

Lec 1- Anatomy

Full Lecture Notes

بمناسبة الامتحانات..

بدي أحكيك عن دعاء تدعيه قبل الدراسة وأنت مزنوق وبتلّم المادّة ^ ^

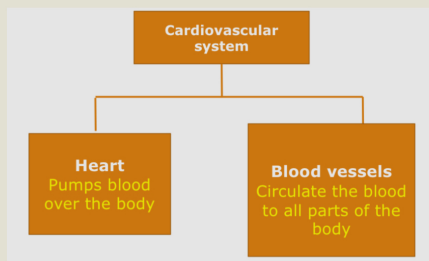
بعد ما تحمد الله -عزّ وجلّ- وتثني عليه وتصلّي على سيّد الخلق ﷺ تقول:
"اللّهُمَّ إِنِّي أَسْأَلُكَ فَهْمَ النّبِيِّينَ وَحِفْظَ الرّسُلِينَ وَالْمَلَائِكَةِ الْمُقَرَّبِينَ.. سُبْحَانَكَ لَا
عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ.. اللّهُمَّ إِنِّي أَسْتَوْدِعُكَ مَا سَأَقْرَأُ وَأُحْفِظُ وَمَا
تَقَعَّ عَيْنِي عَلَيْهِ، فَرِّدْهُ إِلَيَّ وَقْتُ حَاجَتِي إِلَيْهِ."

بعدين بلّش دراسة..

وقبل ما تفتح ورقه الاسئلة في الامتحان قول:
"اللّهُمَّ رَدِّ لِي مَا اسْتَوْدَعْتُكَ إِيَّاهُ يَا خَيْرَ الْحَافِظِينَ، اللّهُمَّ لَا سَهْلَ إِلَّا مَا جَعَلْتَهُ
سَهْلًا، وَإِنَّكَ تَجْعَلُ الصَّعْبَ إِذَا شِئْتَ سَهْلًا"

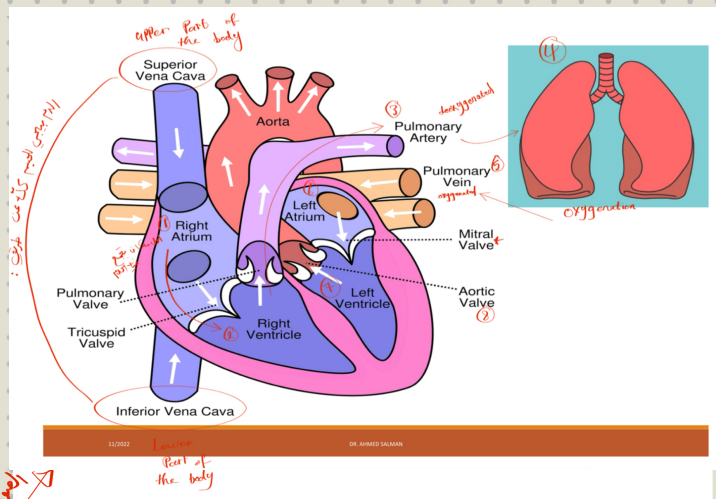
Side note: الملف شامل السلايدات ان شاء الله

- **CVS function** : Carrying O_2 , nutrients and eliminating CO_2 , waste products from the body



• We have 3 circulations *

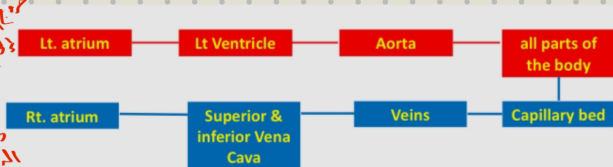
1. Pulmonary Circulation :



- Pulmonary veins are the only veins that carry oxygenated blood
- Pulmonary arteries are the only arteries that carry deoxygenated blood

2. Systemic Circulation :

- oxygenated blood from heart → body
- deoxygenated blood from body → heart



in summary:-

1. Sup-inf Vena cava
2. Right Atrium
3. Right ventricle
4. Pulmonary Artery
5. Lung
6. Pulmonary Vein
7. Left Atrium
8. Left ventricle
9. Aorta
10. body

3. Peripheral Circulation :



- ✓ Blood flow in capillaries is regulated by smooth muscle sphincter called precapillary sphincter
- ✓ Vein with large diameter have valves that allow blood flow in one direction only (to the heart)

« Thoracic wall »

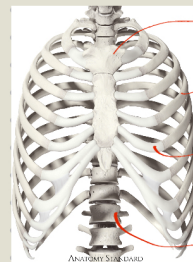
Boundaries :

Anteriorly : sternum and costal cartilages
Posteriorly : vertebral column
On either side : ribs and intercostal spaces

The thoracic wall is composed of :

