

MEDIASINUM

Dr Jamila EL medany

OBJECTIVES

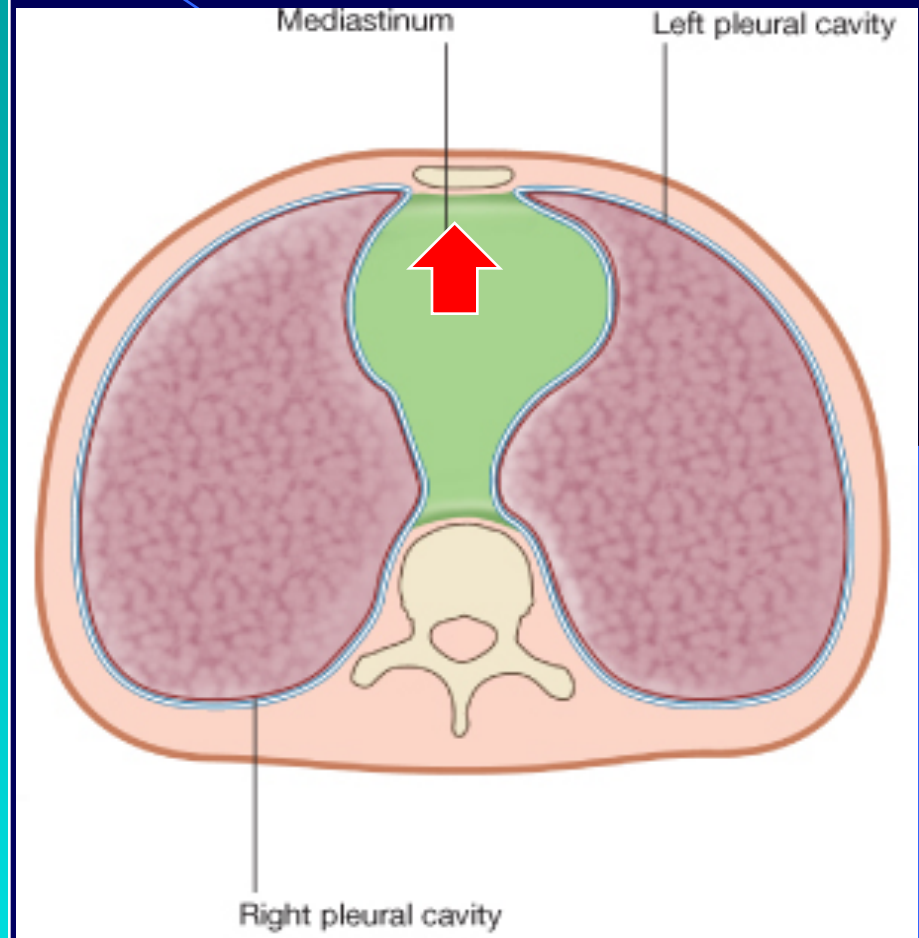
At the end of the lecture, students should be able to:

- ❑ **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.



Boundaries

Superior:

Thoracic outlet:
(manubrium, 1st rib & 1st thoracic v)

Inferior:

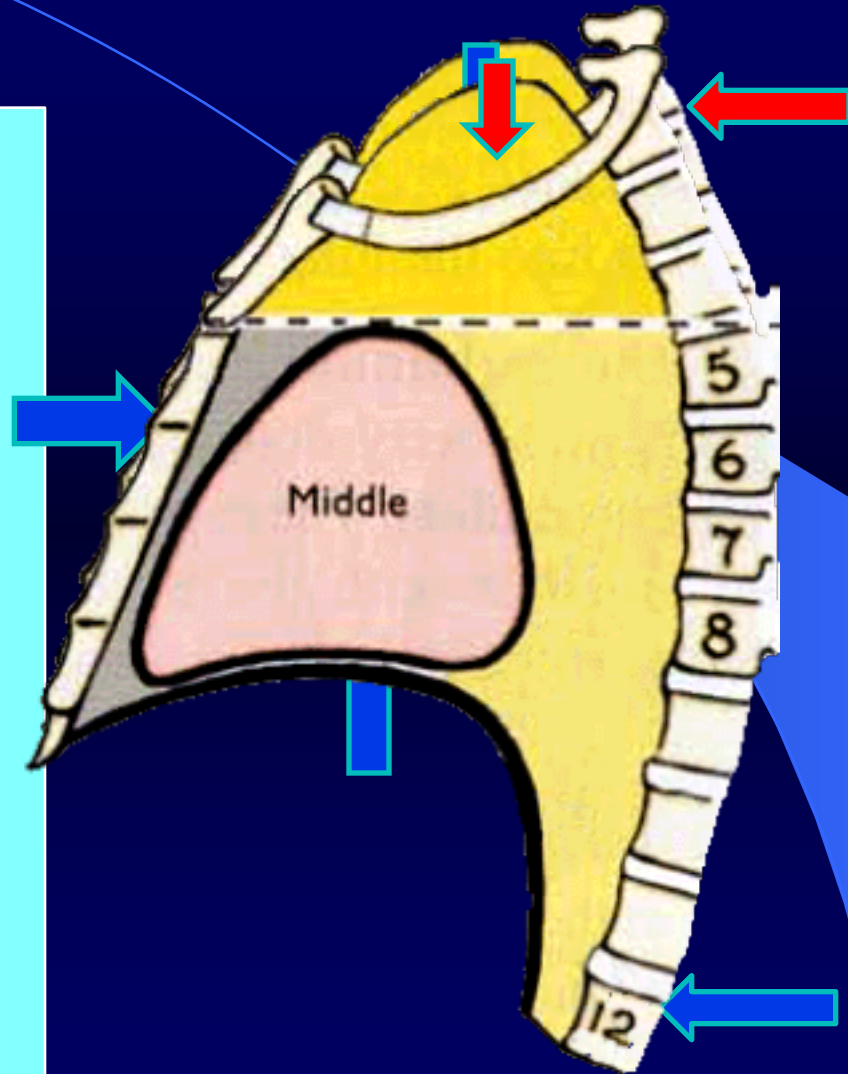
Diaphragm.

Anterior:

Sternum.

Posterior:

The 12 thoracic vertebrae.

