أهلا وسهلا

الأستاذ الدكتور يوسف حسين

كلية الطب - جامعة مؤتة – الأردن

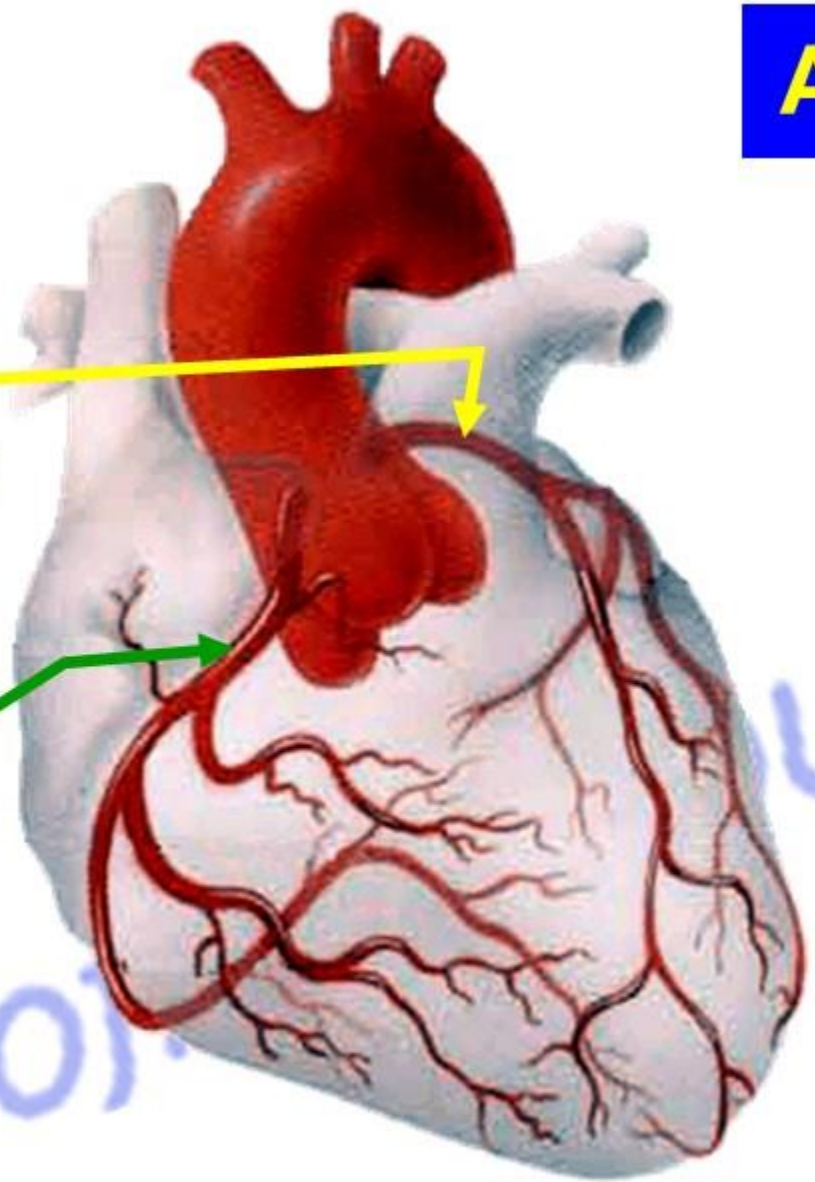
دكتوراة من جامعة كولونيا المانيا

Great Vessels of the Thorax and Abdomen

Intended Learning Outcomes (ILOs)

By the end of this lectures, you should be able to

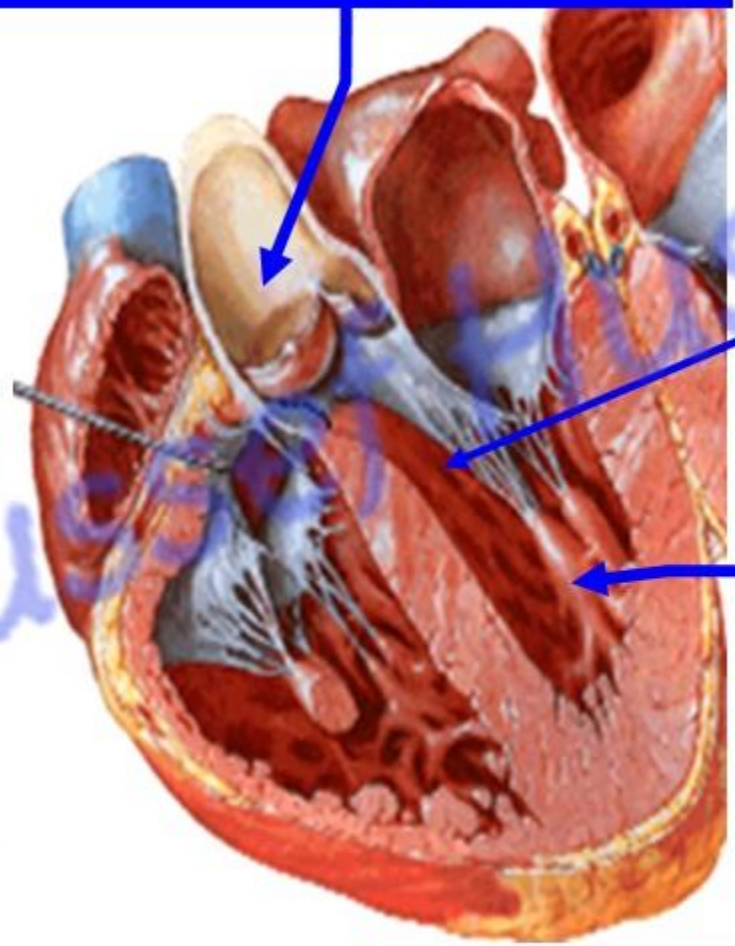
- Ascending aorta (beginning and branches)
- Arch of the aorta (beginning, end, main relations and branches)
- Pulmonary trunk (beginning and branches)
- Descending thoracic aorta (beginning, end, and branches)
- Brachiocephalic veins and SVC (beginning, end and tributaries)
- Abdominal aorta (beginning, end, and branches)
- IVC (beginning, end and tributaries)
- Clinical notes about anastomosis between SVC and IVC



