MEDIASINUM

Dr Jamila EL medany

OBJECTIVES

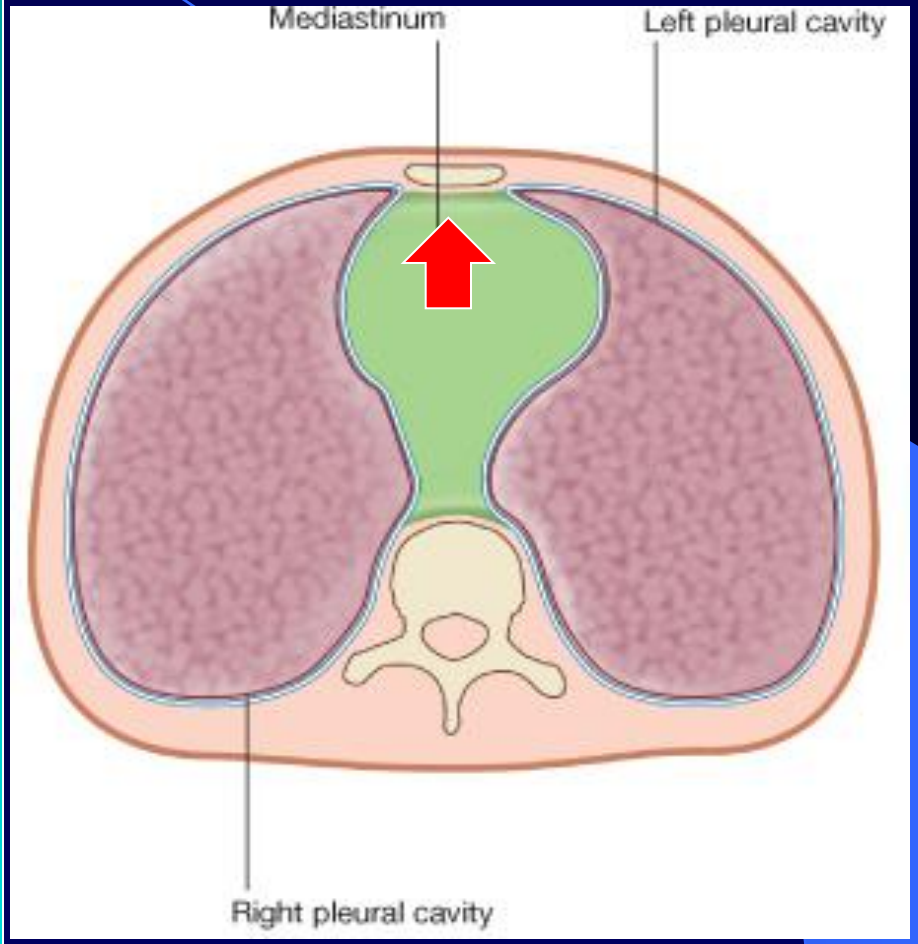
At the end of the lecture, students should be able to:

- **Define the *"Mediastinum".***
- **Differentiate between the divisions of the mediastinum.**
- **List the boundaries and contents of each division.**
- **Describe the relations between the important structures in each division.**

Mediastinum

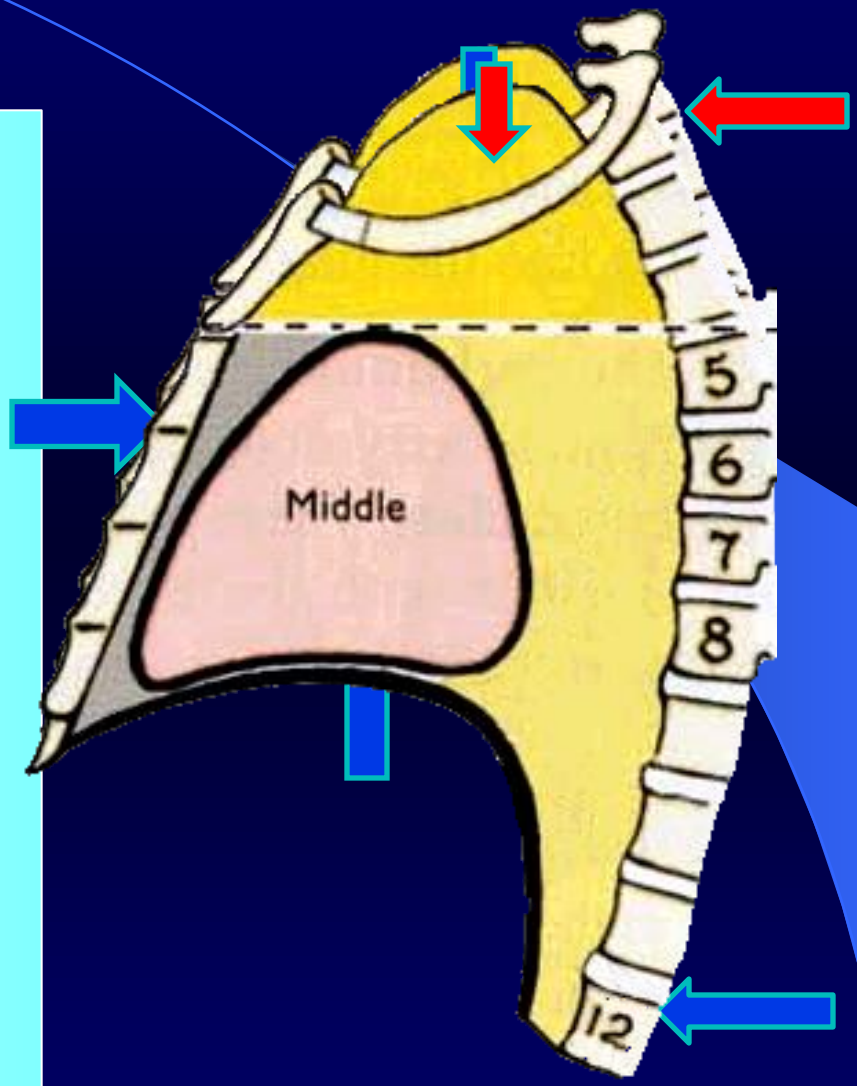
It is a thick movable partition between the two pleural sacs & lungs.

It contains **all** *the structures* **which lie in the intermediate compartment of the thoracic cavity.**



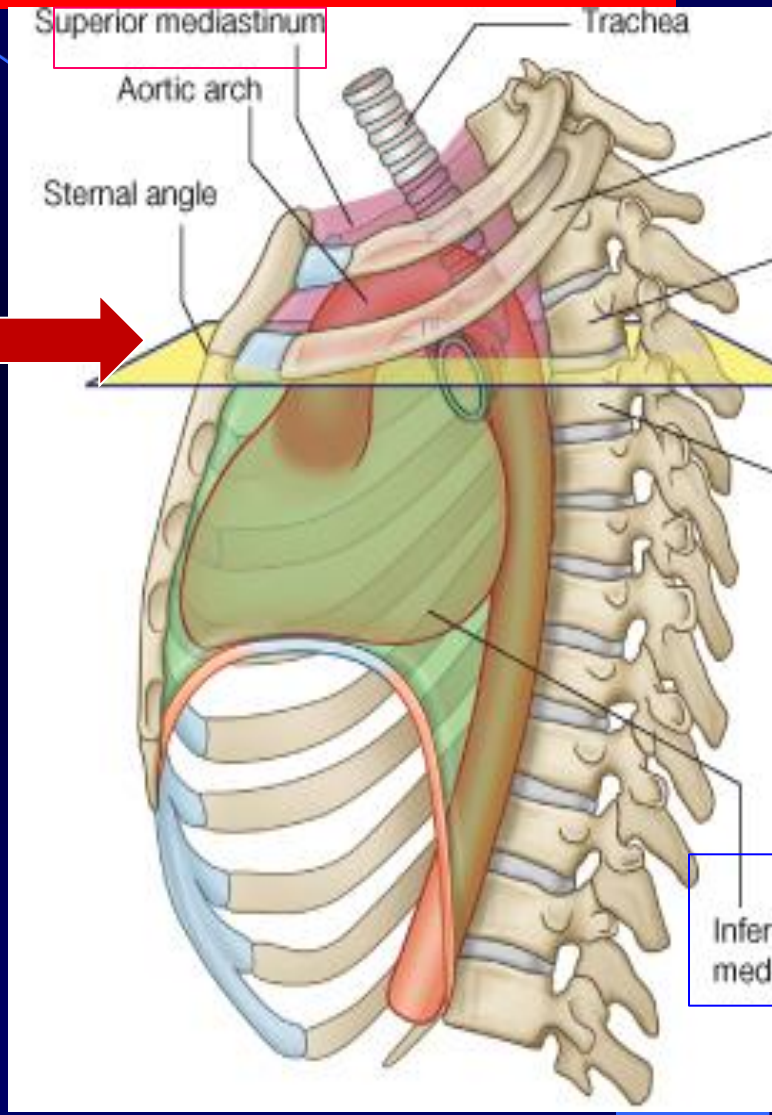
Boundariers

- ***Superior:***
- ***Thoracic outlet:*** ***(manubrium, 1st rib & 1st thoracic v)***
- ***Inferior:***
- ***Diaphragm.***
- ***Anterior:***
- ***Sternum.***
- ***Posterior:***
- ***The 12 thoracic vertebrae.***



