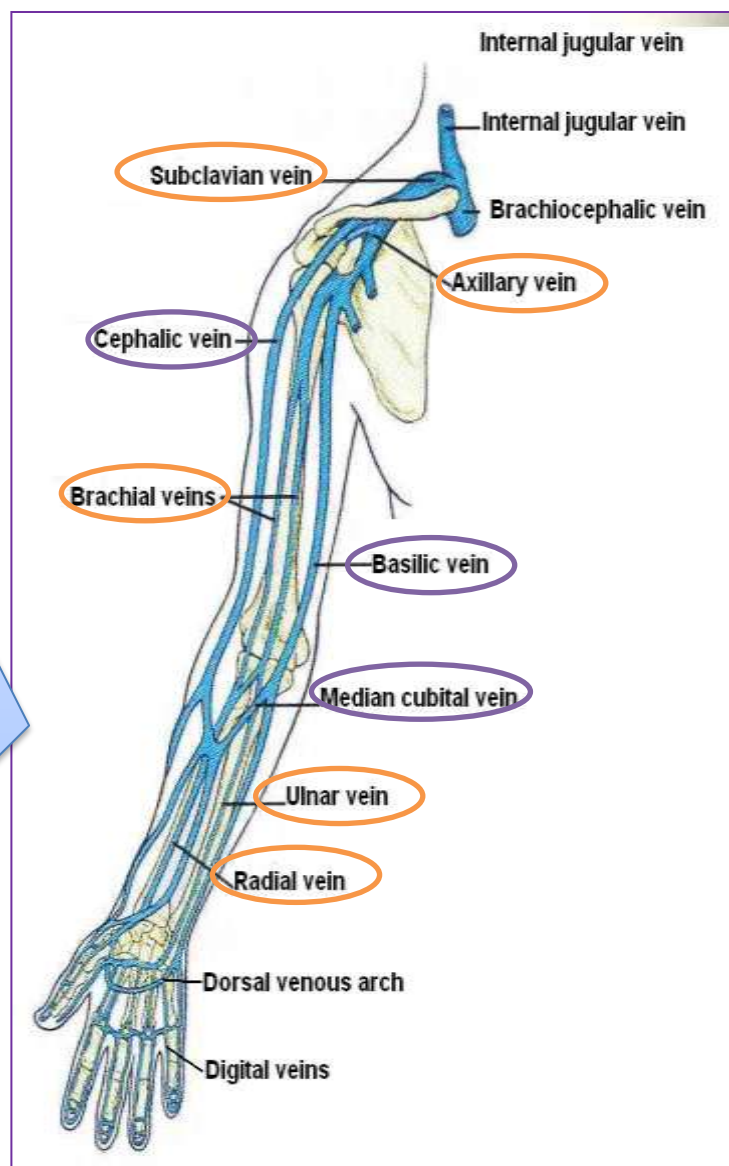
Veins of the Upper Limb

Superficial veins:

- Cephalic
- Basilic
- Median cubital

Deep Veins

- Venae comitantes of the Radial artery.
- Venae comitantes of the ulnar artery.
- Venae comitantes of the brachial artery.
- Axillary vein
- Subclavian: continuation of axillary, at the outer border of the first rib