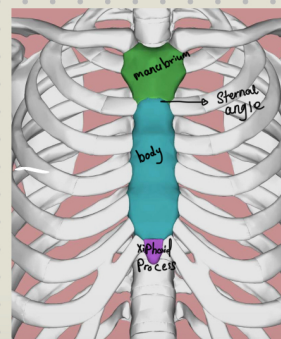
- 1- Skeleton (Thoracic cage)
- 2- Intercostal muscles
- 3- Intercostal vessels
- 4- Intercostal nerves

• Osseo-Cartilaginous Cavity : Composed of :



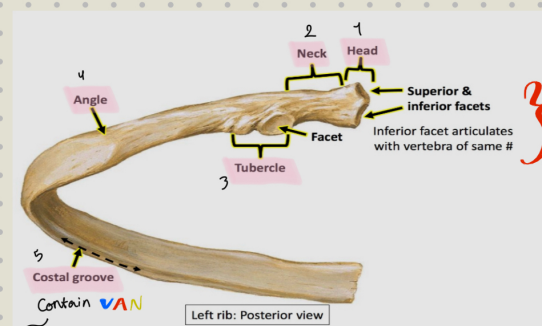
1. Sternum
2. Ribs
3. Costal Cartilage
4. Thoracic vertebrae

1) Sternum :



- Sternal angle : also called angle of Louis
Located at the level of the 2nd costal cartilage
- Clinically important for counting of the ribs
- Take BM biopsy → Sternum, ribs

2) Ribs :



intercostal vein
" Artery
" Nerve

Clinical note: The needle should be inserted above the superior border of the Rib ?
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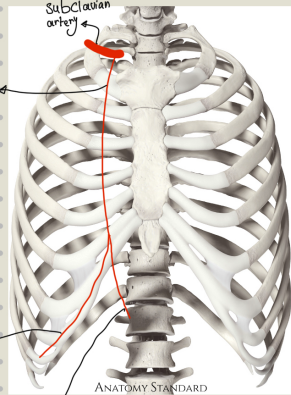
The Arterial Supply

Arterial supply of thoracic wall

Anterior wall
9 on each side
2 in each space
Upper 6 from internal thoracic artery
7,8,9 from musculophrenic artery

Posterior wall
11 on each side
One in each space
1st, 2nd from superior intercostal artery
3-11 from descending thoracic aorta.

* Anteriorly we have 9 spaces. why? Rib 11,12 are floating

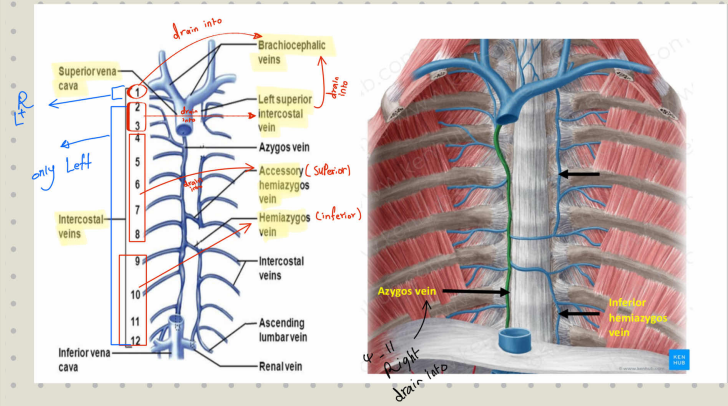


Internal Thoracic (Mammary) artery

Origins: branch of 1st part of subclavian artery
Course: it descends vertically behind upper 6 costal cartilages and intercostal spaces
Termination: opposite the 6th intercostal space into: superior epigastric A. and Musculophrenic A.

Branches:

- 1-Pericardio-phrenic → Pericardium + Diaphragm
- 2- Pericardial branches → heart
- 3- Anterior intercostal a to upper six spaces.
- 4- Perforating branches to skin, muscles and mammary gland.



Vertebral venous plexus

Is a valveless plexiform of veins

Location: epidural space between the wall of the vertebral canal and the dura mater

Tributaries from

- ✓ Spinal cord
- ✓ Vertebrae
- ✓ Vertebral veins
- ✓ Basilar plexus
- ✓ Occipital and sigmoid dural sinuses

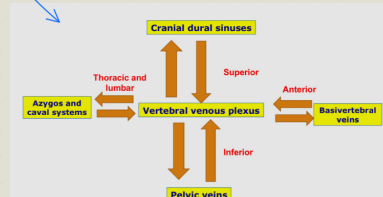
Communication

Anteriorly receive the basivertebral veins, which lie within the vertebral bodies.

Superiorly with the cranial dural sinuses

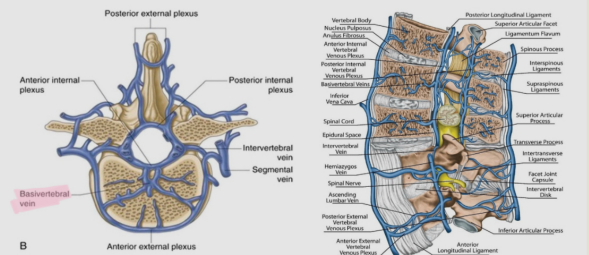
Inferiorly with the pelvic veins

It communicates with both the azygos and caval systems in the thoracic and abdominal regions



• What does that mean?
any malignant tumor in
VVP can spread to
any of these sites and
vice versa!