Left coronary artery

Right coronary artery

Ascending aorta

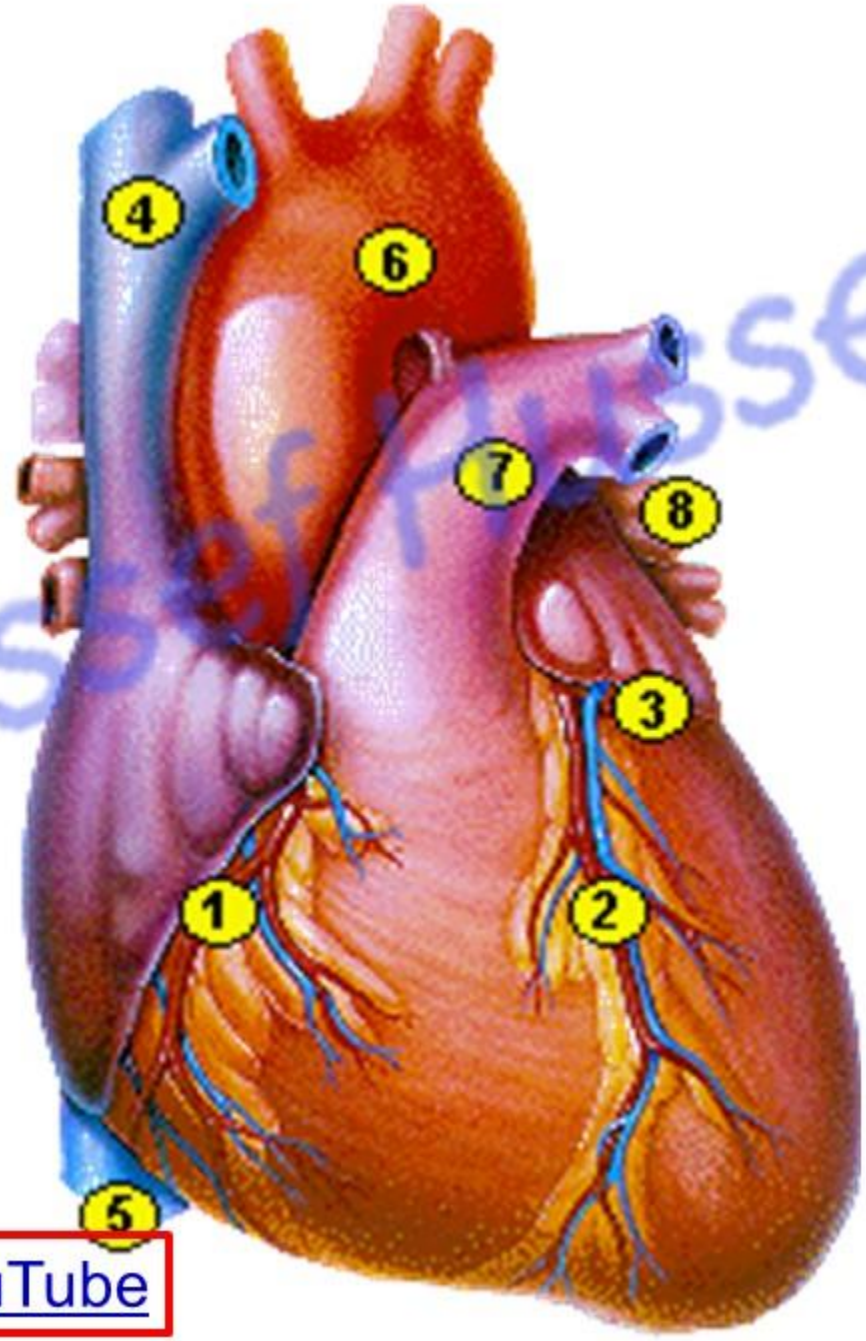


Vestibule Outflow

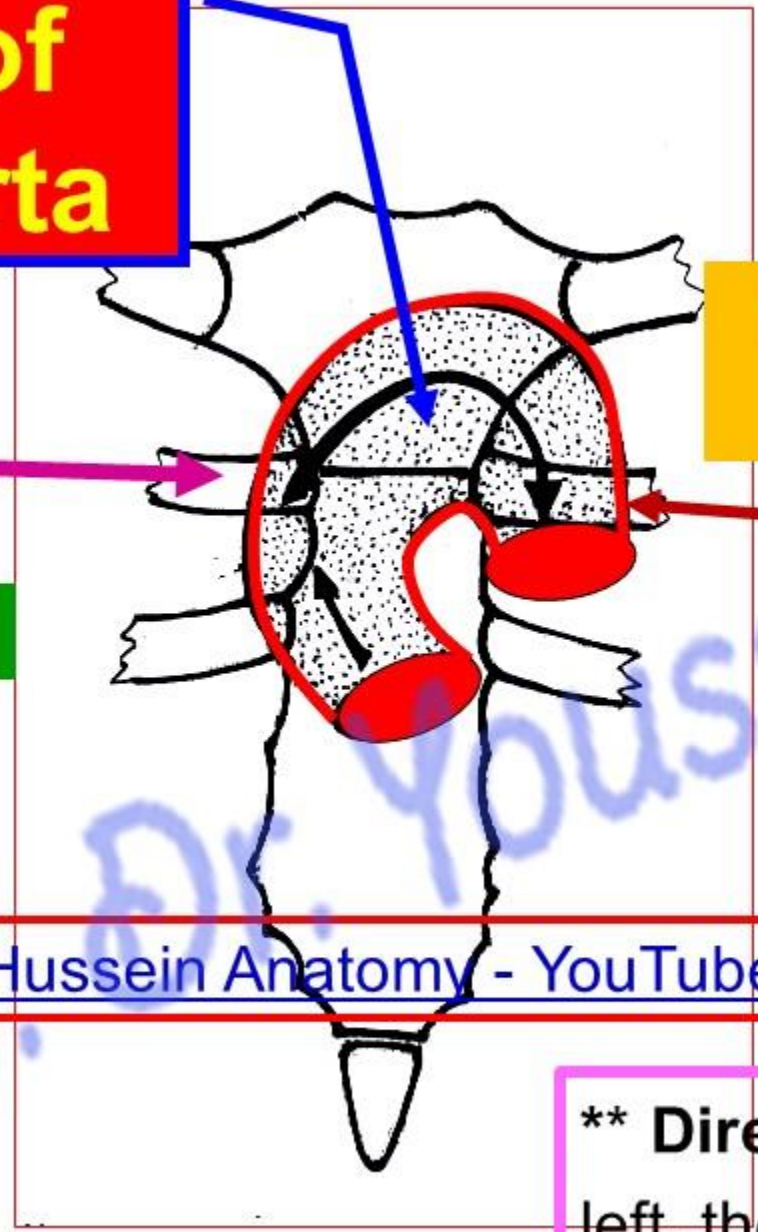
Left ventricle

Direction: upward, forward and to the right.

Arch of Aorta (6)



Arch of the Aorta



Lower of T4

Right 2nd SC

Left 2nd SC

Sternal angle

- **Arch of Aorta**

