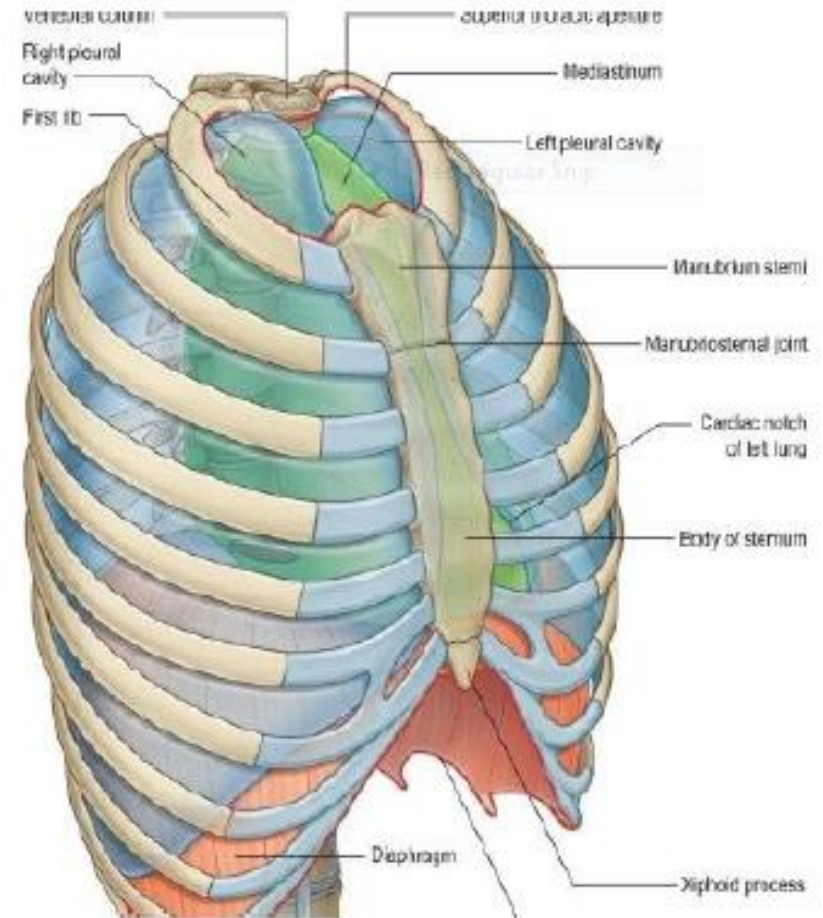


# MEDIASTINUM

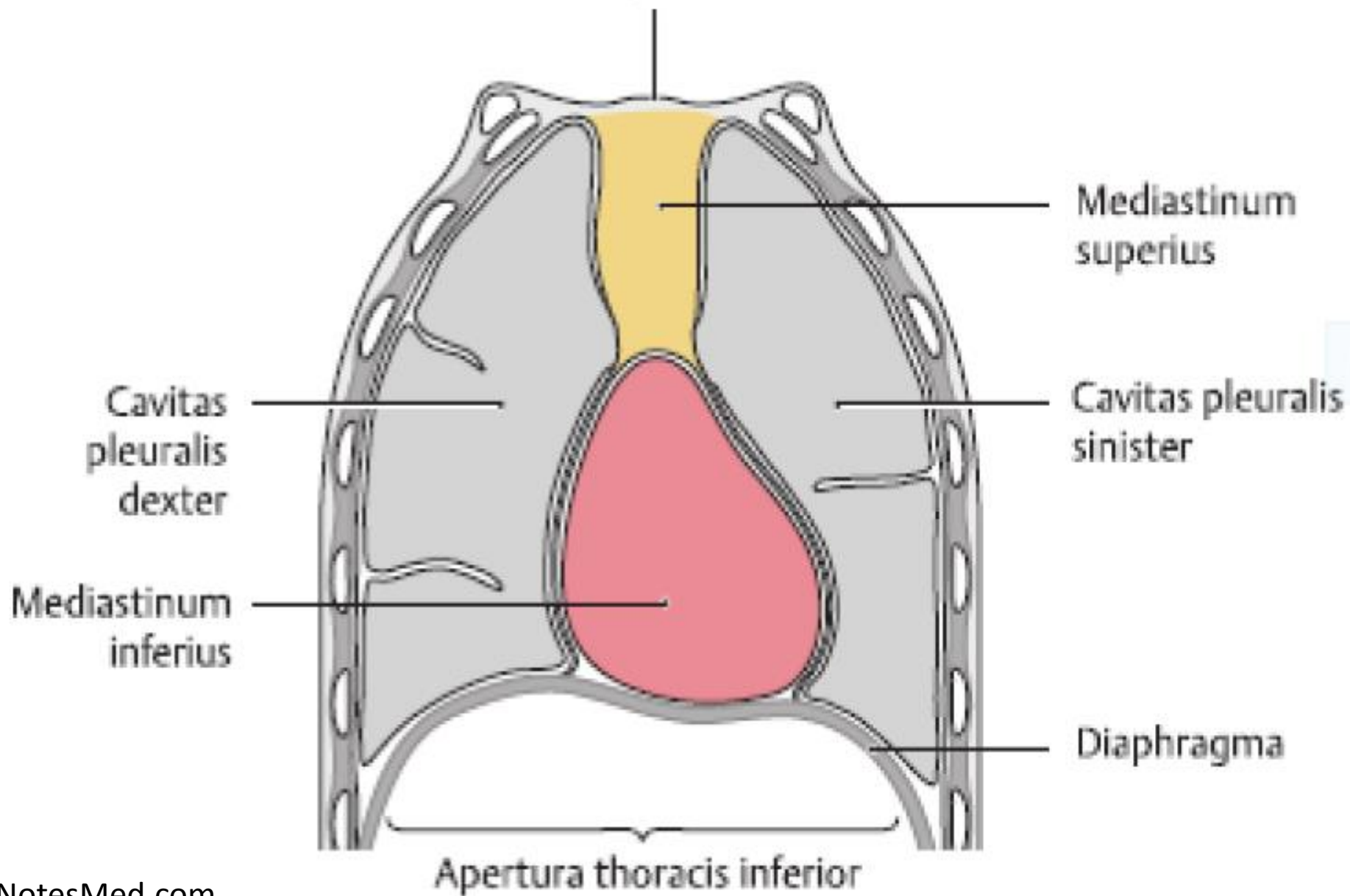
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# Mediastinum