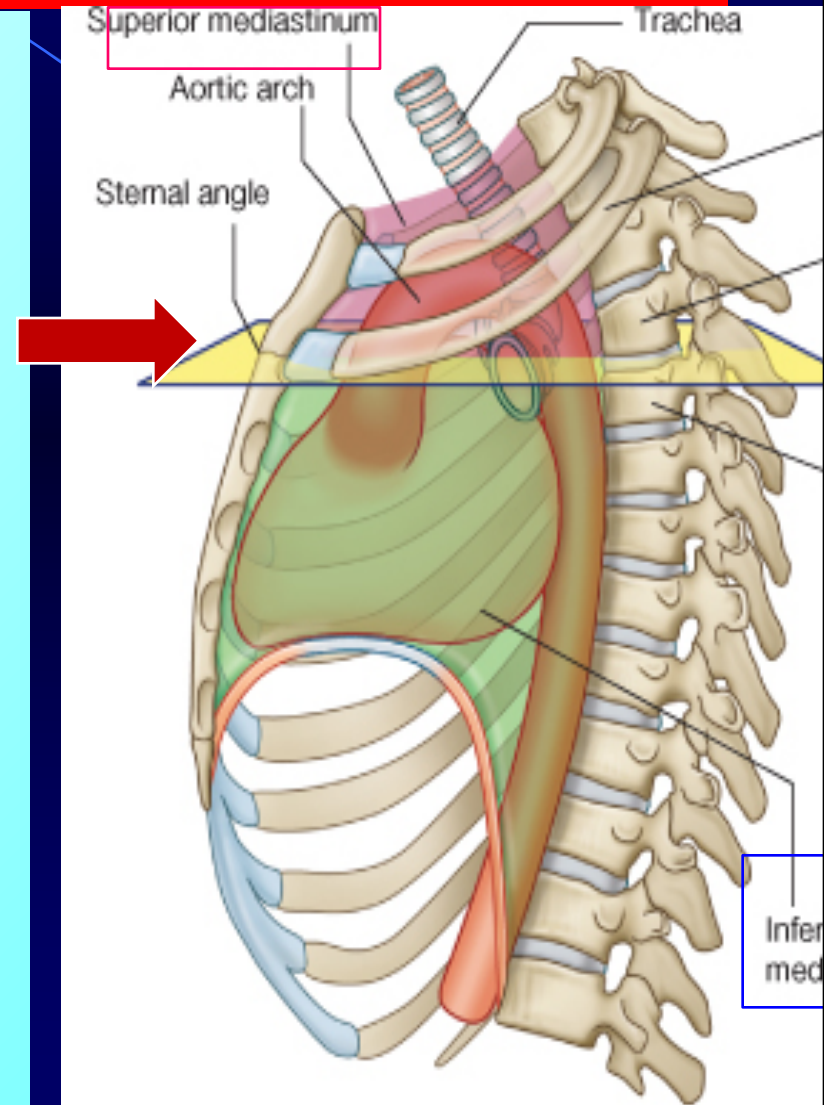


Subdivisions

- *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

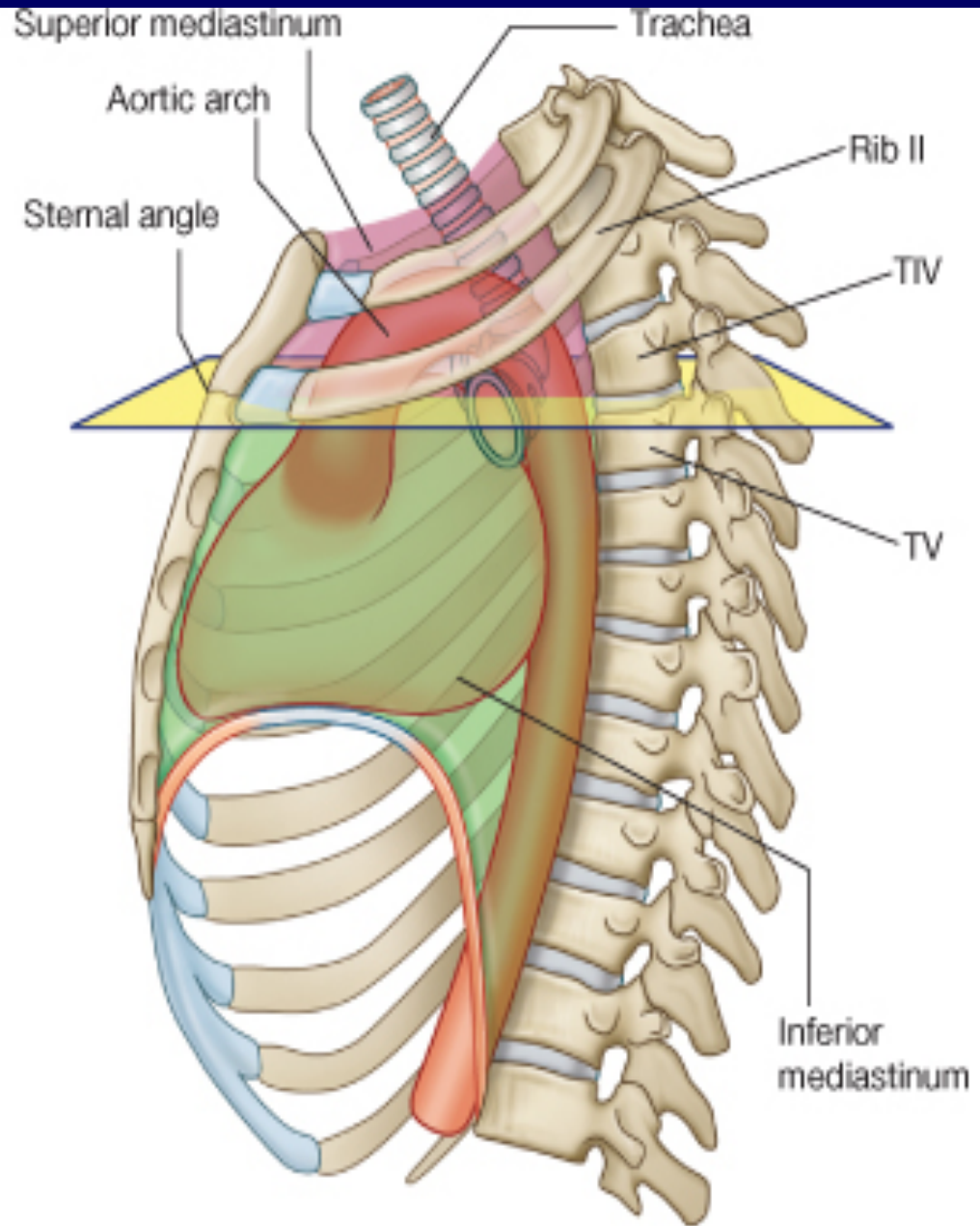
Boundaries:

Superior: Thoracic outlet.

Inferior: Horizontal plane.

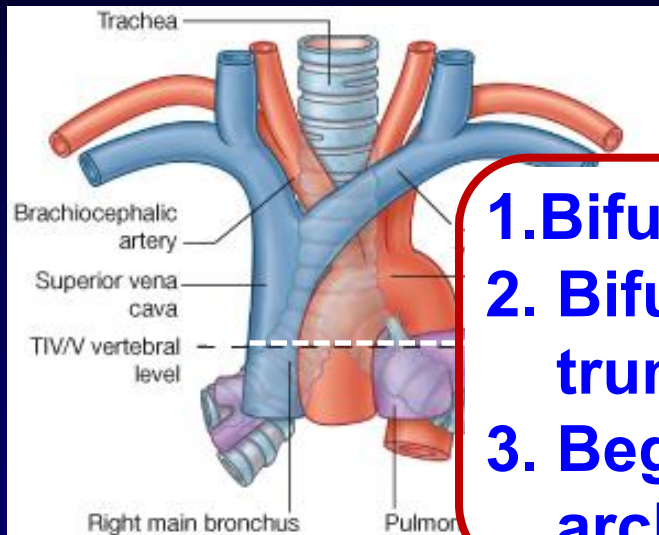
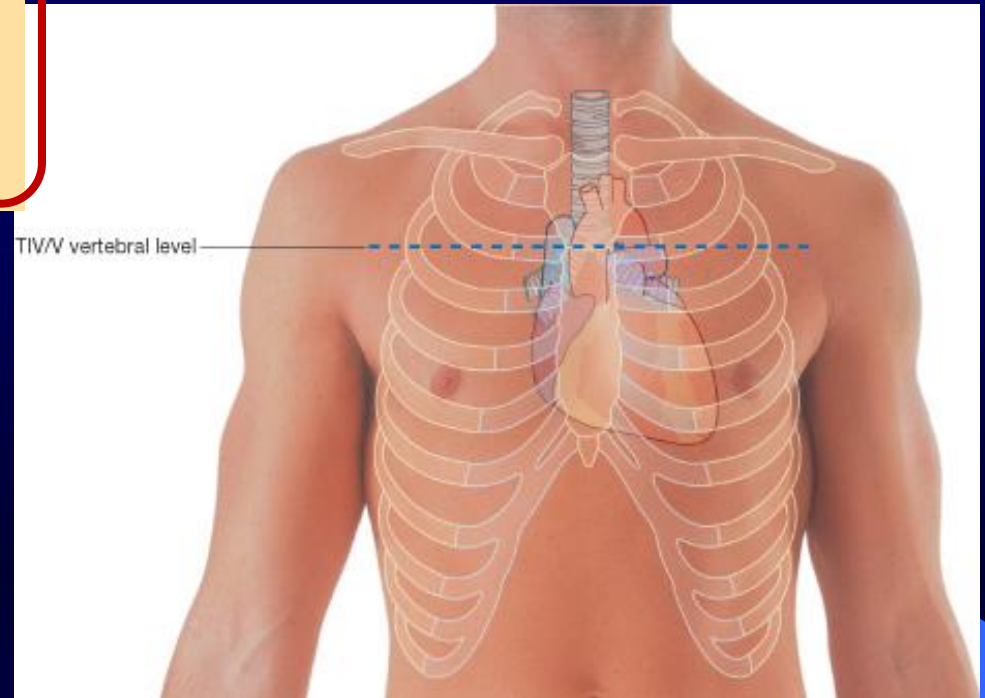
Anterior: Manubrium.

Posterior: Upper (4) thoracic vertebrae.