** **Begins:** at the right 2nd sternocostal junction.

** **End;** at the left 2nd sternocostal junction = lower border of T4.

** **Direction**; It passes backwards and to the left, then downward.

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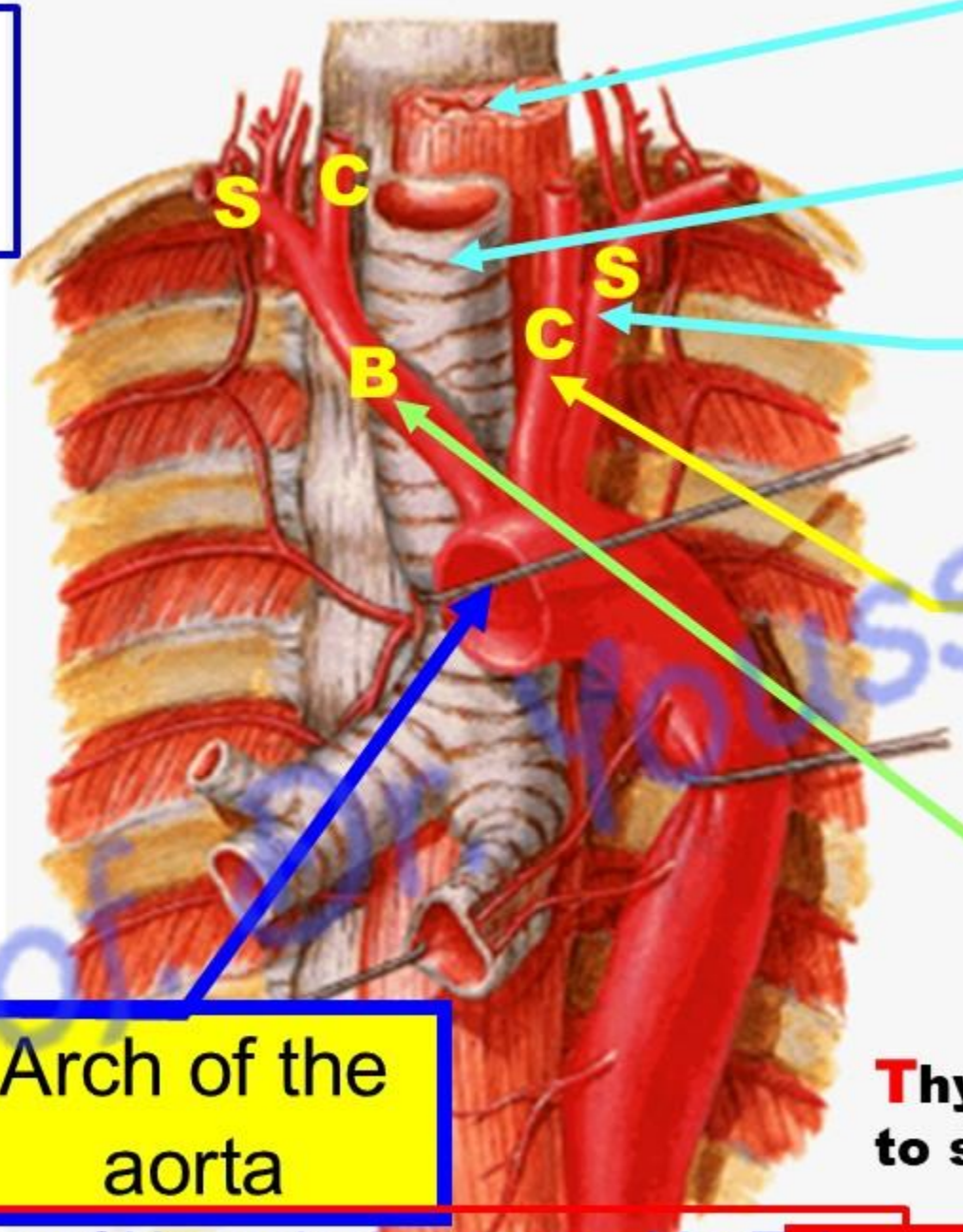
Relations

- Superior
- Posterior



Esophagus

Trachea

Left Subclavian a.