- Middle space in the thoracic cavity in between the two pleural sacs .
- The region between the two pleural sacs bounded anteriorly by the sternum, posteriorly by the thoracic vertebrae , superiorly by thoracic inlet and inferiorly by the diaphragm.
- **SUBDIVISIONS**
  - Superior and
  - Inferior



Apertura thoracis superior



Mediastinum superior

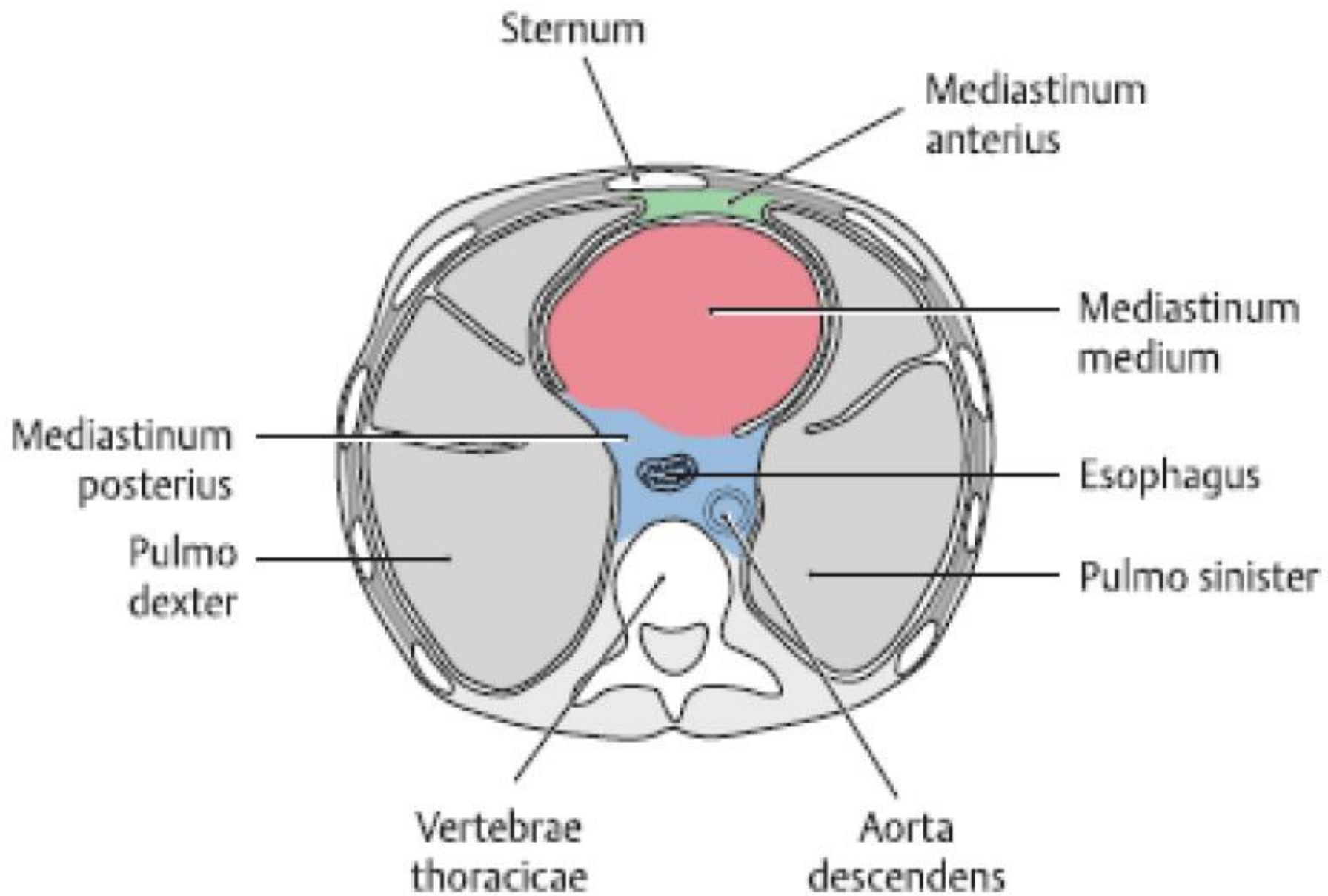
Cavitas pleuralis sinister