LEVEL OF T4

It is at the Level of:
Sternal angle
Second costal cartilage

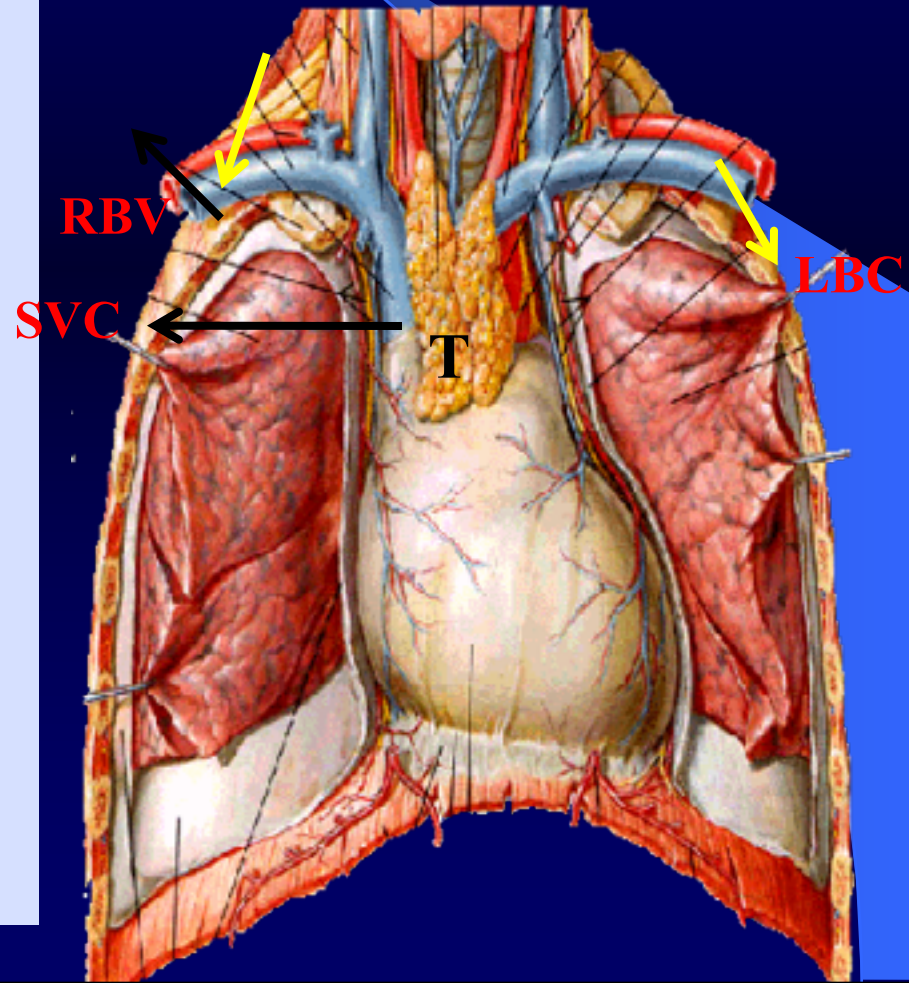


1. Bifurcation of trachea
2. Bifurcation of pulmonary trunk
3. Beginning & termination of arch of aorta

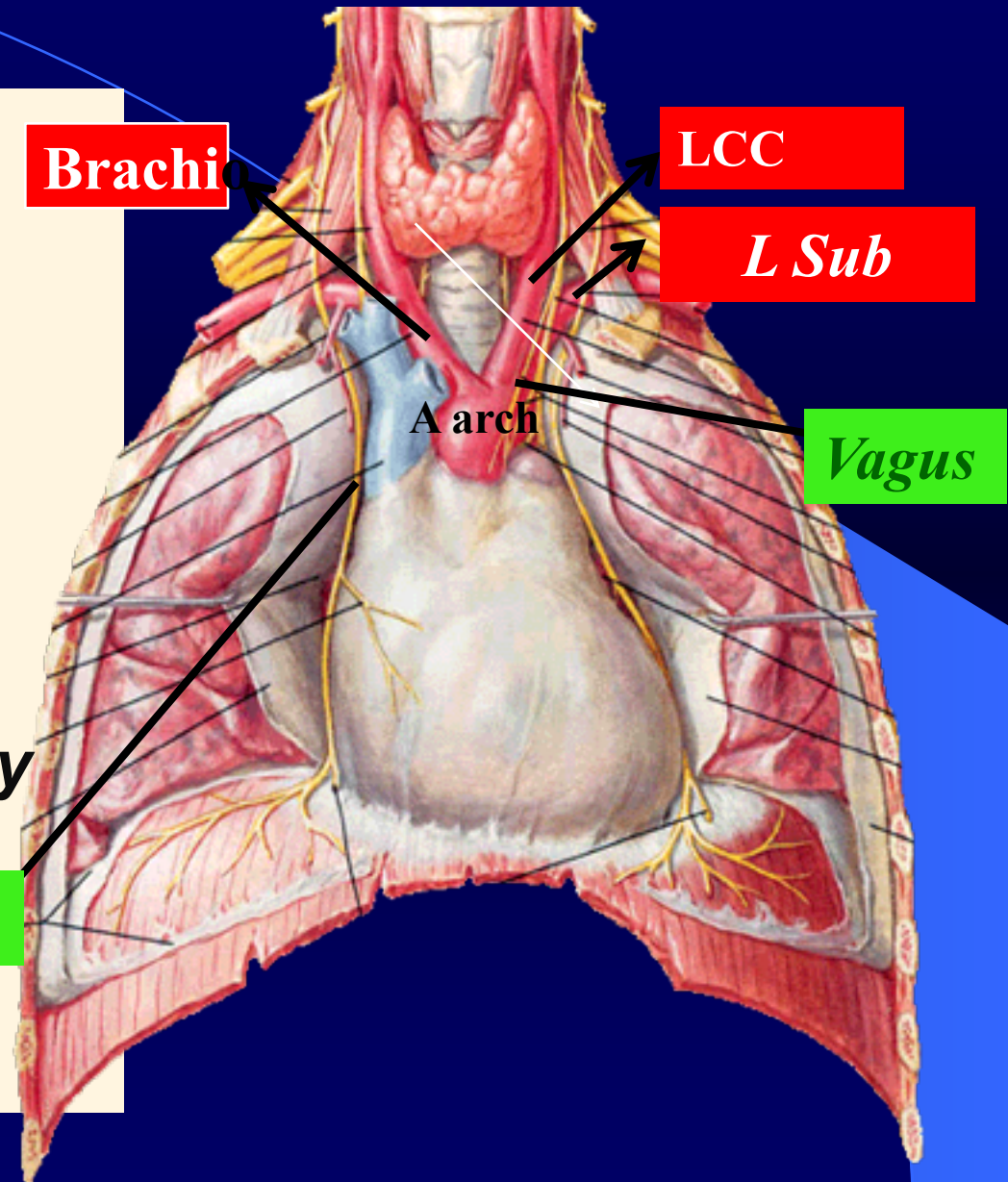
Contents of Superior Mediastinum

- (A) Superficial:

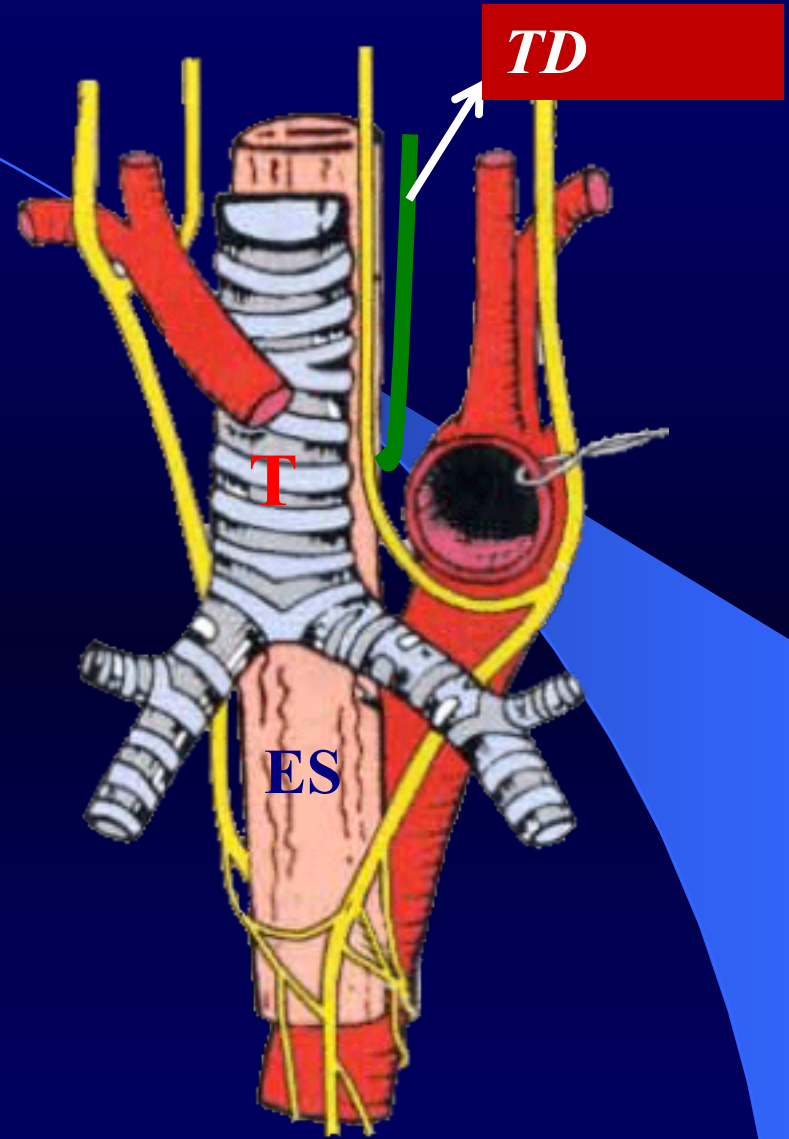
- *Thymus Gland.*
- Three Veins:
- *Left brachiocephalic v.*
- *Right brachiocephalic v.*
- *Superior vena cava*