Left Common carotid a.

Brachiocephalic trunk

Arch of the aorta

Thyroidea ima artery ascends to supply the thyroid gland

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Branches & relations of Arch of Aorta

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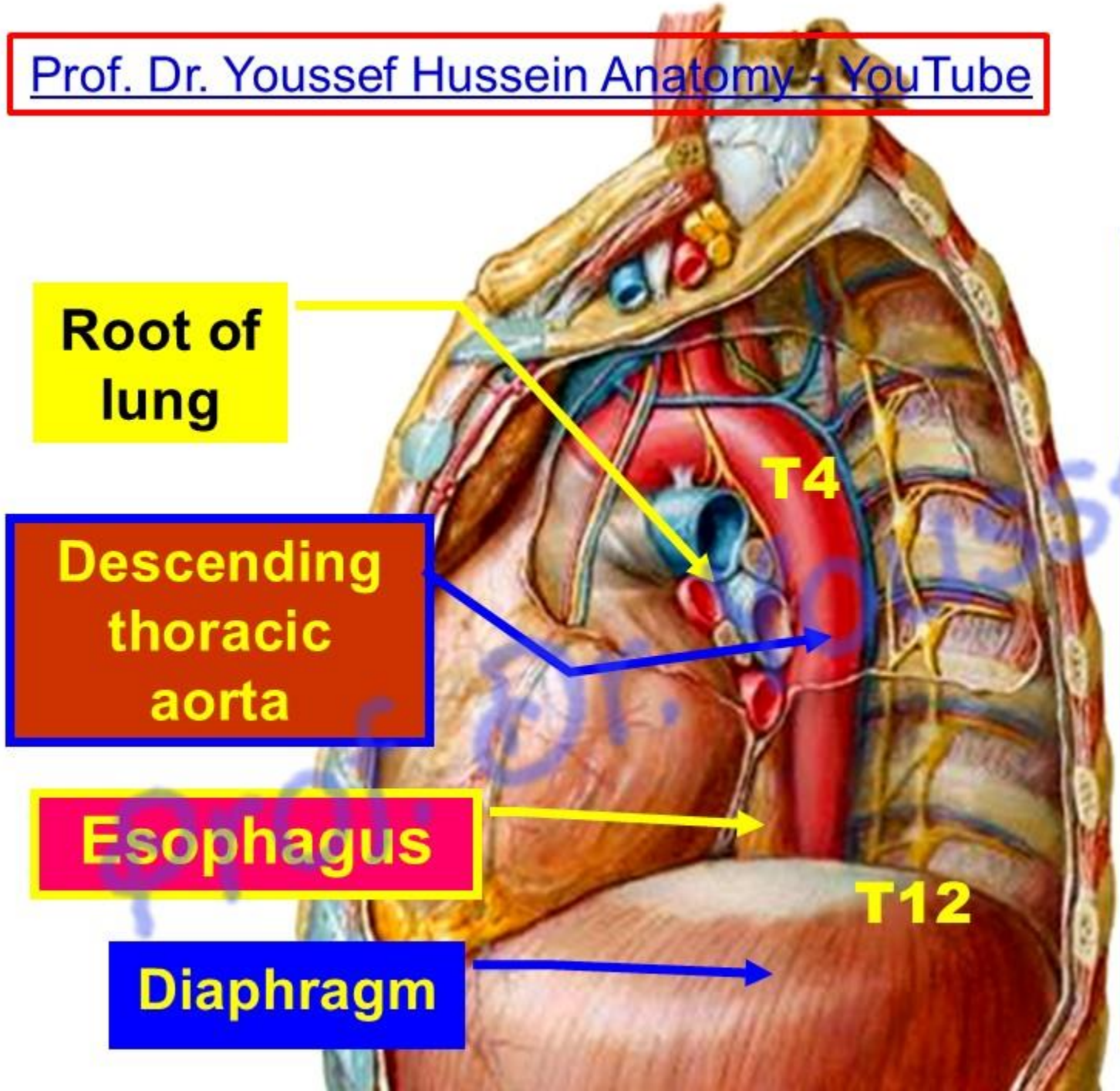
Descending thoracic Aorta