Subdivisions

- ***The mediastinum is*** **subdivided by a Horizontal plane (*extending from the Sternal angle to the lower border of T (4) into:***
- ***Superior mediastinum (S):*** **above the plane**
- ***Inferior mediastinum:*** **below the plane.**



Superior Mediastinum

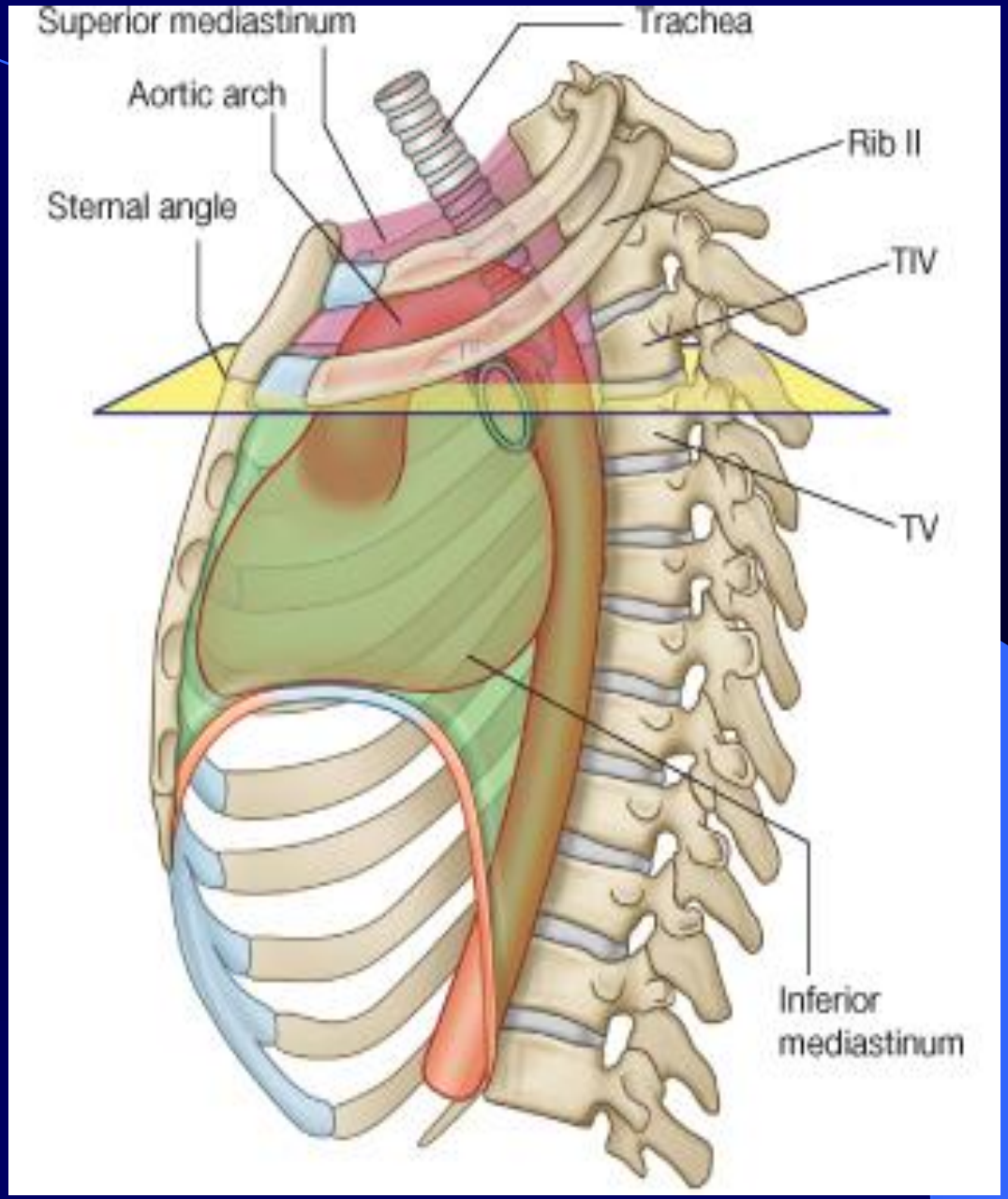
Boundaries:

Superior: Thoracic outlet.

Inferior: Horizontal plane.

Anterior: **Manubrium.**

Posterior: Upper (4) thoracic vertebrae.

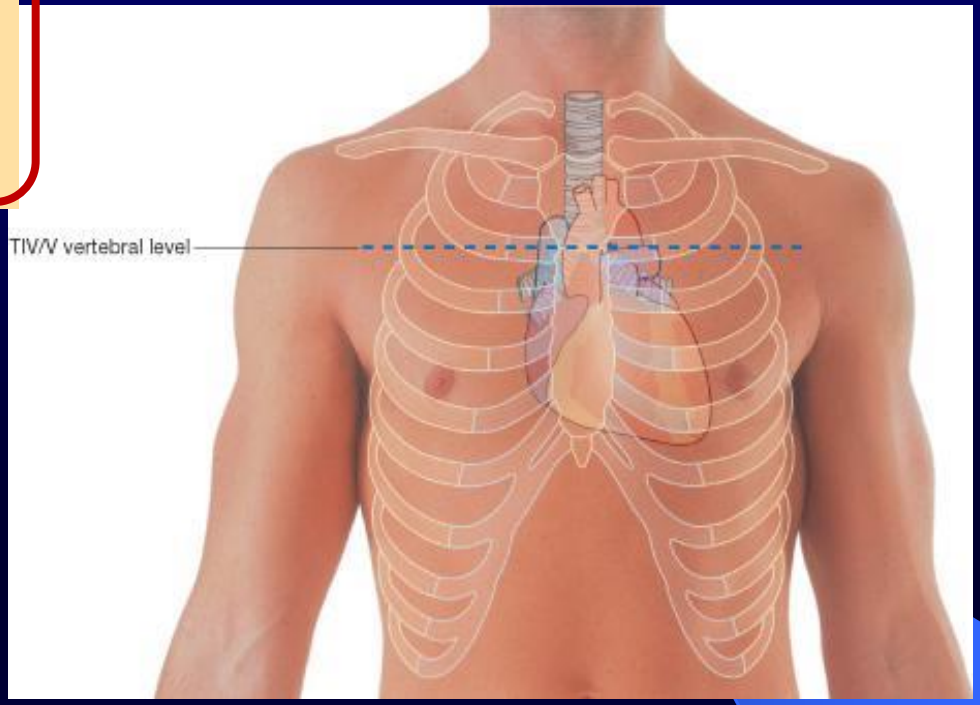


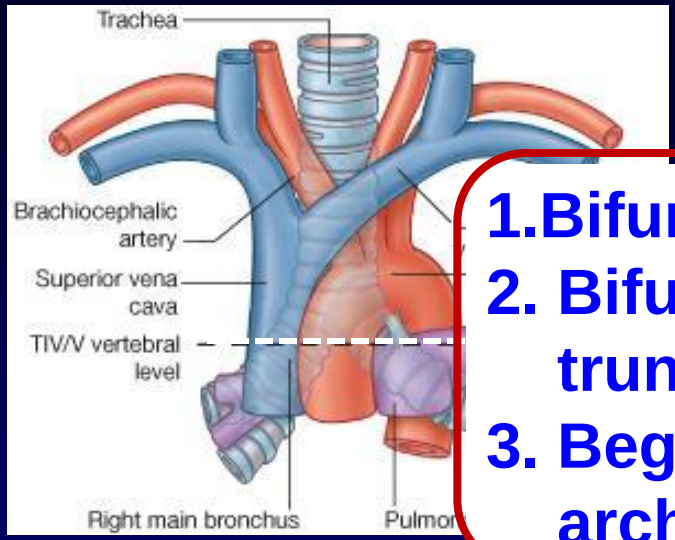
LEVEL OF T4

It is at the Level of:

Sternal angle❑

Second costal cartilage❑





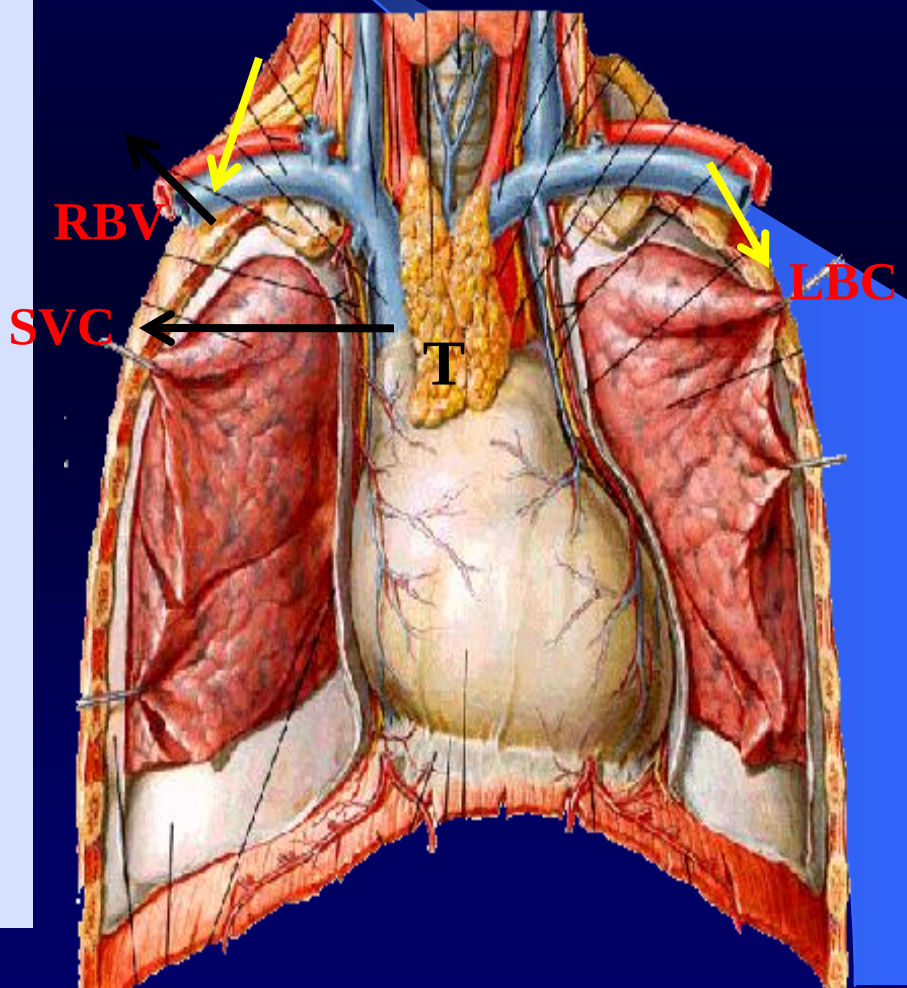
1.Bifurcation of trachea❑

2. Bifurcation of pulmonary❑ trunk

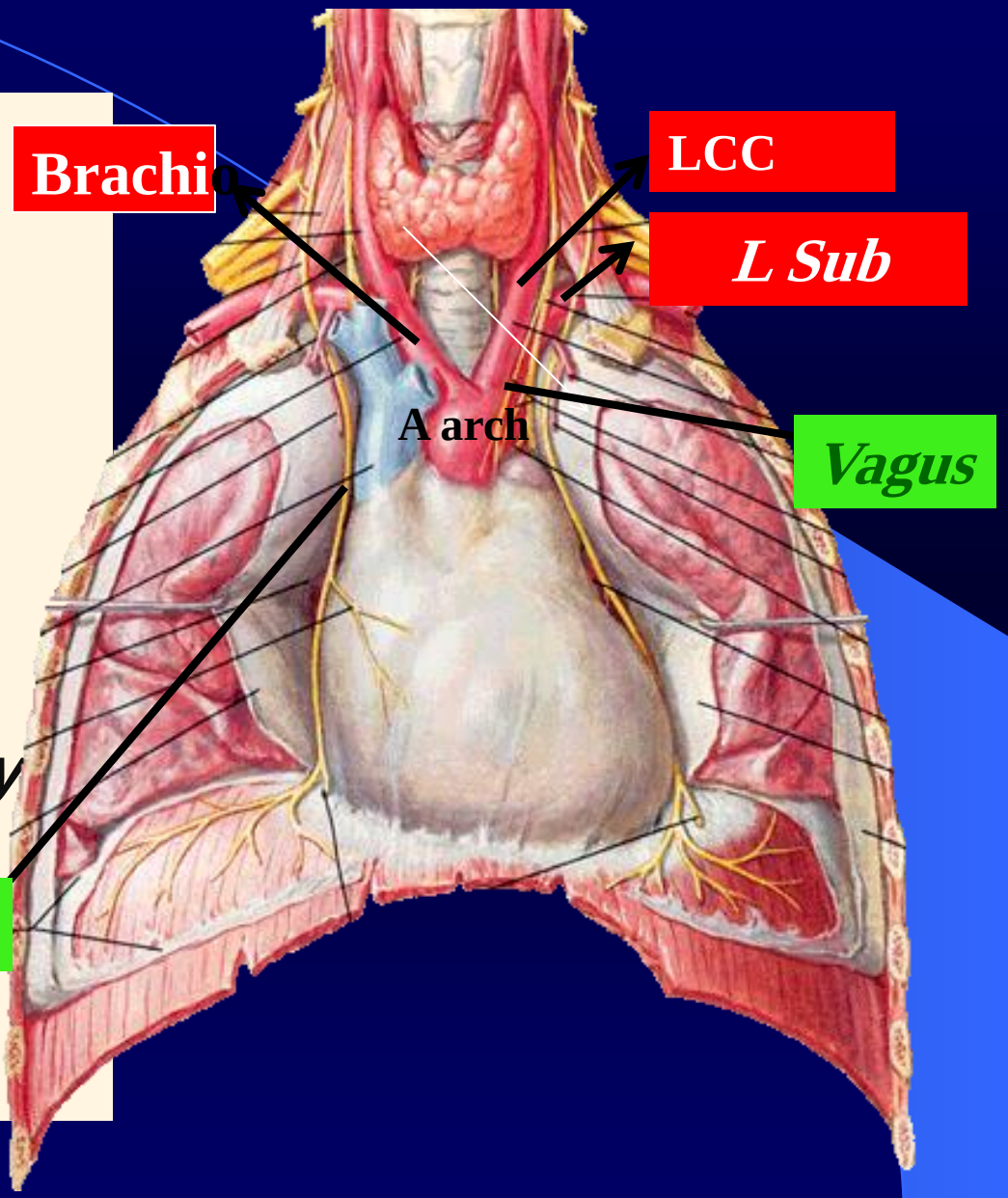
3. Beginning & termination of❑ arch of aorta

Contents of Superior Mediastinum

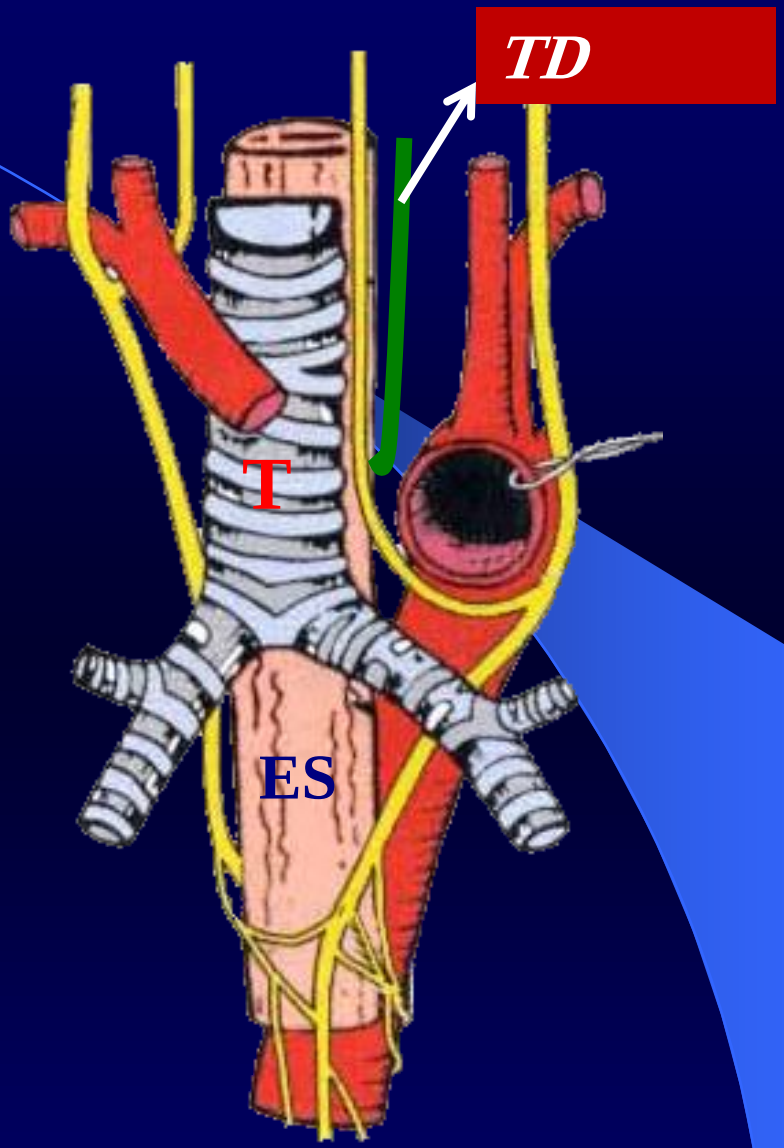
- ***(A) Superficial:***
  - ***Thymus Gland.***
  - ***Three Veins:***
  - ***Left brachiocephalic v.***
  - ***Right brachiocephalic v.***
  - ***Superior vena cava***