- (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

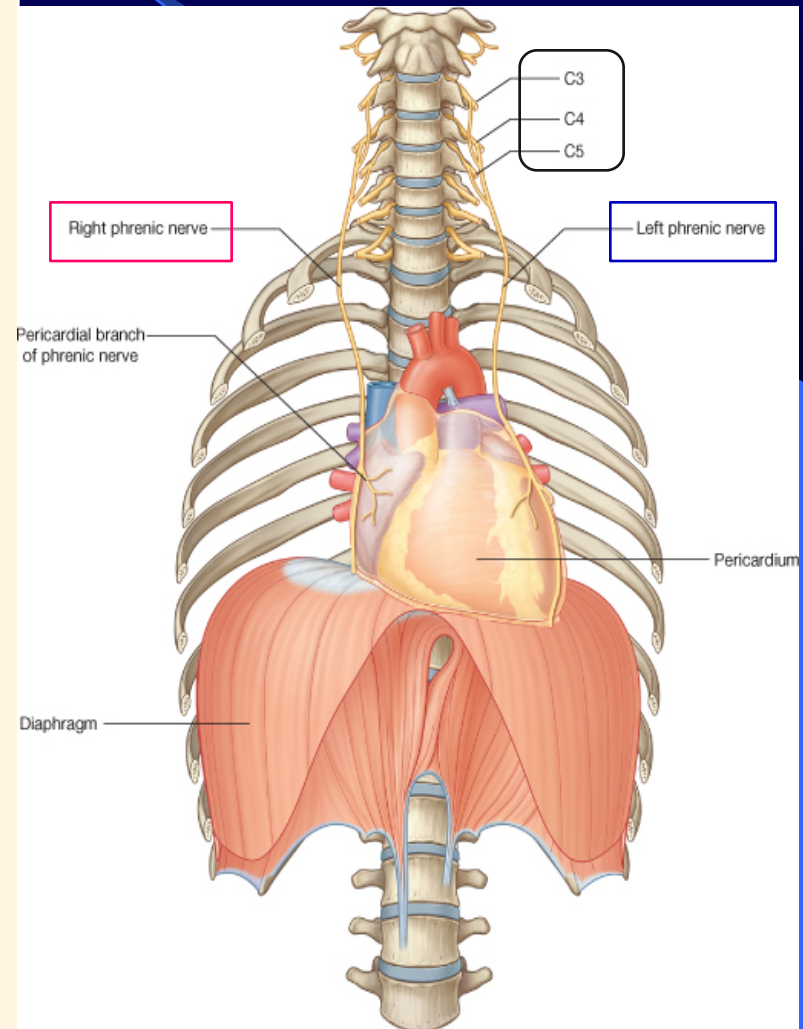
Root Value:

- 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*

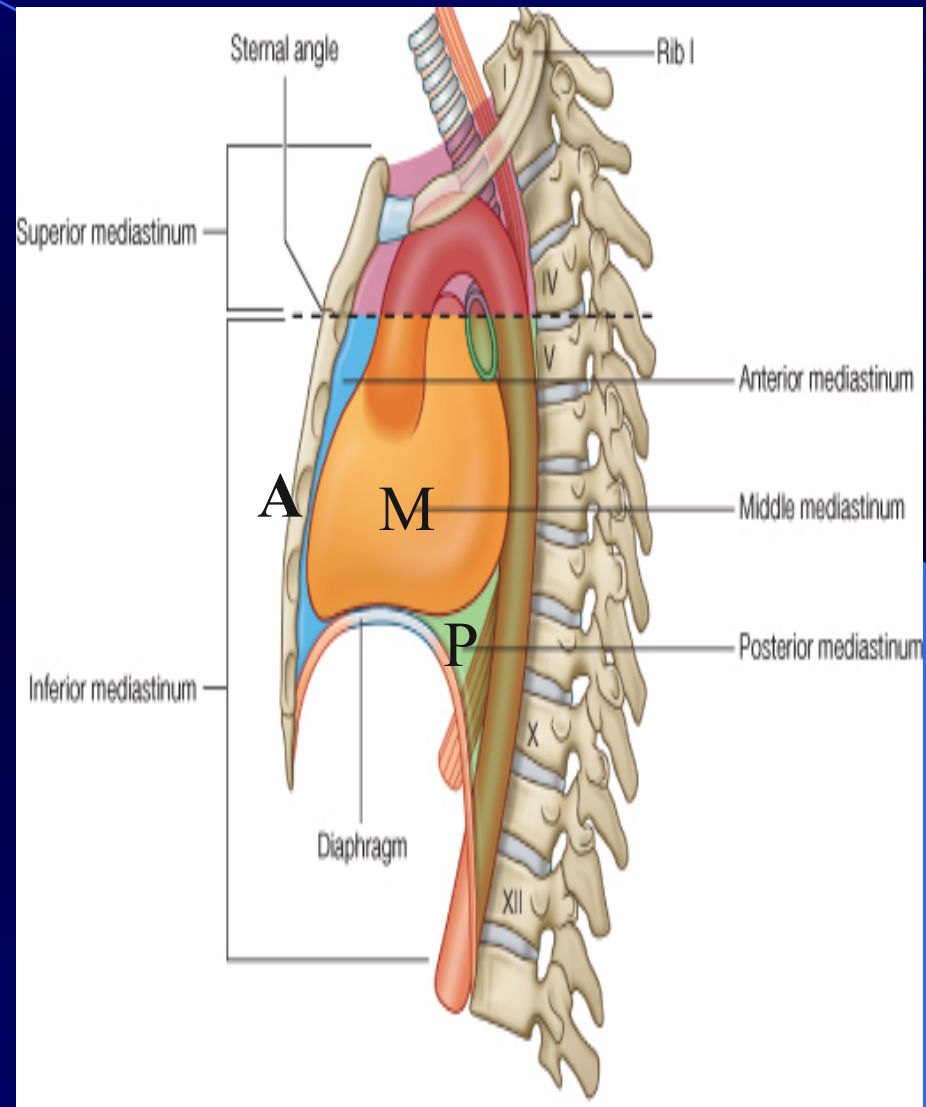
- *(M)*: contains Heart

- *Anterior mediastinum*

- *(A)*: in front of Heart

- *Posterior mediastinum*

- *(P)*: behind Heart



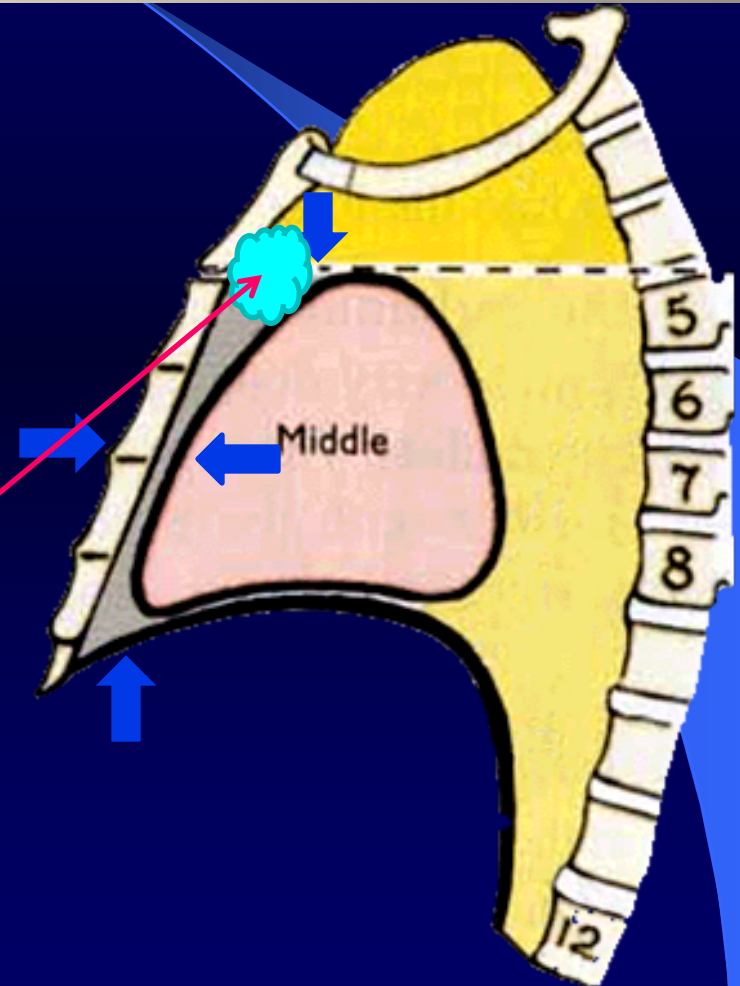
Anterior Mediastinum

Boundaries:

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

Contents:

- ❑ Thymus gland
- ❑ Lymph nodes



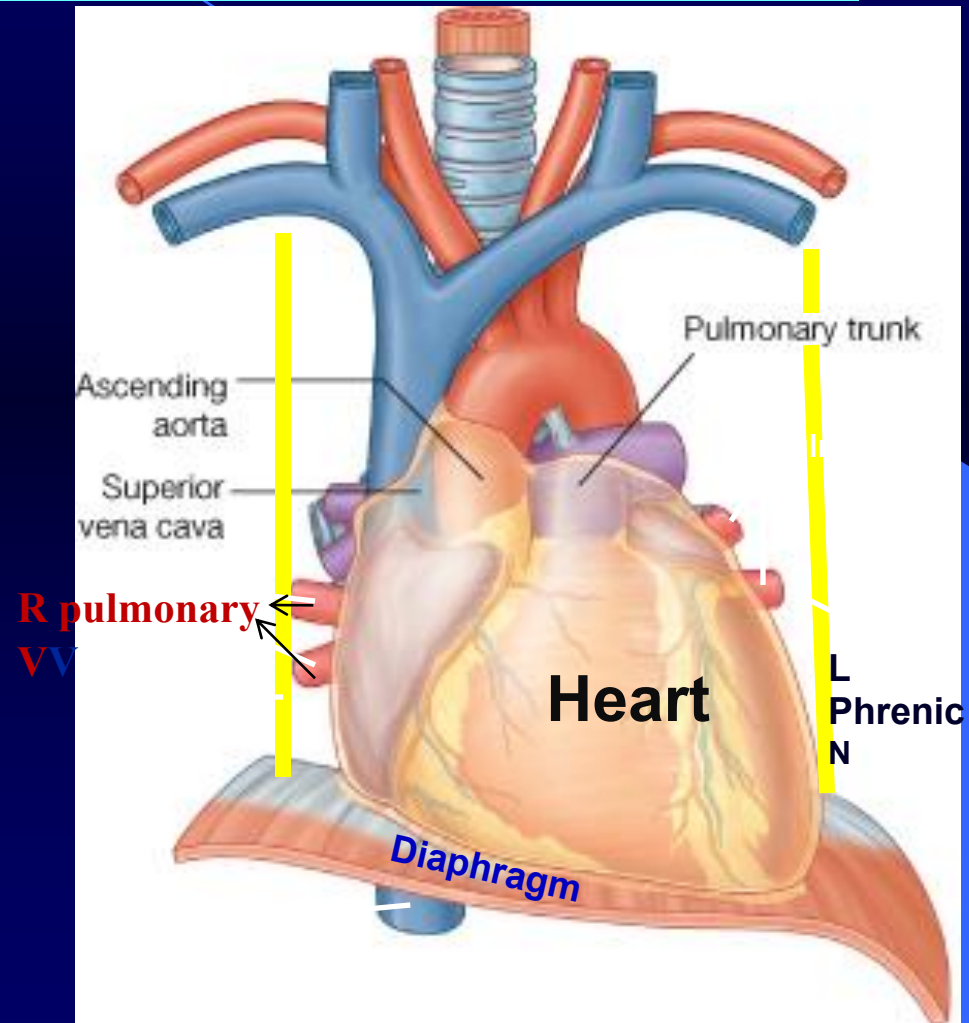
Middle Mediastinum

Site:

- ❑ Between anterior & posterior mediastina

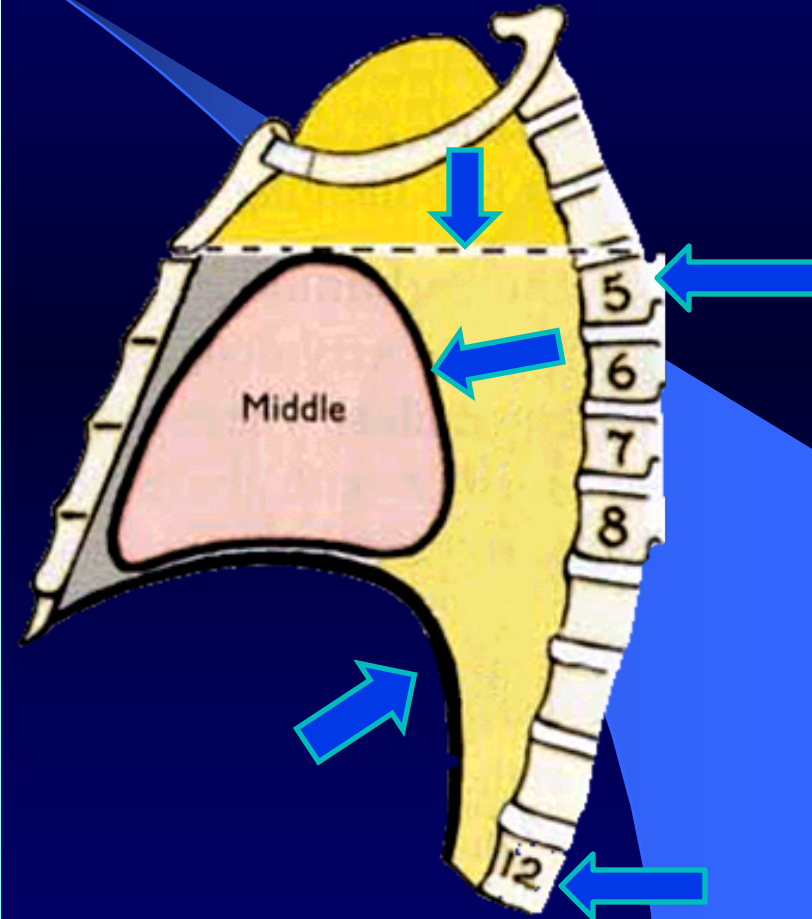
Contents:

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

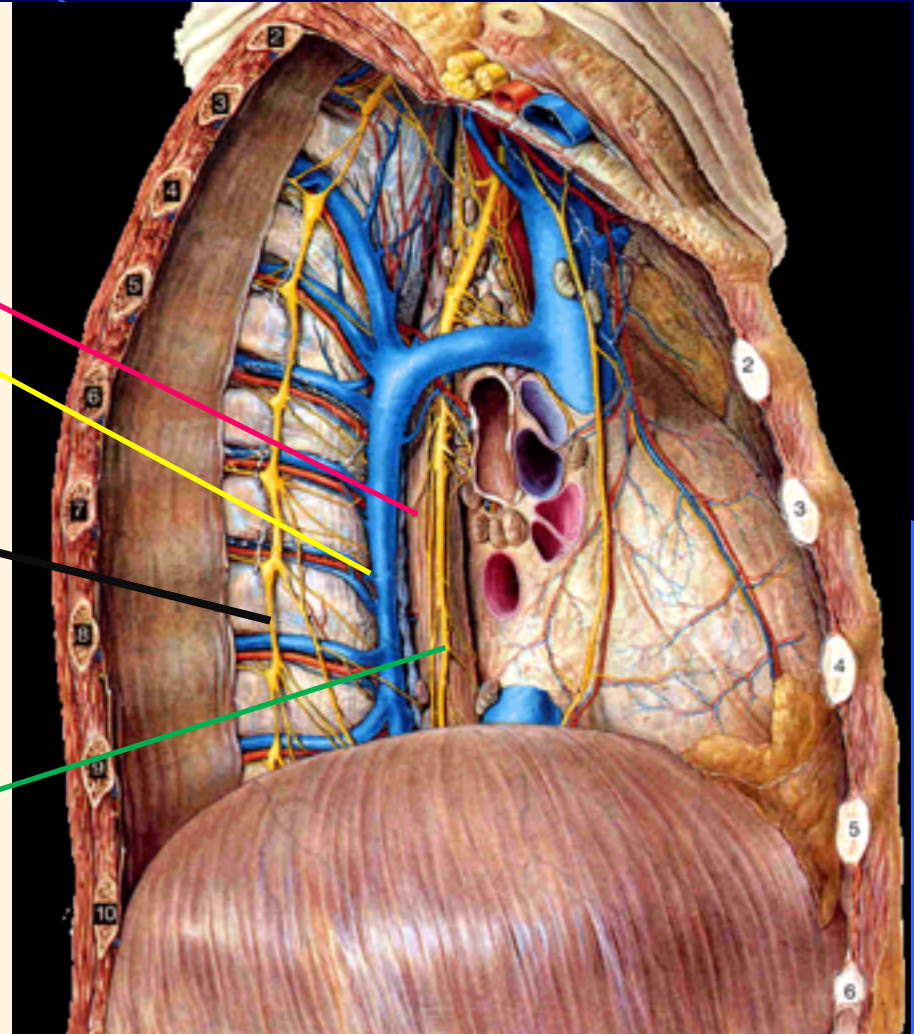


Posterior Mediastinum

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

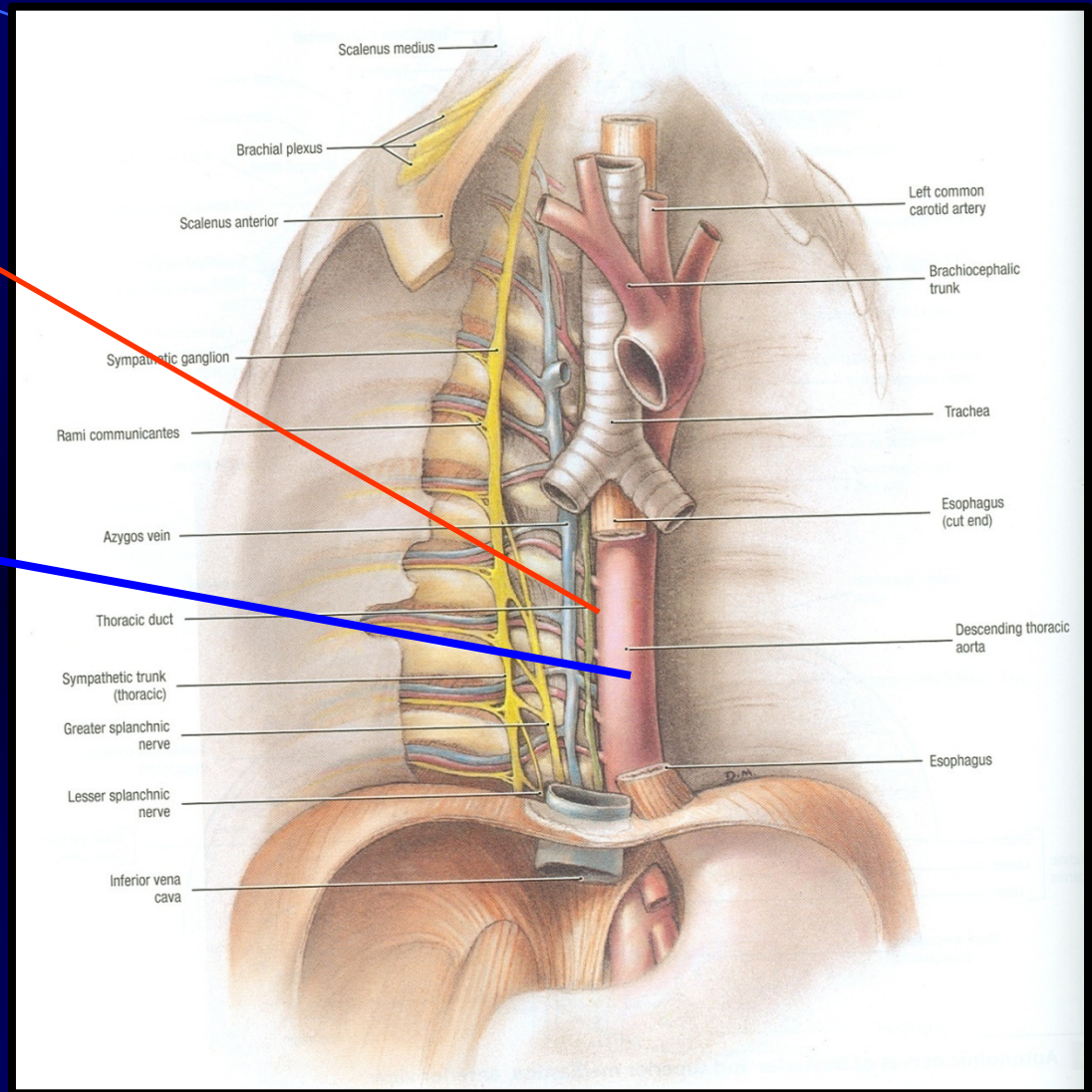


- **Contents:**
- **1. Esophagus,**
- **2. Azygos system of veins, : posterior & to the right of esophagus**
- **3. R & L Thoracic Sympathetic trunks,**
- **4. Mediastinal lymph nodes**
- **5. Vagus nerves**