** It descends in the posterior mediastinum on the left lung, behind:

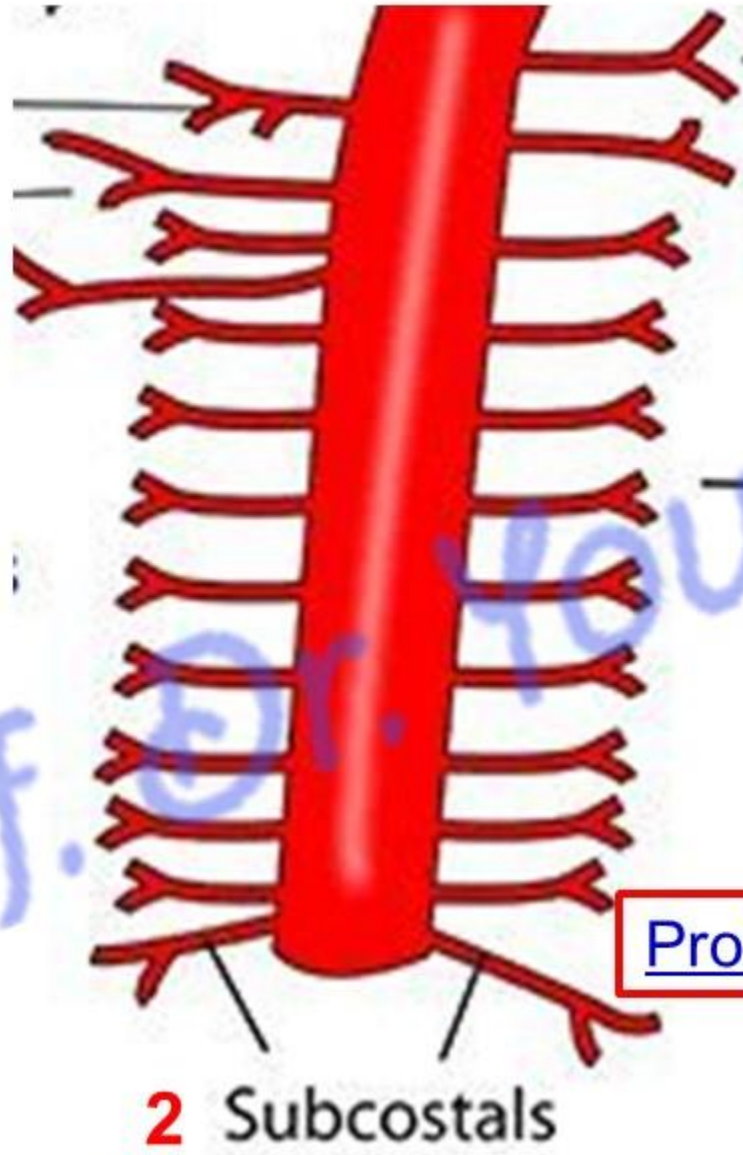
1- Root of the left lung.

2- Esophagus.

3- Oblique sinus of pericardium and left atrium (base of the heart).

** Ends; It passes through the aortic opening of the diaphragm at T12.

Branches of descending thoracic aorta



3 Left bronchial

1 Posterior intercostals (3-11) (Spaces 1 & 2 from superior intercostal from costocervical trunk)

2 Subcostals

• Pulmonary Trunk (7)

** Origin: from the infundibulum of the right ventricle

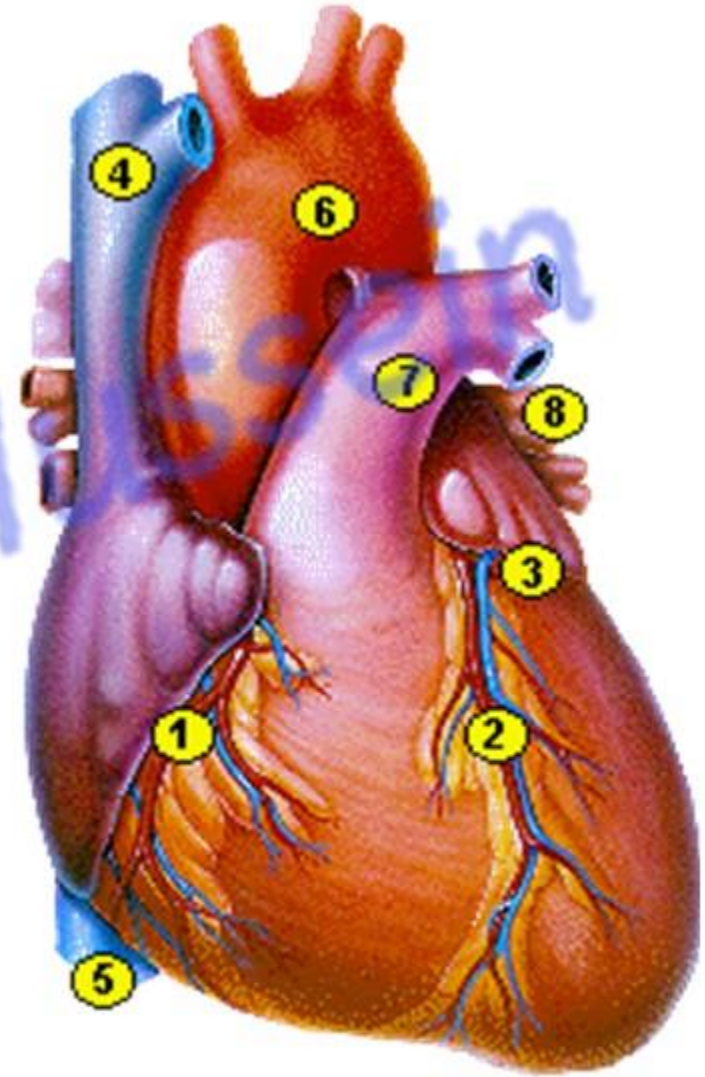
** Direction: upward, backward and to the left.

** Termination; in the concavity of the aortic arch by dividing into right and left pulmonary arteries.

1- Right Pulmonary Artery: passes transversally to the right lung.

2- Left Pulmonary: passes to the left lung.