- ***(B) Intermediate:***
- ***Arch of aorta & its three branches:***
- ***Brachiocephalic artery.***
- ***L common carotid artery.***
- ***L Subclavian artery***
- ***Nerves: :***
  - ***Phrenic***
  - ***Vagus***



- ***(c) Deep:***
- ***Trachea***
- ***Esophagus***
- ***Thoracic Duct***



PHRENIC NERVES

Root Value:

- C3,4,5

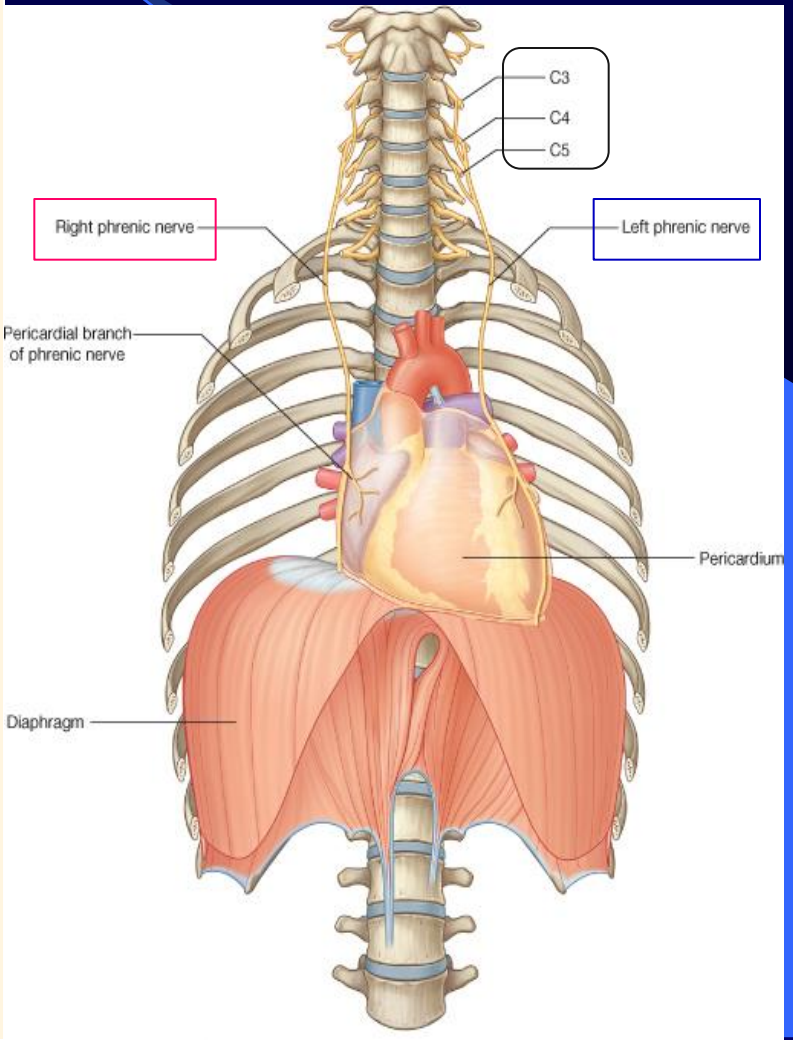
They pass through the Superior & Middle mediastina

Course in Thorax

- The right phrenic descends on the right side of SVC & heart.
- The left phrenic descends on the left side of heart.
- Both nerves terminate in the diaphragm
- **Branches :**

  1) Motor & Sensory fibers to Diaphragm

  2) Sensory fibers to pleurae & pericardium



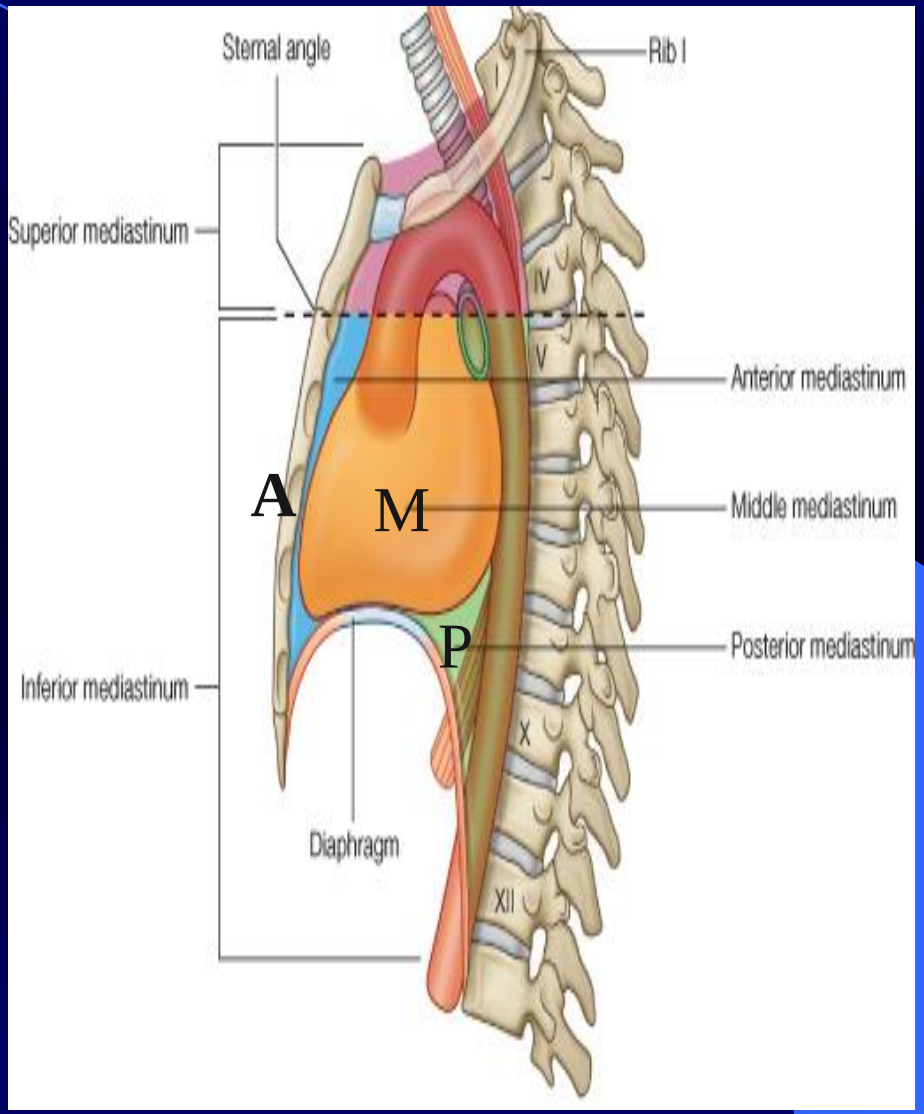
Inferior Mediastinum

- **Subdivided into:**
- ***Middle mediastinum***

  (M): **contains Heart**
- ***Anterior mediastinum***

  (A): **in front of Heart**
- ***Posterior mediastinum***

  (P): **behind Heart**



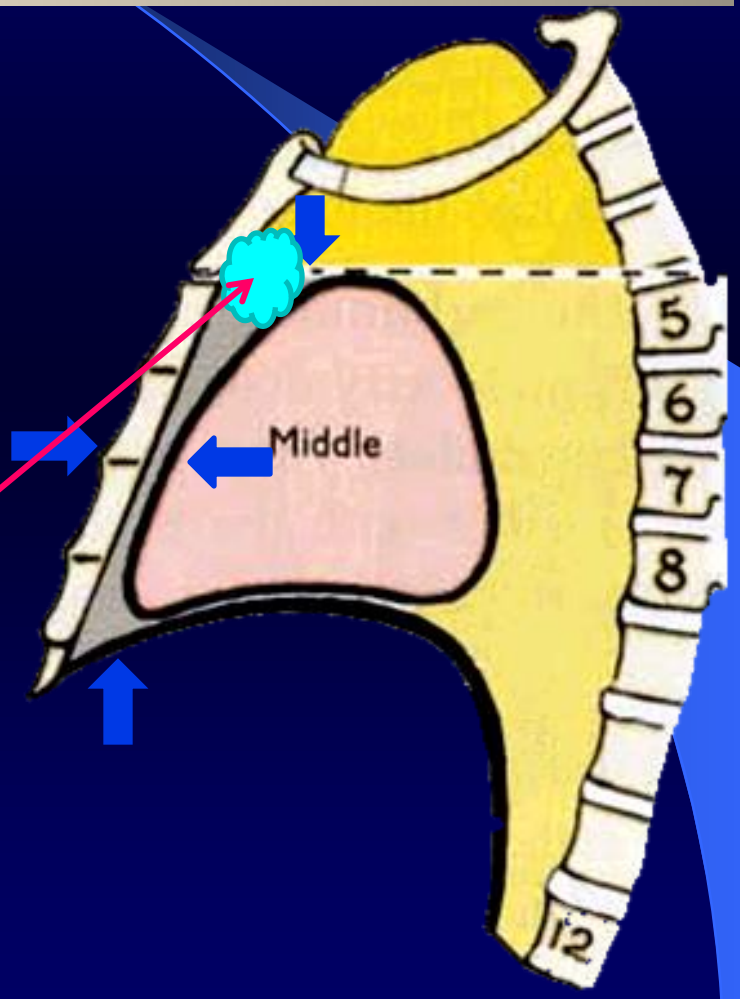
Anterior Mediastinum

Boundaries:

- **Superior:** Horizontal plane
- **Inferior:** Diaphragm
- **Anterior:** Body & xiphoid process of sternum
- **Posterior:** Heart
- **Lateral:** Lungs & pleurae

Contents:

- Thymus gland
- Lymph nodes



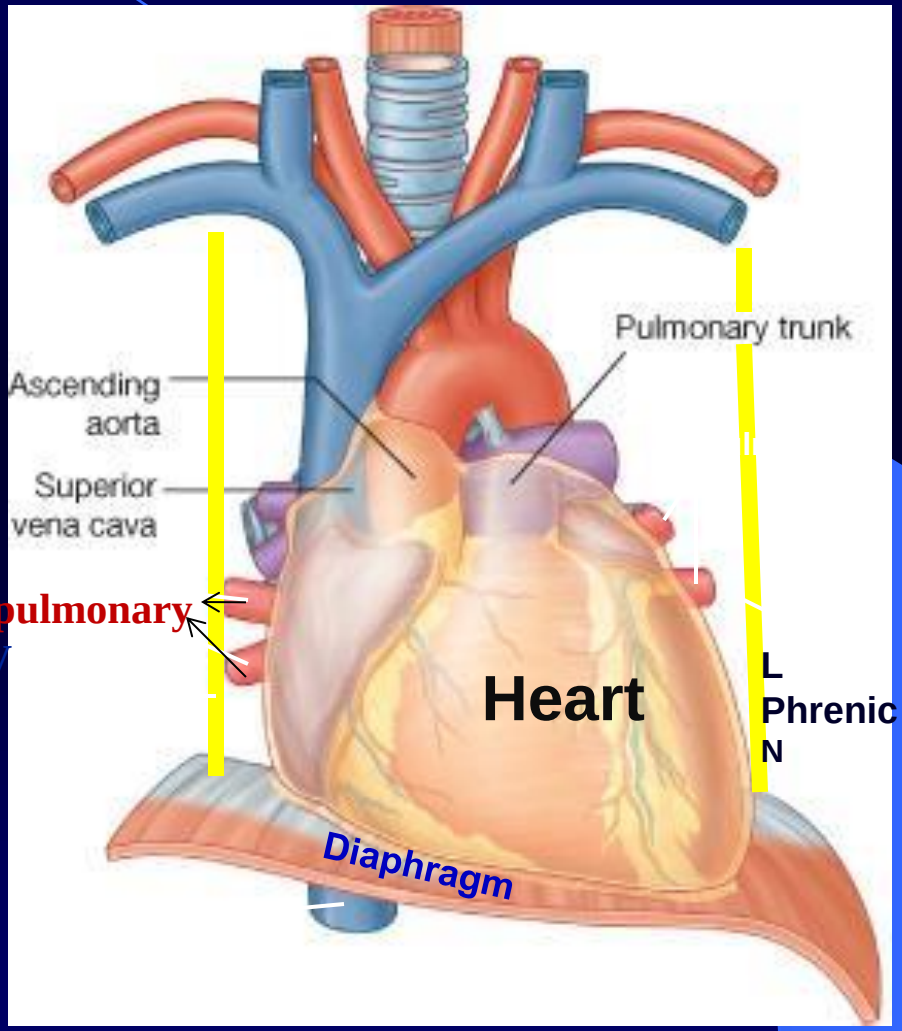
Middle Mediastinum

Site:

- Between anterior & posterior mediastina

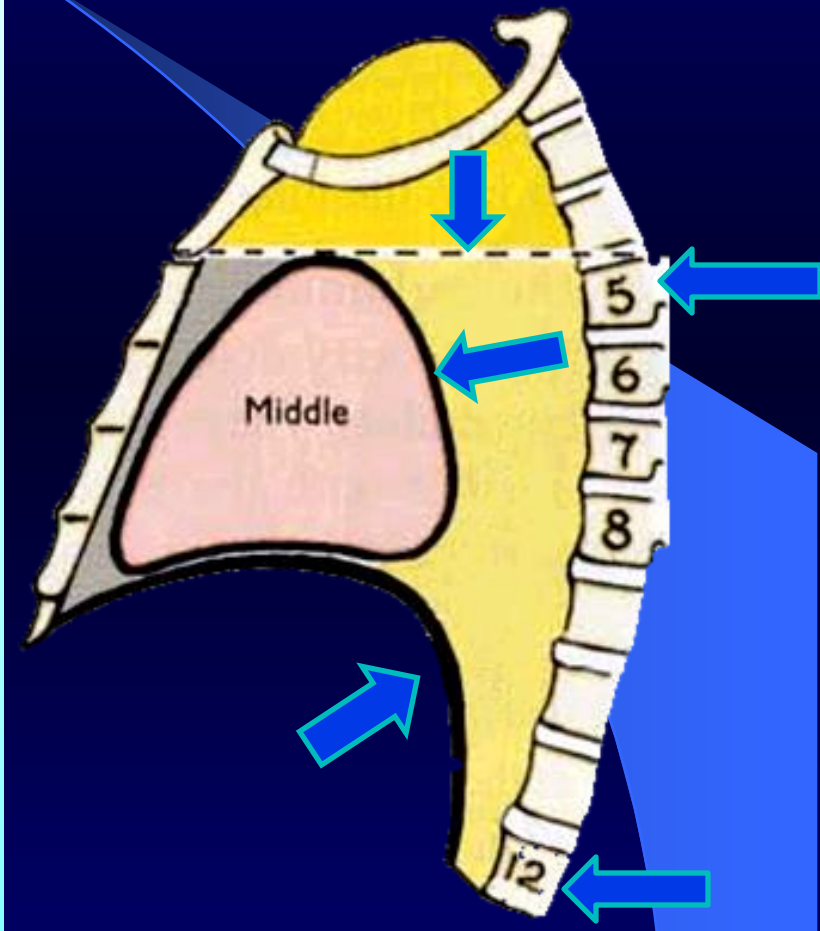
Contents:

- Heart & pericardium
- Ascending Aorta
- Pulmonary trunk
- Superior & Inferior vena cava
- Right & left pulmonary veins
- Right & left phrenic nerves
- Lymph nodes

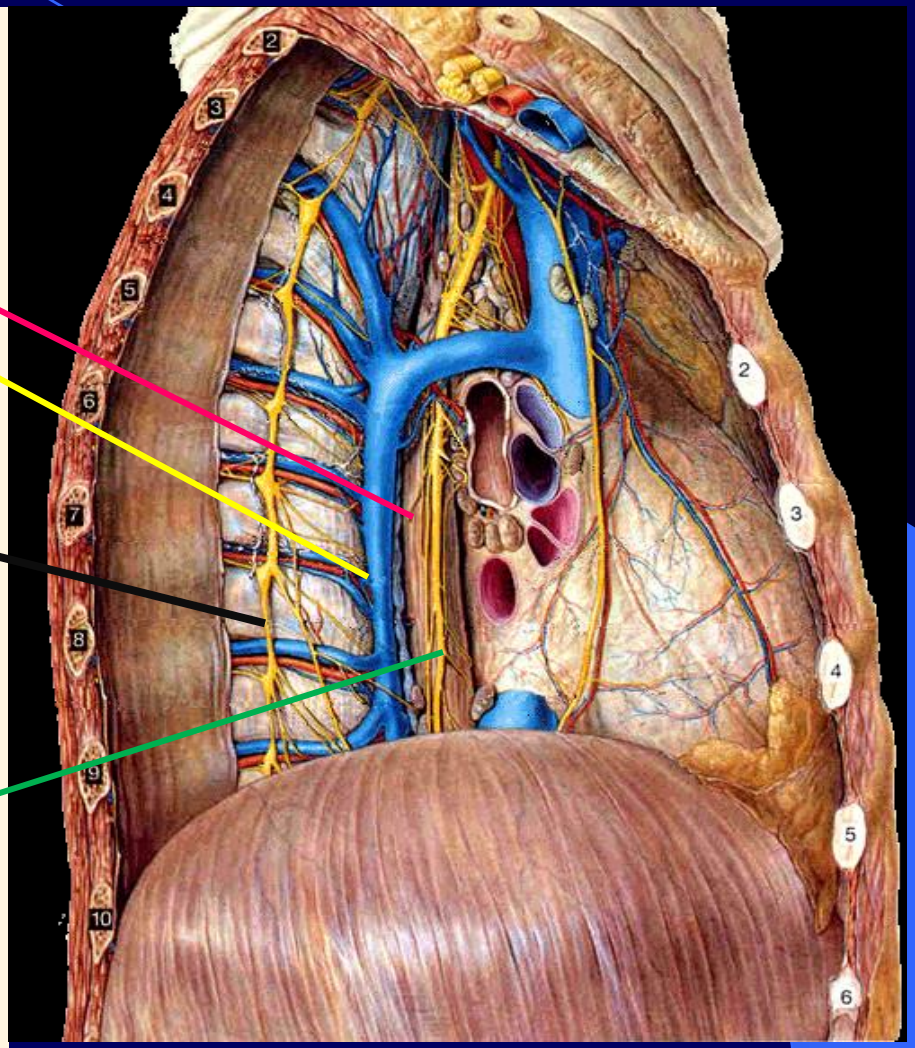


Posterior Mediastinum

- **Boundaries:**
- **Superior:** Horizontal plane
- **Inferior:** Diaphragm
- **Anterior:** Heart
- **Posterior:** Thoracic vertebrae from **T5 -T12**
- **Lateral:** Lungs & pleurae