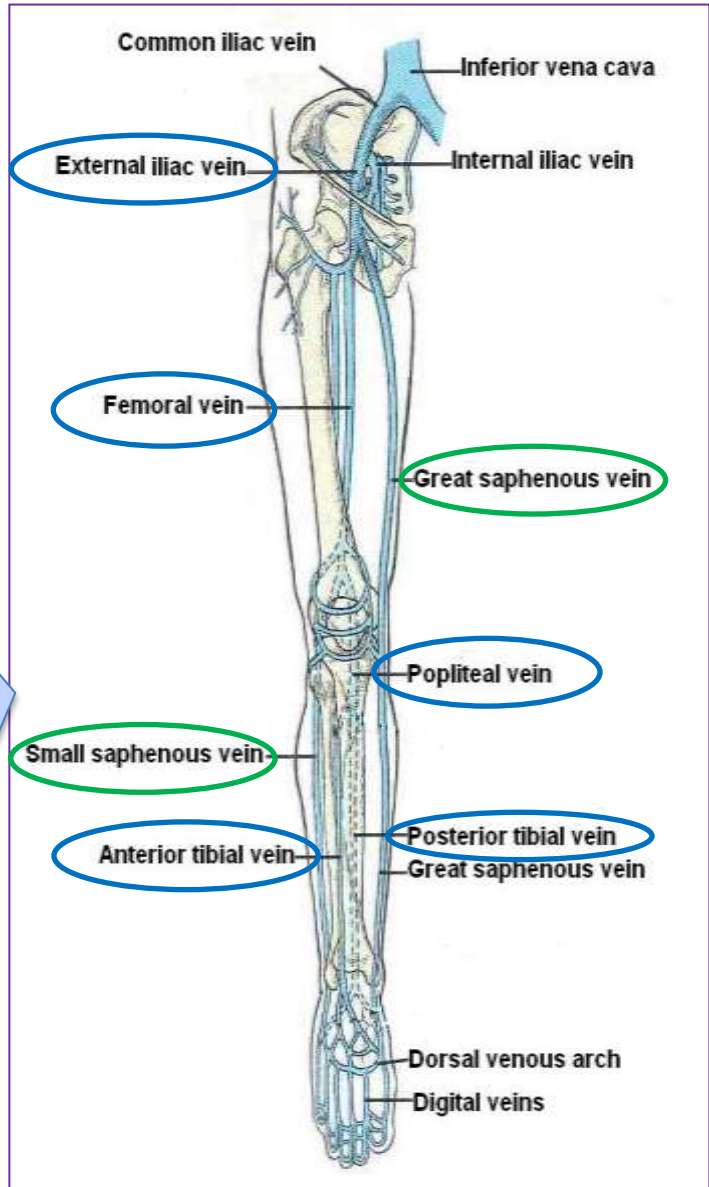
Veins of the Lower Limb

Superficial:

- Great saphenous
- Small saphenous

Deep:

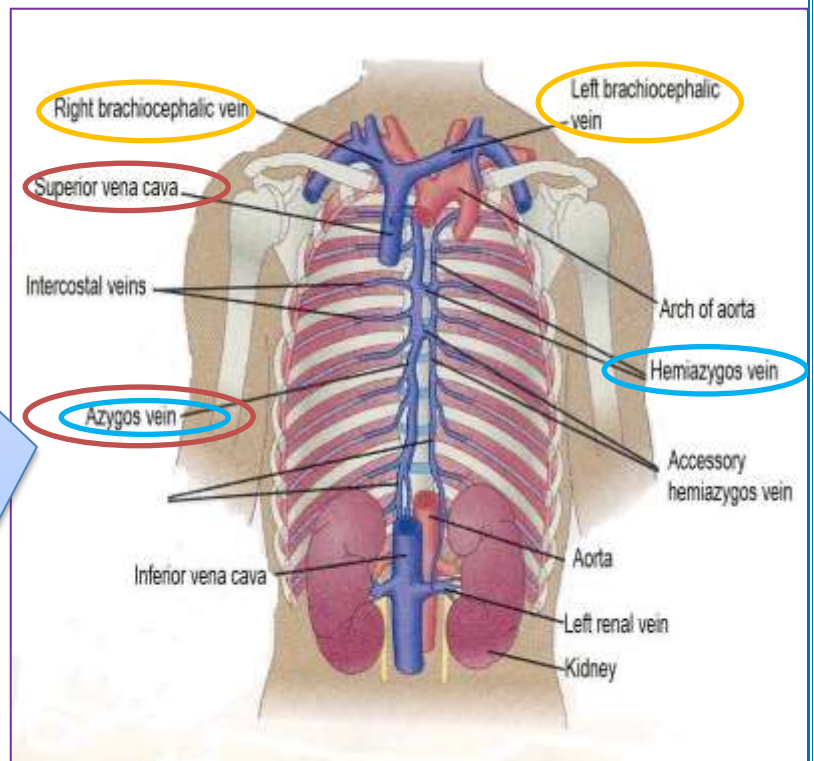
- Venae comitantes of the anterior tibial artery.
- Venae comitantes of the posterior tibial artery.
- Popliteal
- Femoral
- External Iliac





Veins of the Thorax

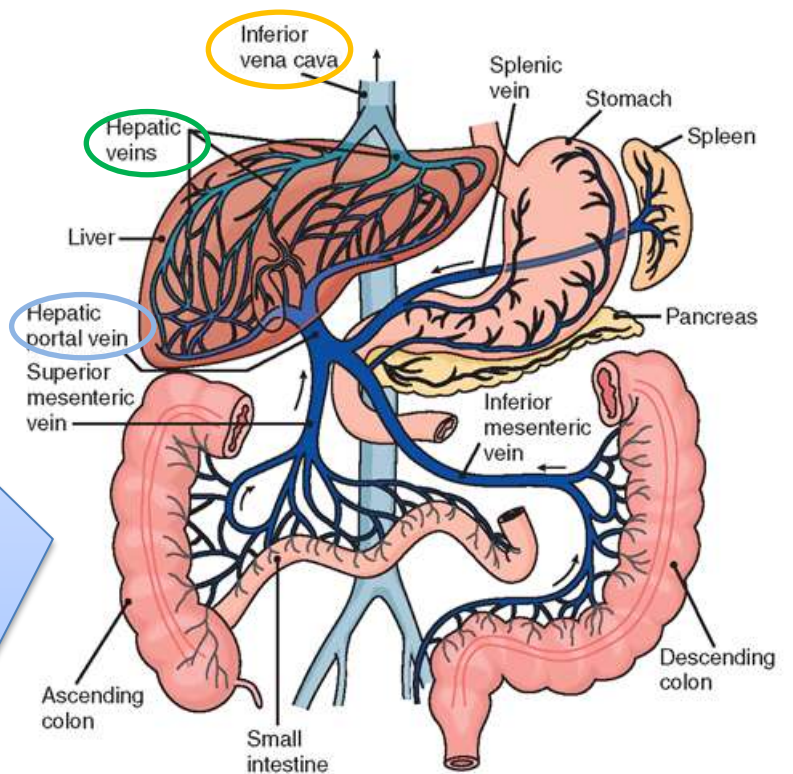
- The bronchial, esophageal and pericardial veins drain into superior vena cava or azygos vein
- The posterior intercostal veins drain into azygos and hemiazygos veins
- The anterior intercostal veins drain into the internal thoracic veins which drains into the corresponding brachiocephalic veins