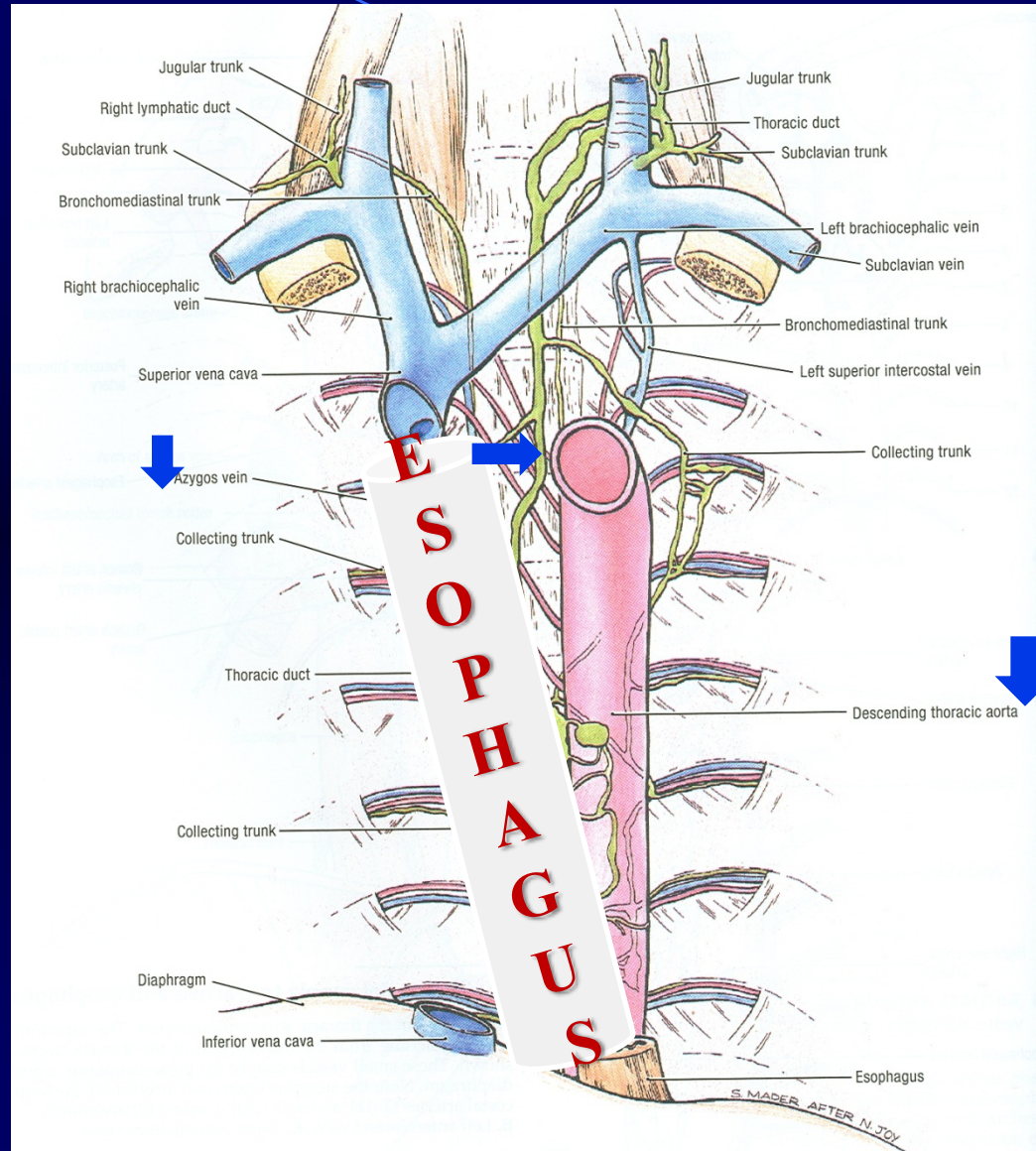


6. Thoracic duct:
(posterior to esophagus).

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



CONTENTS OF POSTERIOR MEDIASTINUM

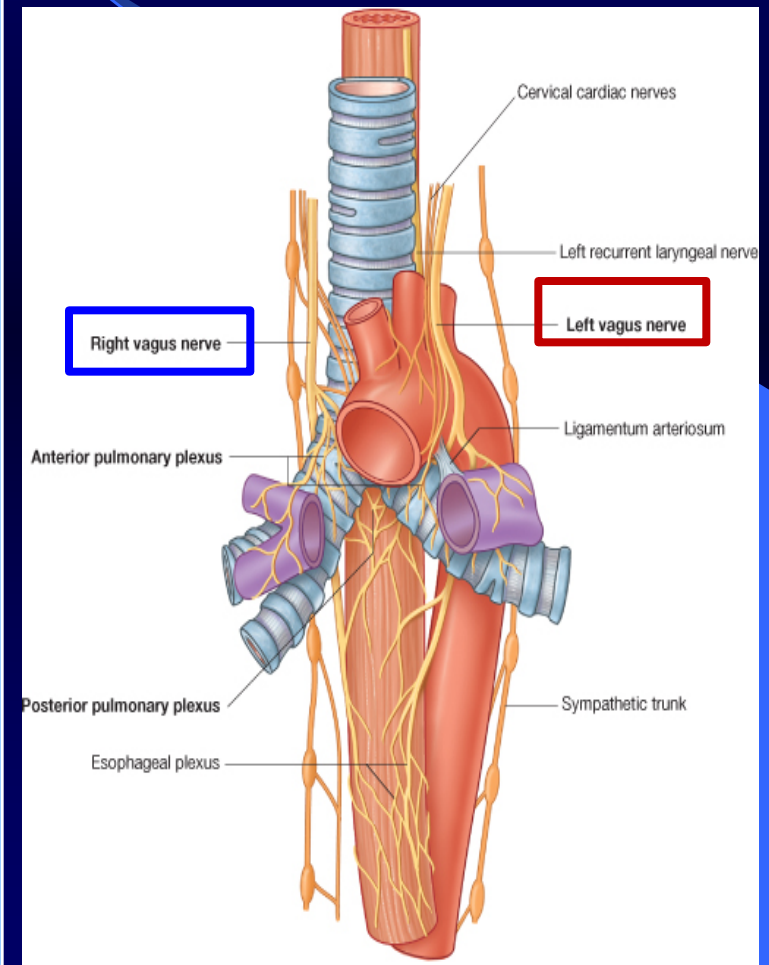


Right
Sympathetic
Trunk

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.

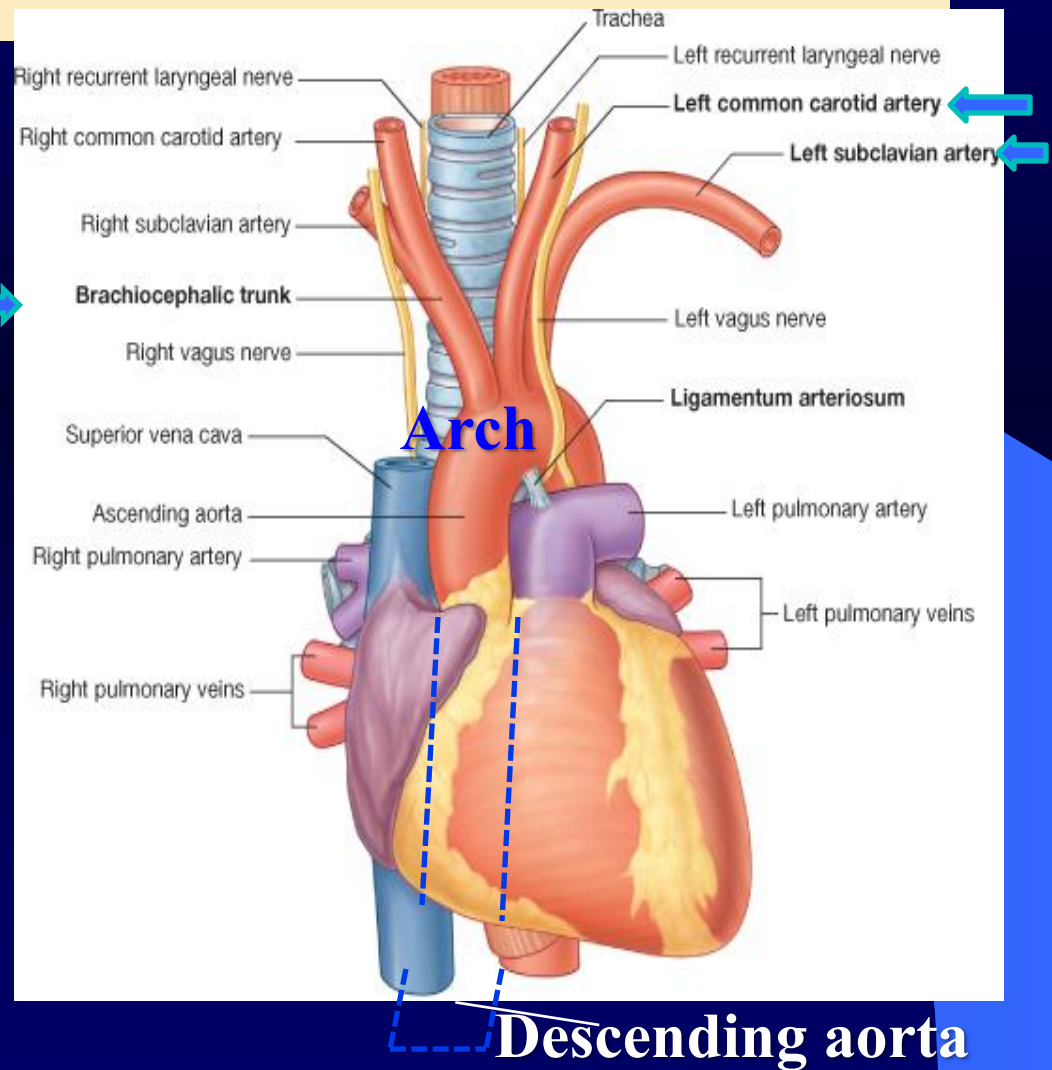
Course: in middle mediastinum

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

ARCH OF AORTA:

Course: in superior mediastinum

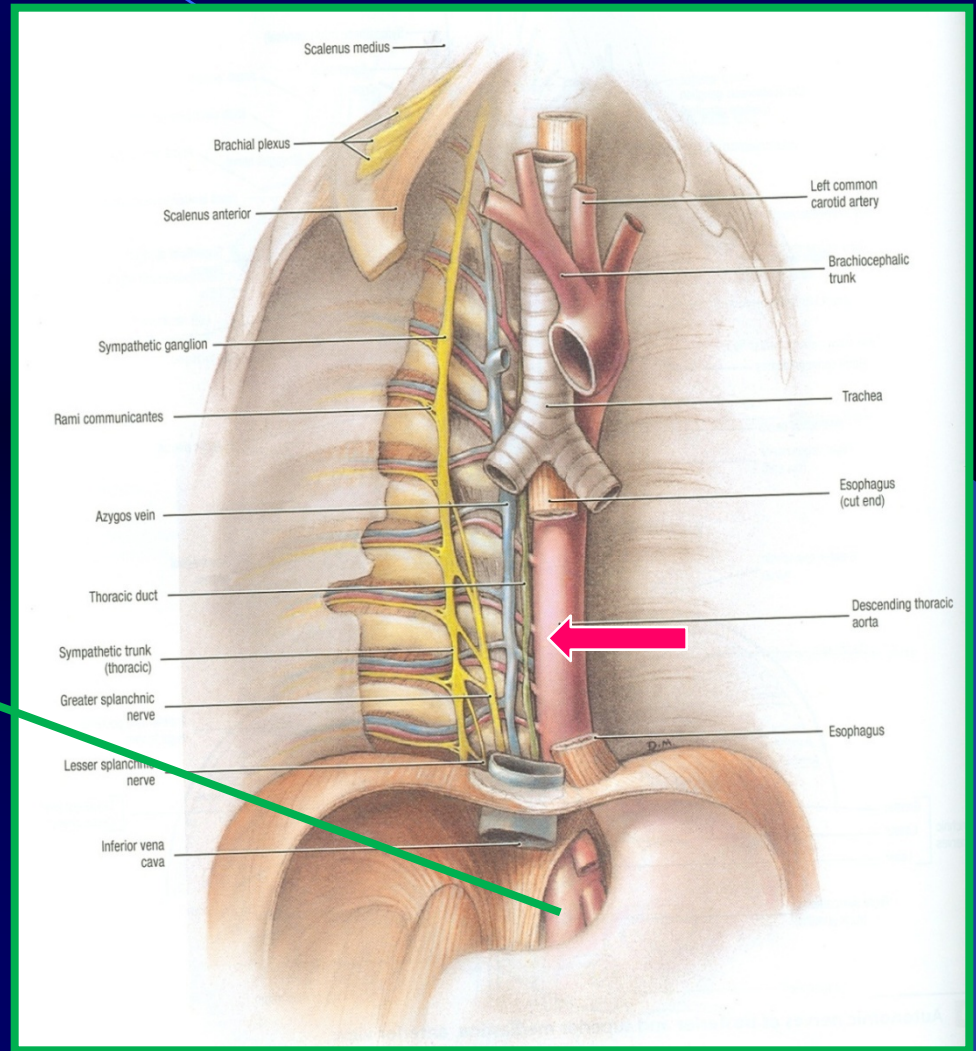
End: continues as descending thoracic aorta (at level of T4)