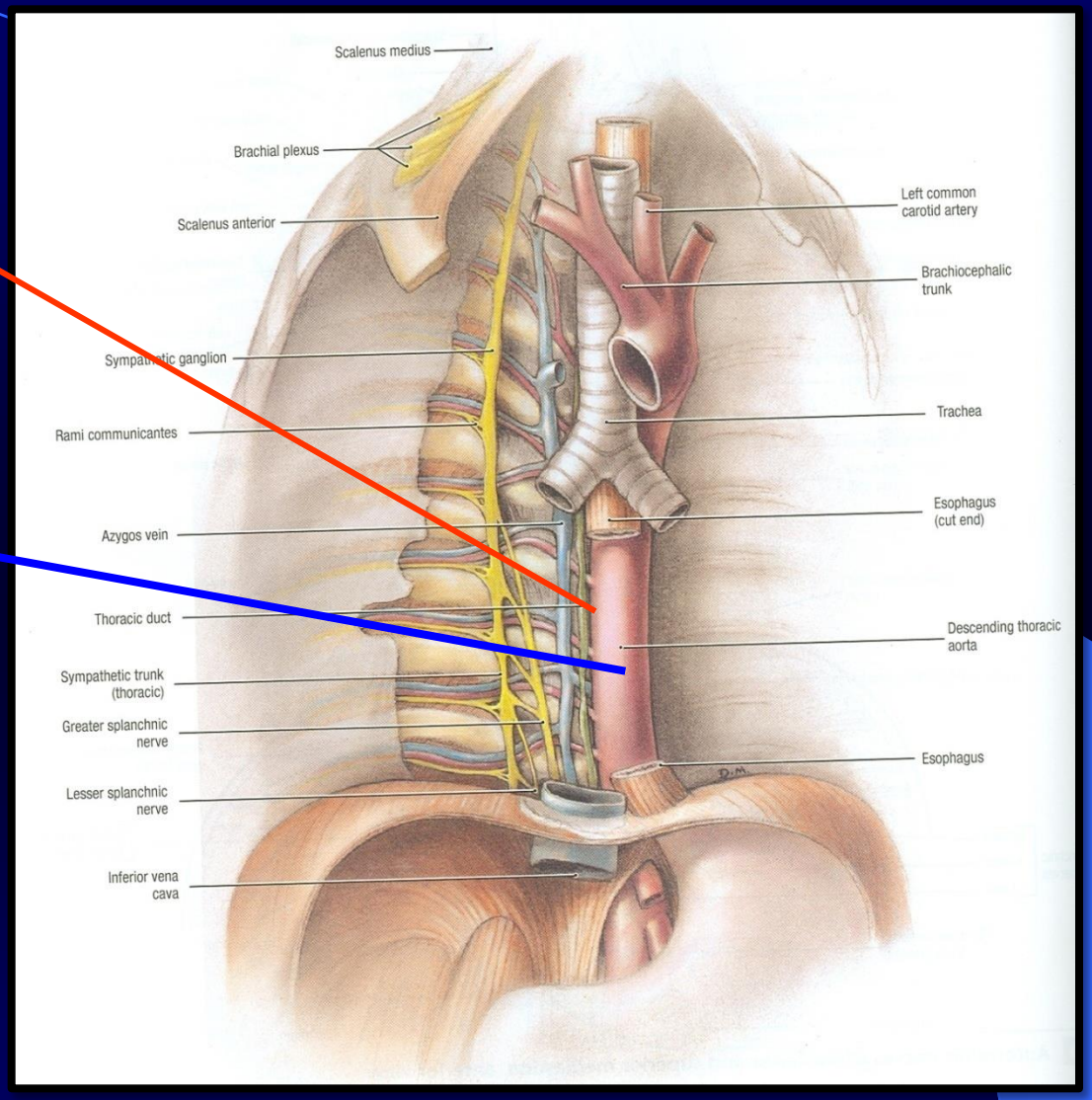


- ***Contents:***
- ***1. Esophagus,***
- ***2. Azygos system of veins,:*** **posterior & to the right of esophagus**
- ***3. R & L Thoracic Sympathetic trunks,***
- ***4. Mediastinal lymph nodes***
- ***5. Vagus nerves***

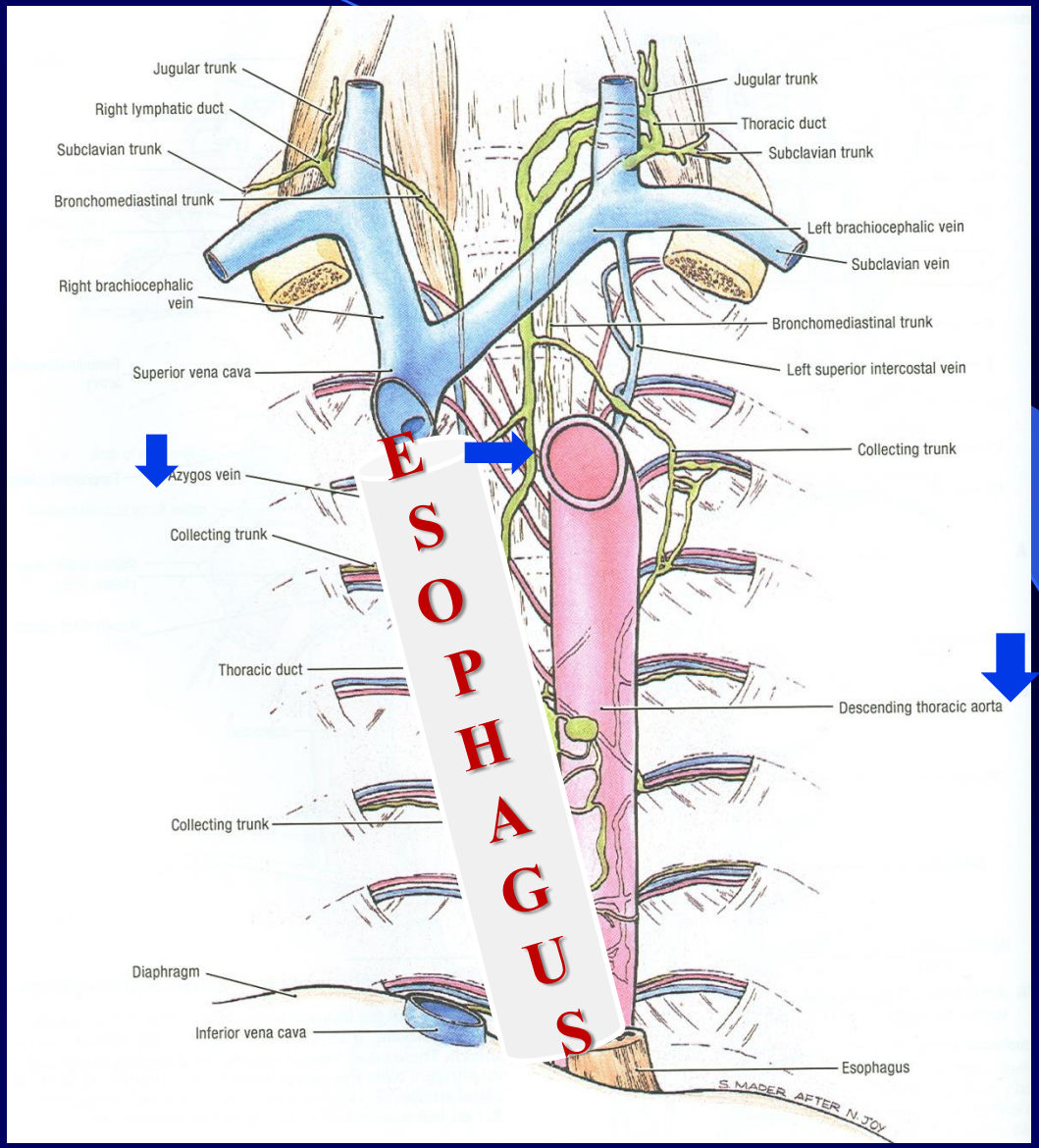


6. **Thoracic duct:** (posterior to esophagus).