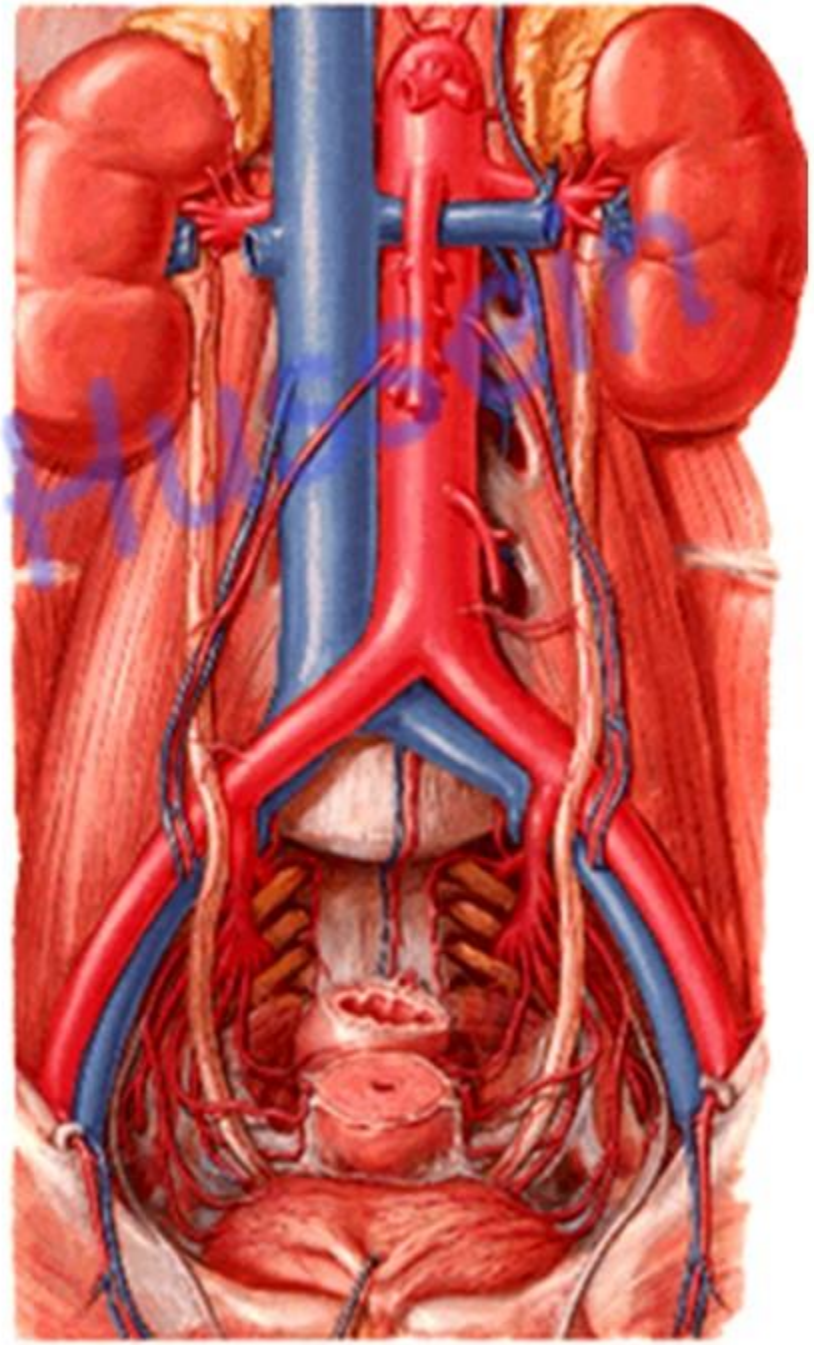
- It is connected to the lower surface of arch of aorta by ligamentum arteriosum.