- **DESCENDING AORTA:**

- **Course:** in posterior mediastinum

- **End:** continues as abdominal aorta after it passes through diaphragm



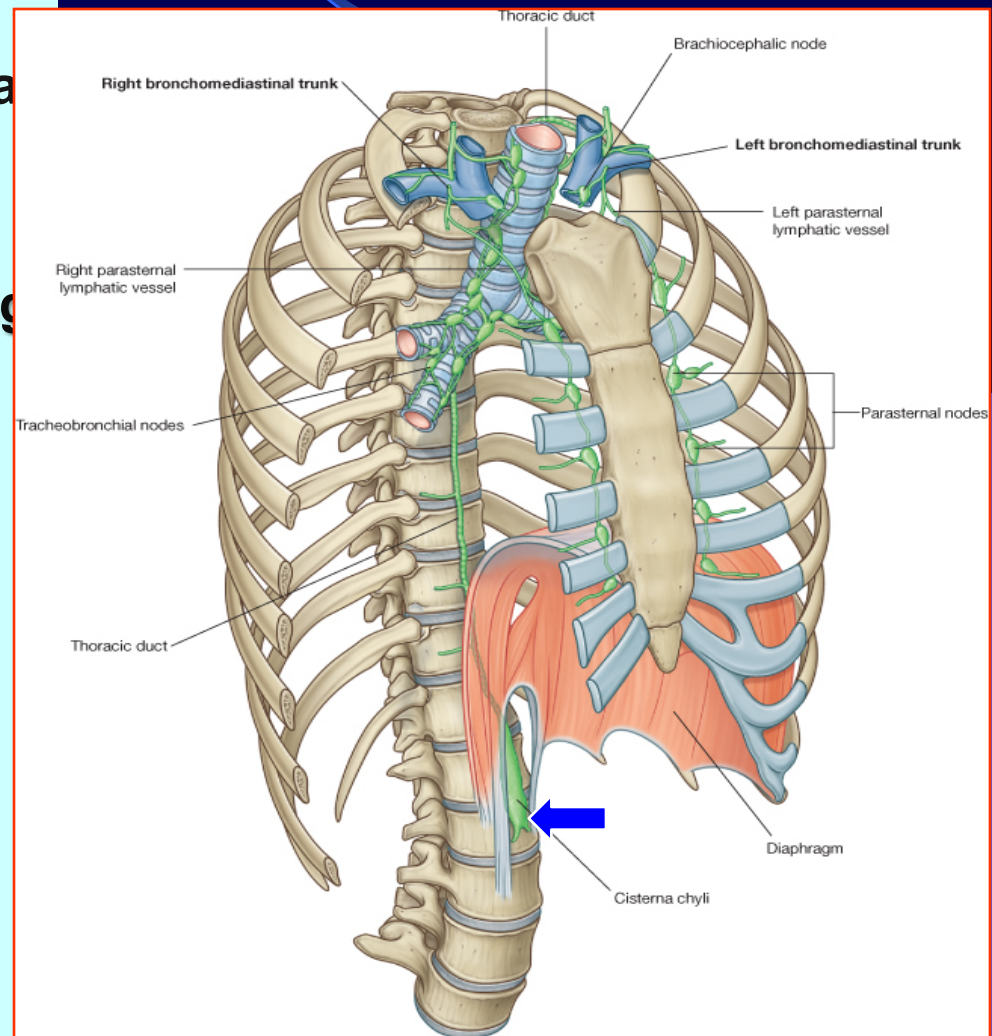
THORACIC DUCT

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:

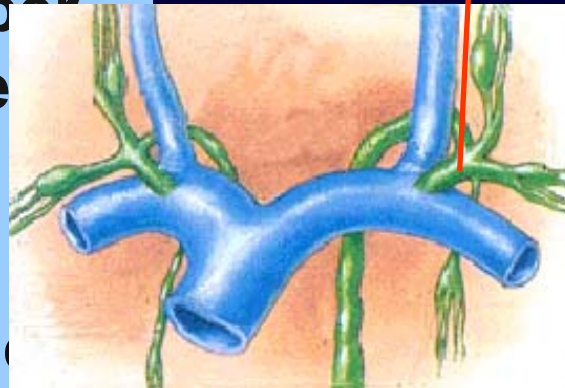
□ Lymphatics from all body

□ EXCEPT:

□ Right side of thorax, Right upper limb & Right side of head & neck.

END:

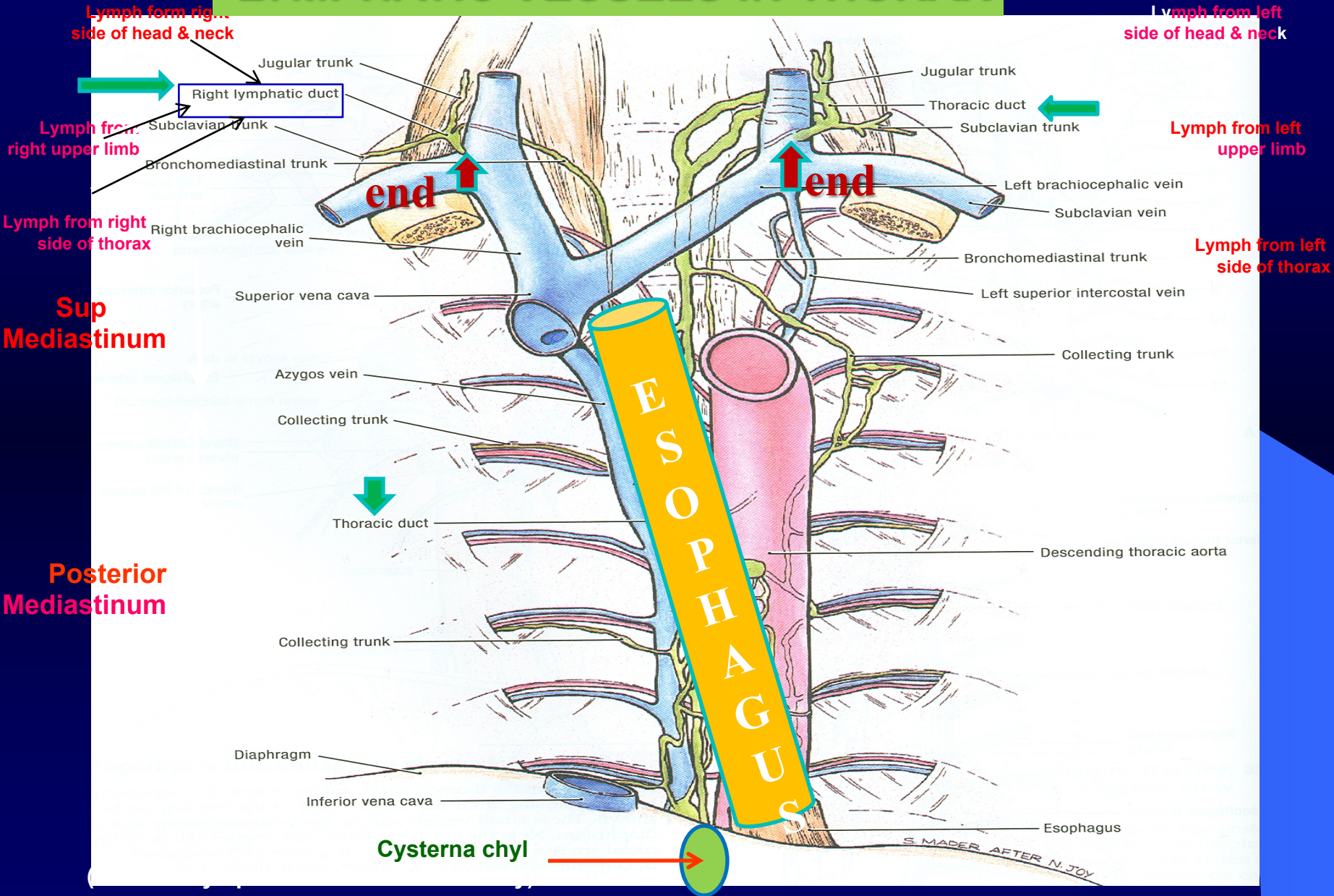
□ It opens in the left internal jugular vein.
brachiocephalic vein.



Th
D



LYMPHATIC VESSELS IN THORAX



Thank You