Veins of the Abdomen

Veins returning from the **digestive tract, pancreas, and spleen** merge to form the **hepatic portal vein**, which **does not** join the inferior vena cava. Instead, it re-divides and flows into a **network of sinusoids in the liver**. This collection of two capillary beds (the intestinal capillaries and the hepatic sinusoids) and the hepatic portal vein connecting them is called **the hepatic portal circulation**

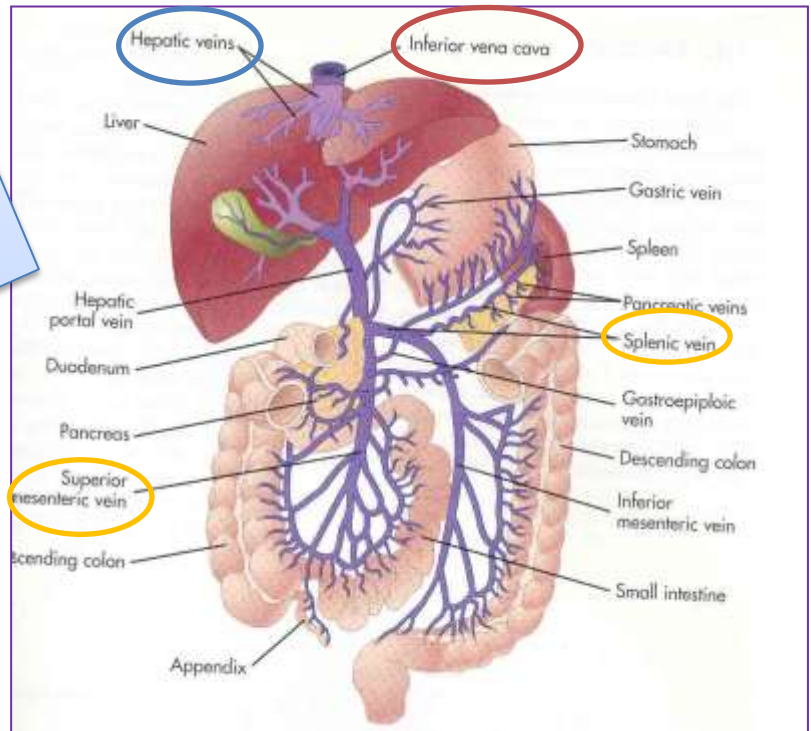
- Veins from the **abdominal walls** drain into **the inferior vena cava**





Hepatic Portal Vein

- Drains the GIT, spleen, pancreas and gall bladder
- Delivers this blood to the liver
- Formation: Formed by the union of the **superior mesenteric vein** and the **splenic vein**. The Inferior mesenteric vein drains into the splenic vein
- Liver is drained by **hepatic veins** which open into **the inferior vena cava**



Useful Videos:

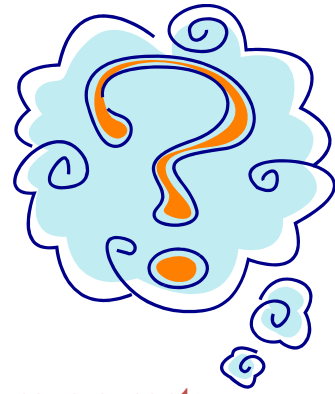
<http://youtube.com/watch?v=sI6yXy3u2sI>

<http://youtube.com/watch?v=ZQd73stLZl8>





MCQs



1- common iliac vein drain in:

- a- External iliac vein
- b- Inferior vena cava
- c- superior vena cava
- d- phrenic vein

2- All those organs are drained in the superior vena cava except:

- a- lungs
- b- upper limb
- c- perineum
- d- Neck

3- the superior vena cava is formed by the union of:

- a- two brachiocephalic vein
- b- Azygus and pericardial vein
- c- internal jugular and subclavian vein
- d- none of the above

4- inferior vena cava is formed at the level of:

- a- T5
- b- T2
- c- L2
- d- L5

5- Deep vein of the head and neck are drained in the:

- a- external jugular vein
- b- internal carotid vein
- c- external carotid vein
- d- internal jugular vein

6- Which one of those upper limb veins are deep?

- a- Cephalic
- b- Basilic
- c- Axillary
- d- Medial cubital



7- Posterior intercostal vein drain into

- a- Azygus vein**
- b- hemiazygus vein**
- c- both a and b**
- d- inferior vena cava**

Answers

- 1- b**
- 2- c**
- 3- a**
- 4- d**
- 5- d**
- 6- c**
- 7- c**



Anatomy team leaders:

Majed Al sheikh & Eman Al-Bediea