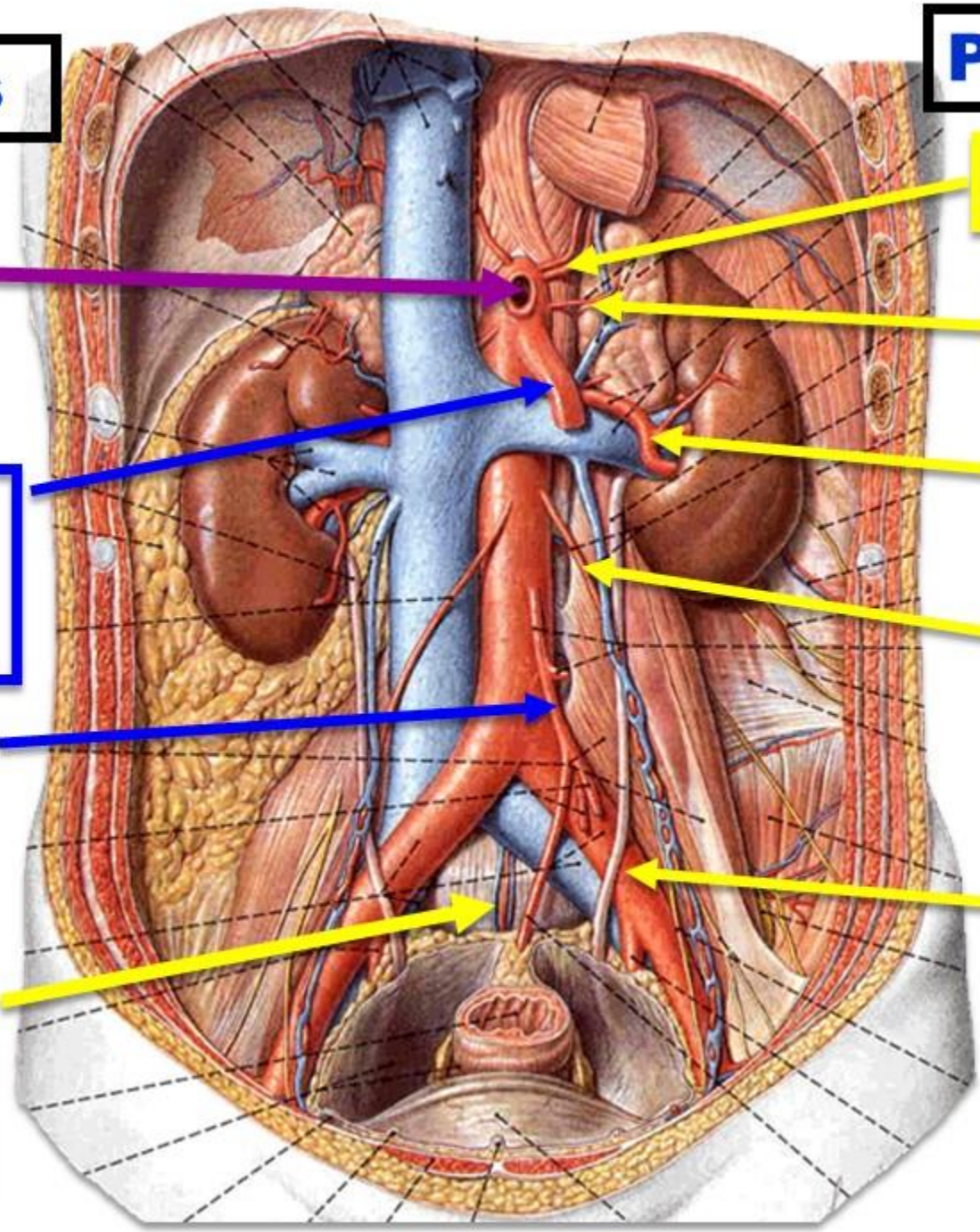


Abdominal aorta

** **Beginning:** continuation of the descending thoracic aorta at the aortic opening of the diaphragm, opposite the T12 vertebra.

** **Termination,** at the level of L4; it divided into right and left common iliac arteries.



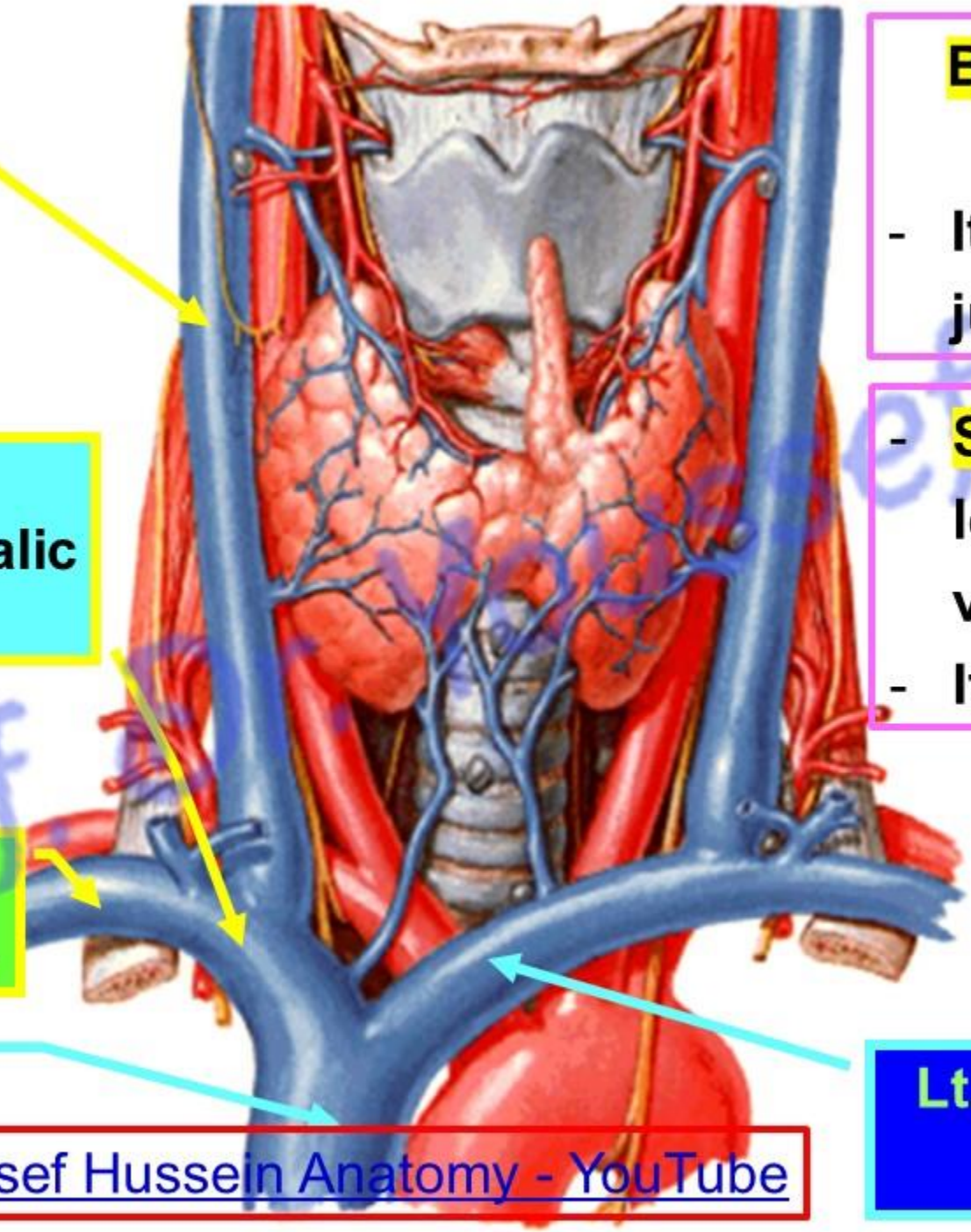


Single branches

- Coeliac trunk
- Superior mesenteric artery
- Inferior mesenteric artery
- Median sacral artery

Paired branches

- Inferior phrenic A
- Middle suprarenal A
- Renal A
- Gonadal A
- Lumbar arteries
- Common iliac A



IJV

Rt. Brachiocephalic vein

Right subclavian v.

SVC

Lt. brachiocephalic vein

Brachiocephalic (Innominate) Vein

- It is formed union of internal jugular and subclavian veins.