7. **Descending aorta:** posterior & to the left of esophagus



CONTENTS OF POSTERIOR MEDIASTINUM

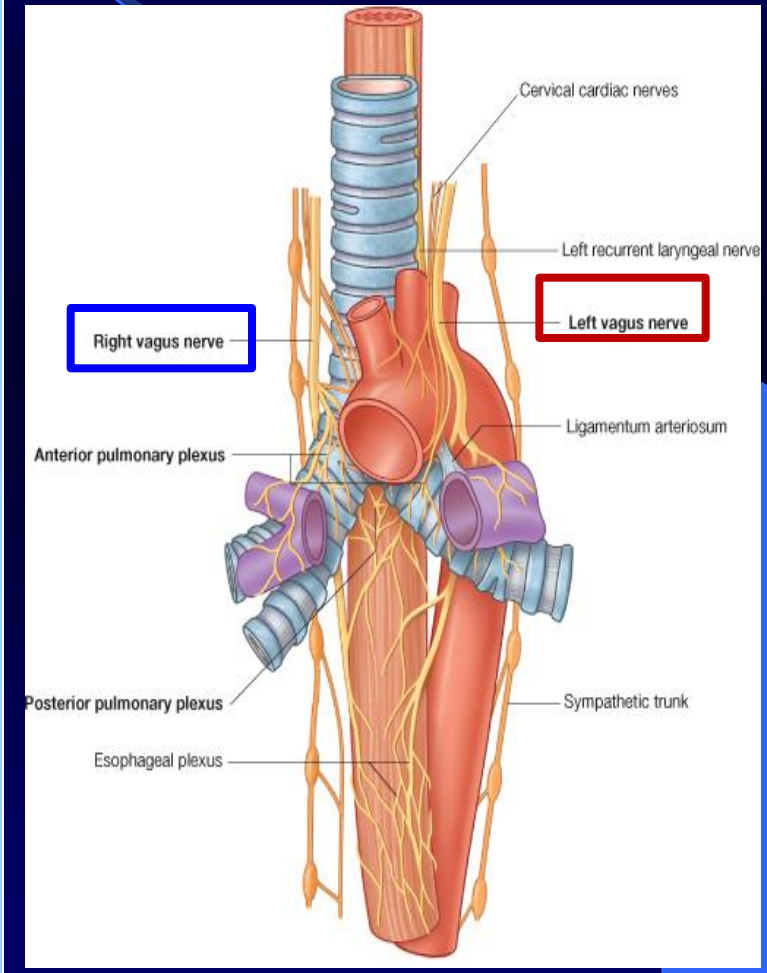


Right Sympathetic Trunk

Left Sympathetic Trunk

VAGUS NERVE

- It is the 10th cranial nerve.
- It descends through the Superior & Posterior mediastina
- The **right vagus** descends to the right side of trachea, forms the **posterior esophageal plexus** & continues in abdomen as **posterior gastric nerve.**
- The **left vagus** descends between left common carotid & left subcalavian arteries, forms the **anterior esophageal plexus** & continues in abdomen as **anterior gastric nerve**



AORTA

ASCENDING AORTA:

Beginning: at aortic ❑ orifice of left ventricle.

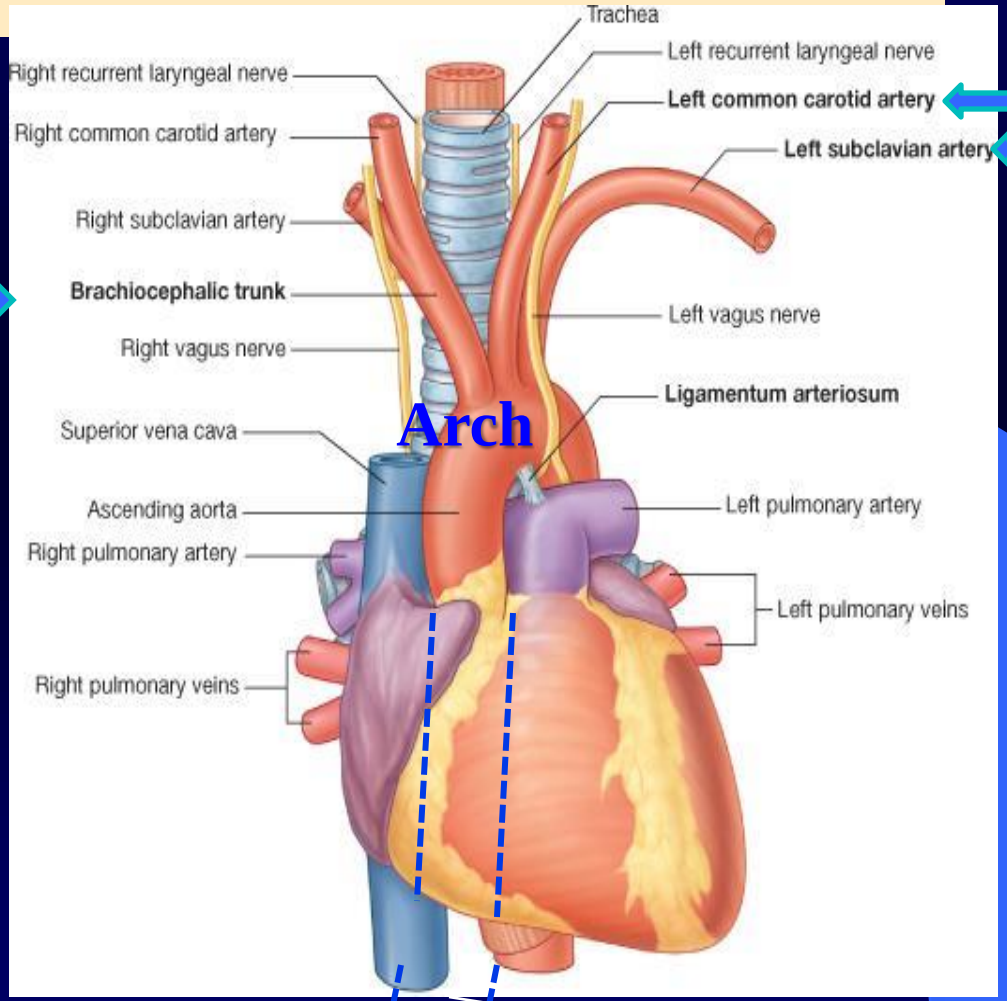
Course: in middle ❑ mediastinum

End: continues as ❑ arch of aorta (at level of T4)

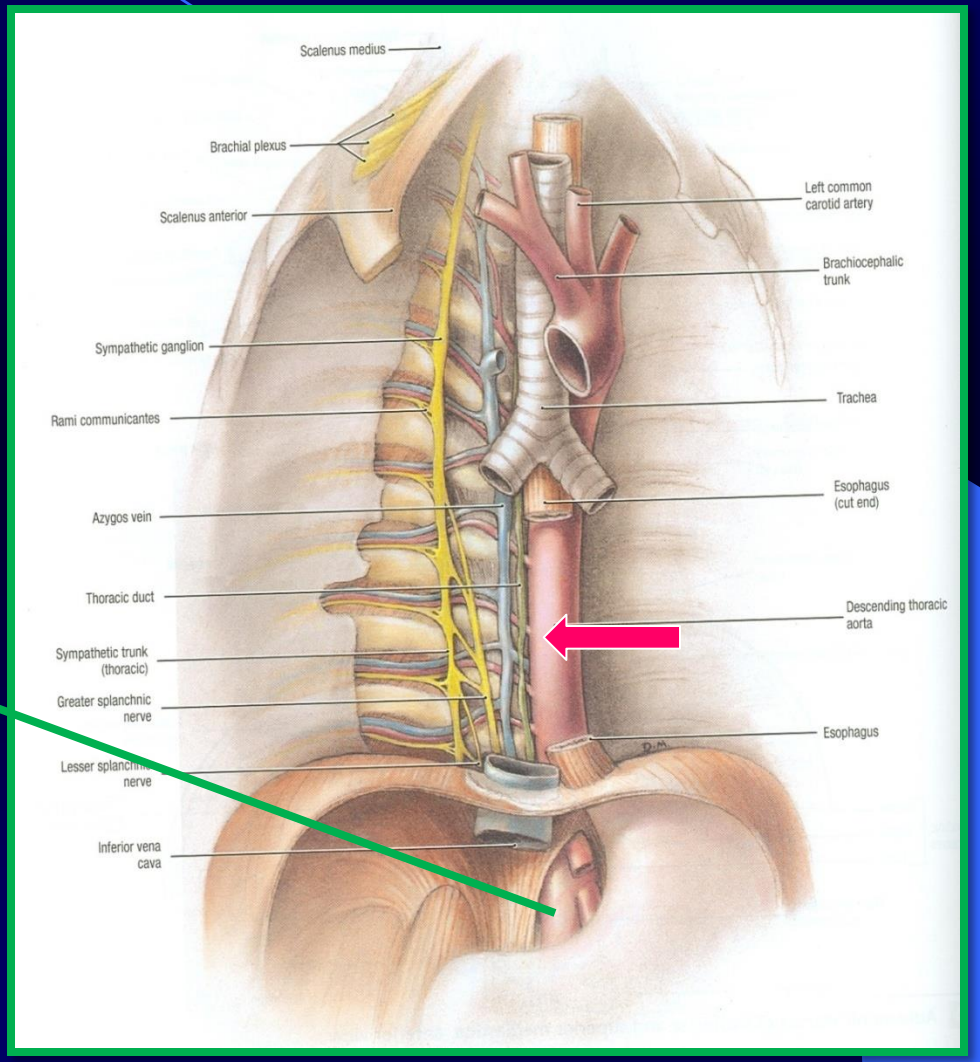
ARCH OF AORTA:

Course: in superior ❑ mediastinum

End: continues as ❑ descending thoracic aorta (at level of T4)



- **DESCENDING AORTA:**
  - **Course:** in posterior mediastinum
  - **End:** continues as abdominal aorta after it passes through diaphragm



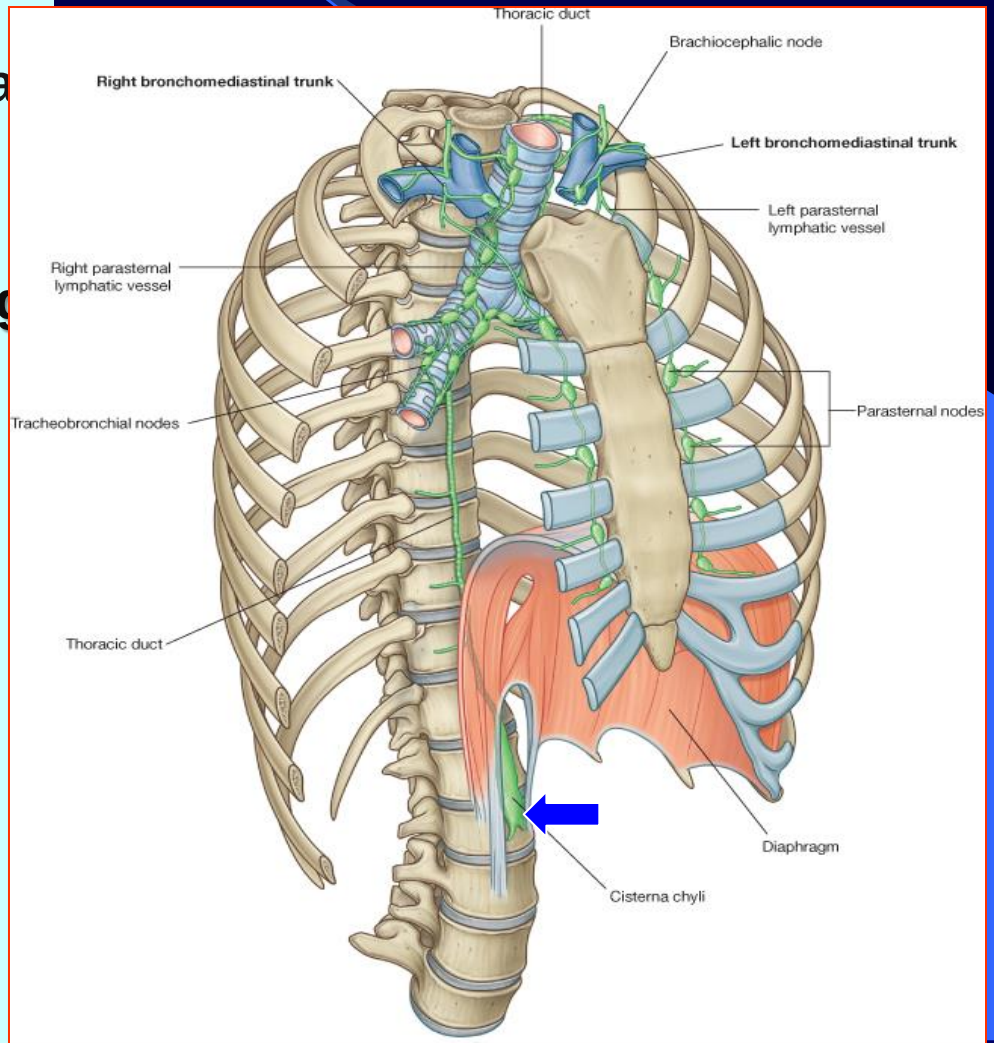
THORACIC DUCT

BEGINNING:

- It is the continuation of Cisterna Chyli (at the level of L1).

COURSE:

- It passes through aortic opening of diaphragm.
- It ascends in Posterior mediastinum (posterior to esophagus).
- It ascends in Superior mediastinum (to the left of esophagus).



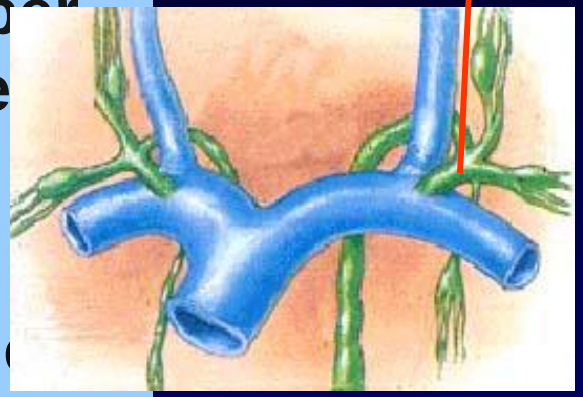
TRIBUTARIES:

It receives:

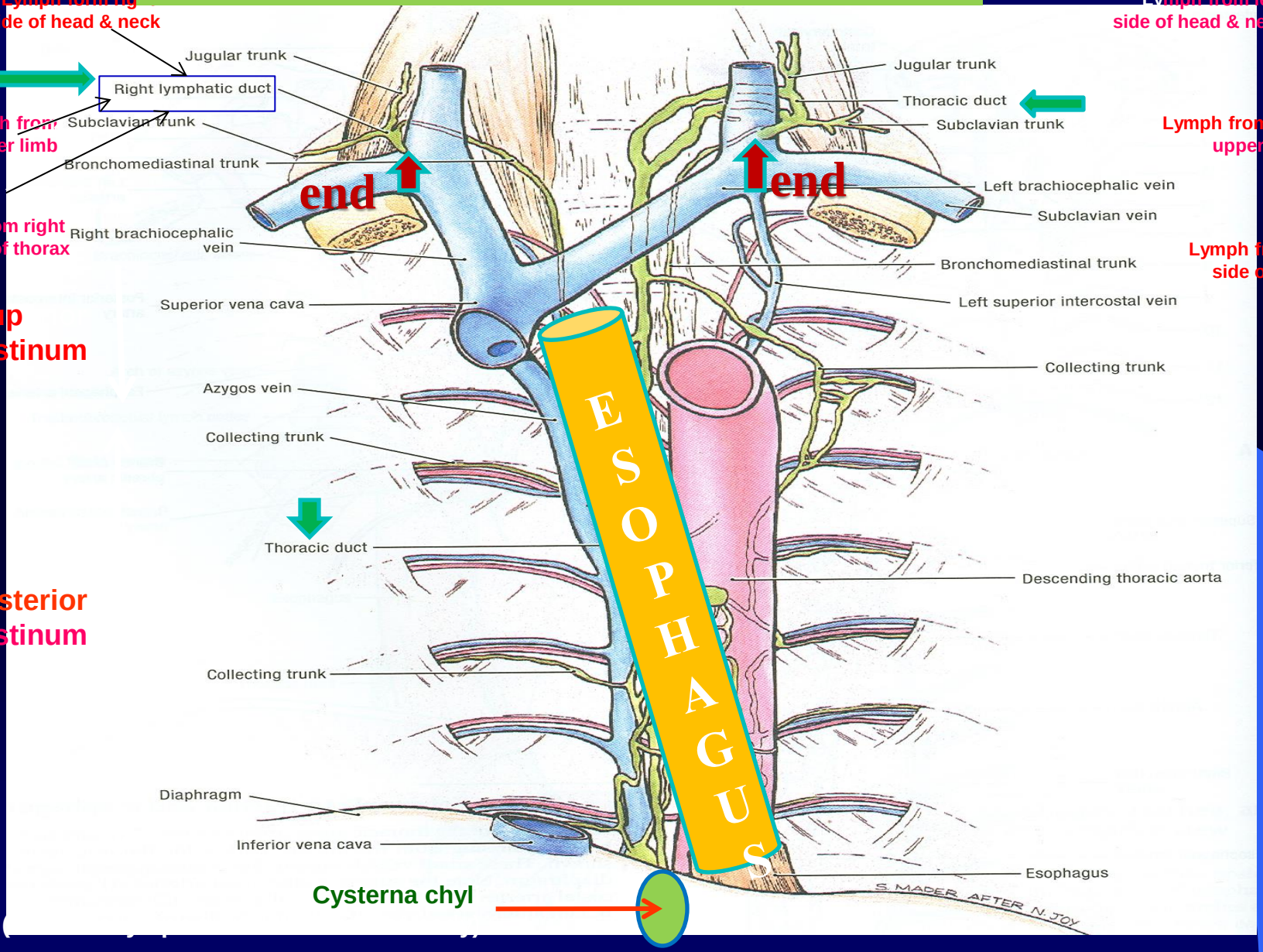
- Lymphatics from all body
- **EXCEPT:**
- Right side of thorax, Right upp… limb & Right side… head & neck.

END:

- It opens in the l… brachiocephalic vein.



LYMPHATIC VESSELS IN THORAX



Thank You