It is the route of early metastasis of carcinoma from the lung, breast, and prostate gland to bones and the central nervous system (CNS).



The Venous Drainage

Venous drainage of thoracic wall

Anterior wall
Anterior intercostal veins
Drain into internal thoracic vein

Posterior wall
1st intercostal vein drains into brachiocephalic vein

Right

2nd, 3rd drain into right superior intercostal vein which drains into arch of azygos.
4th -11th and subcostal veins drain into azygos vein

Left

2nd 3rd into left superior intercostal vein which drains into left brachiocephalic vein
4th -8th drain into superior hemiazygos vein
9th -11th and subcostal veins drain into inferior hemiazygos vein

The posterior intercostal veins of the 2nd and 3rd (and occasionally 4th) intercostal spaces unite to form a trunk called the superior intercostal vein

Thoracic cavity

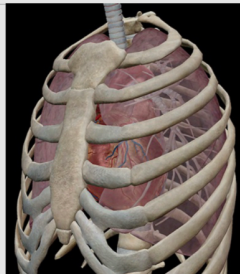
- It bounded by thoracic cage, diaphragm.
- It extends upward into the roof of the neck About one finger breadth above the clavicle on each side
- It contains two pleural cavities containing lungs and mediastinum?

Mediastinum

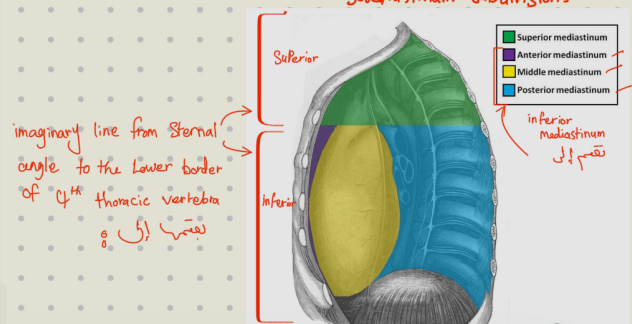
It is the region between the two pleural cavities.

Boundaries:

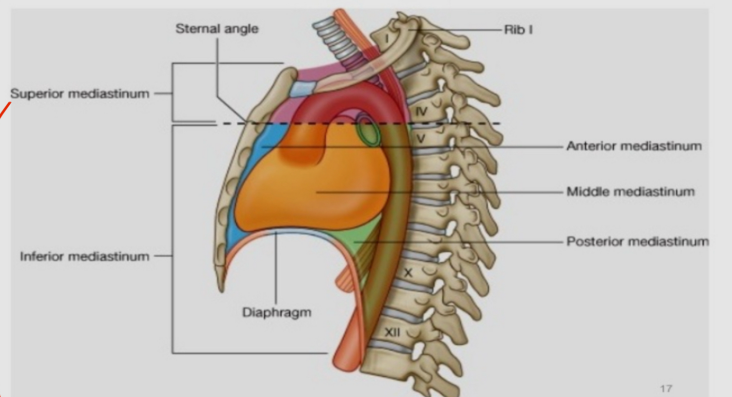
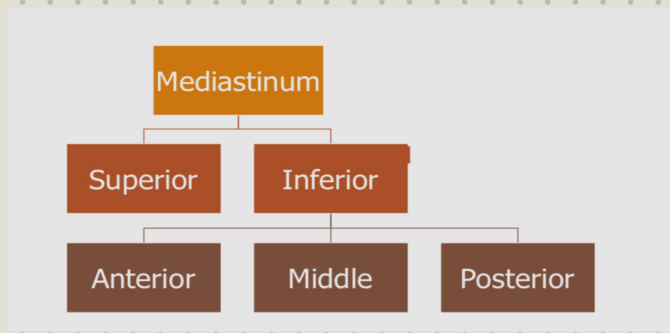
- Superior: Thoracic Inlet
- Inferior: Diaphragm
- Anterior: Sternum
- Posterior: Vertebral column



Mediastinum Subdivisions



→ شوخوا الرئة لسه ربط



The Superior mediastinum

Boundaries:

Anteriorly: manubrium sterni.

Posteriorly: upper four thoracic vertebrae.

Superiorly: thoracic inlet.

Inferiorly: imaginary plane.

On each side: mediastinal pleura.

عسؤ بعتوى طيب ؟ مودوع Lec 2

Contents of superior Mediastinum

- 1- Arch of Aorta and its branches
- 2- Brachiocephalic veins and superior vena cava
- 3- Thoracic duct
- 4- Thymus
- 5- Phrenic and vagus nerves
- 6- Trachea
- 7- Oesophagus

Post → Ant السرىب

- 1) Oesophagus
- 2) trachea
- 3) Artery
- 4) vein