- SVC is formed by the union of left and right brachiocephalic veins.
- It ends in the right atrium

- **Tributaries of left brachiocephalic vein**

1. Left **subclavian** vein.
2. Left **internal jugular V**.
3. Left **internal thoracic** (mammary) vein.
4. Left **inferior thyroid** vein.
5. Left **first posterior intercostal** vein.
6. **Left superior intercostal vein.**

- **Tributaries of right brachiocephalic vein:**

1. Right **subclavian** vein.
2. Right **internal jugular** V
3. Right **internal thoracic** (mammary) vein.
4. Right **inferior thyroid** vein.
5. Right **first posterior intercostal vein**.

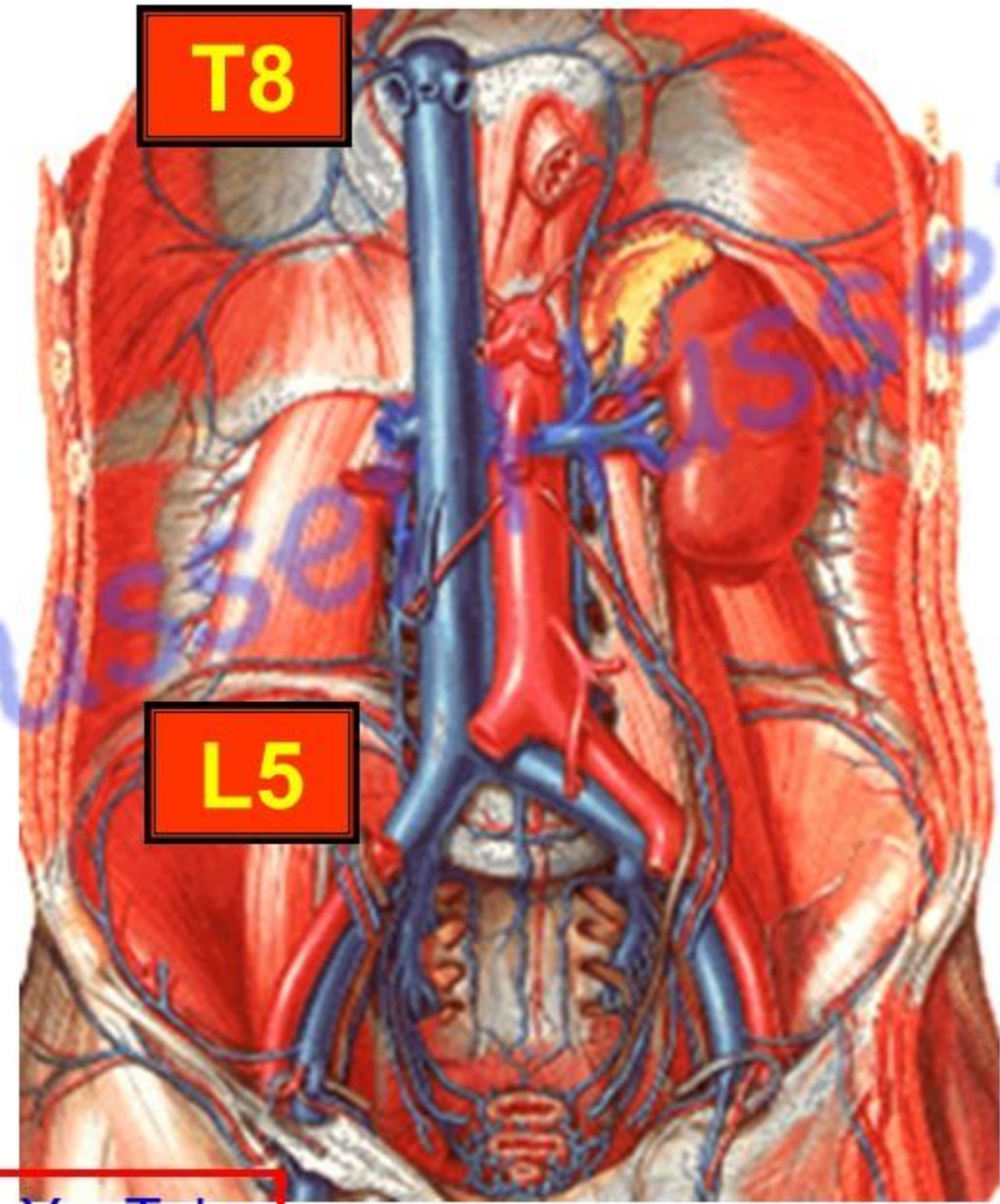
N.B; Right superior intercostal vein ends in the arch of azygos vein

Inferior vena cava

** **Beginning**: by the union of two common iliac veins in front **L5 vertebra**.

- It pierces the central tendon of the diaphragm opposite T8.

** **end**: in the right atrium



** Tributaries of IVC:

1- Inferior phrenic veins (right and left).

2- Right suprarenal vein (*the left ends in the left renal vein).*

3- Renal veins (right and left).

4- Right gonadal (testicular or ovarian) vein *(the left ends in the left renal vein).*

5- The Lumbar veins (right and left).

6- Common iliac veins (right and left).

7- Hepatic veins (right and left).

- **Collateral venous anastomoses** between Inferior vena cava and superior vena cava

1- Azygos vein from back of Inferior vena cava to back of superior vena cava

2- Vertebral venous plexus (valveless**)** inside vertebral canal.

3- Anastomoses between **superior epigastric vein** (internal thoracic vein) **and inferior epigastric vein** (external iliac vein) in abdominal rectus sheath.

4- **Thoracoepigastric vein** runs on lateral side of the trunk between lateral thoracic vein (**axillary vein**) and superficial epigastric vein (**femoral vein**).

https://www.youtube.com/channel/UCVSNqbibj9UWYaJdd_cn0PQ

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