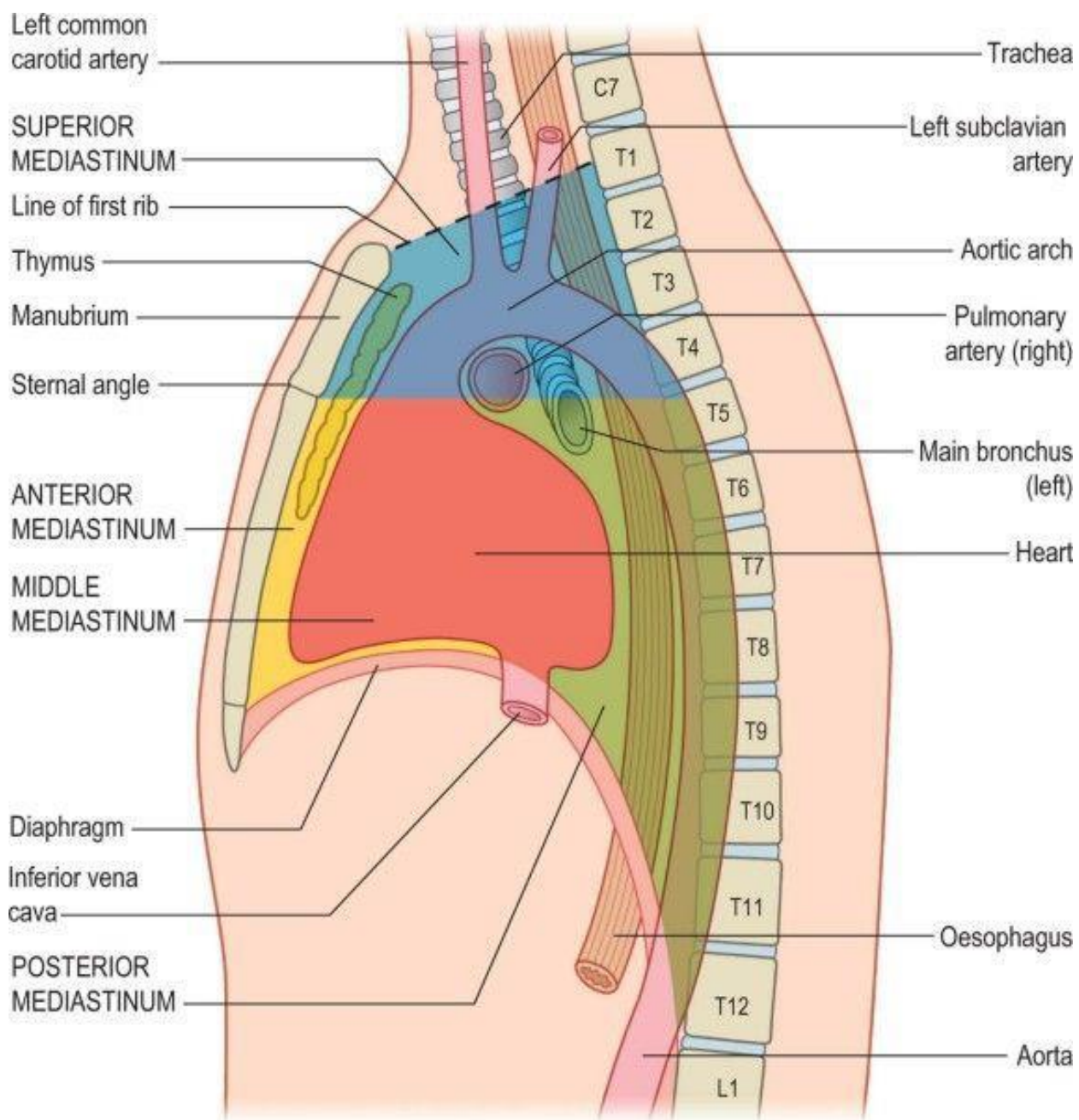
Diaphragma

Cavitas pleuralis dexter

Mediastinum inferius

Apertura thoracis inferior

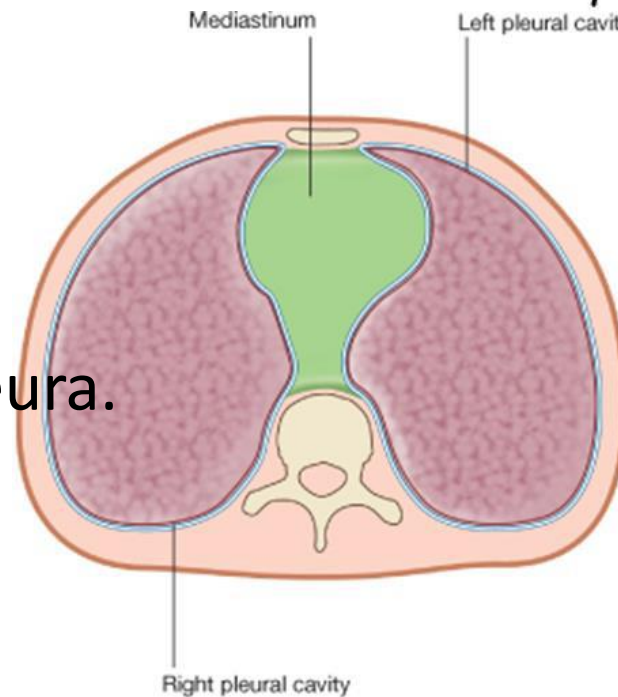
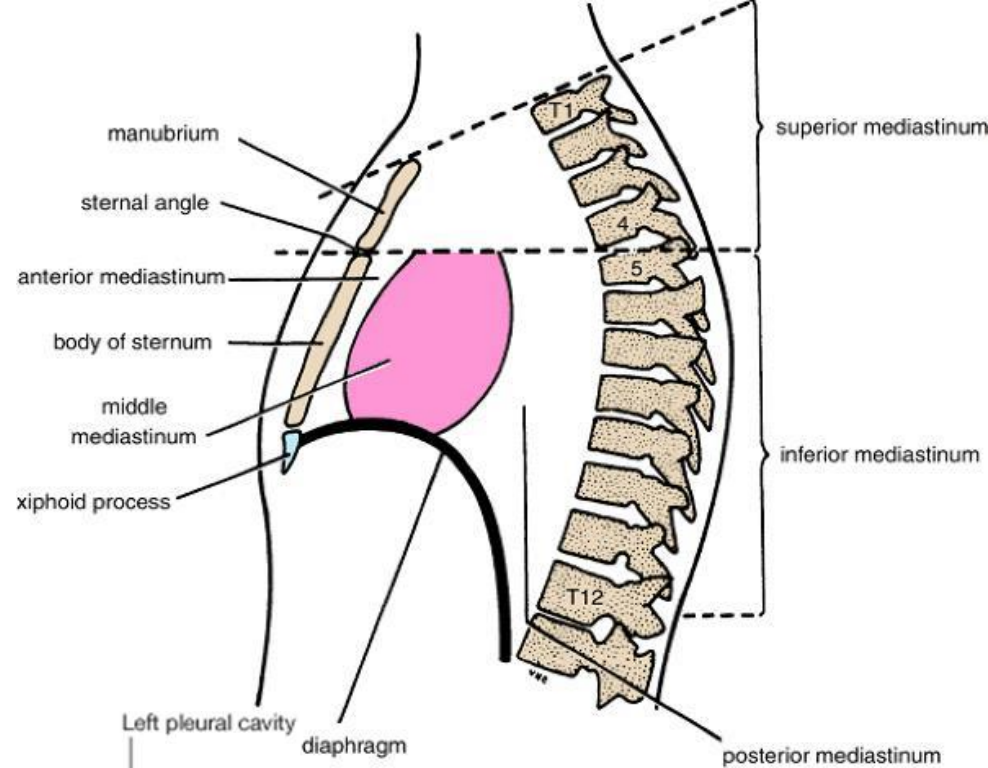






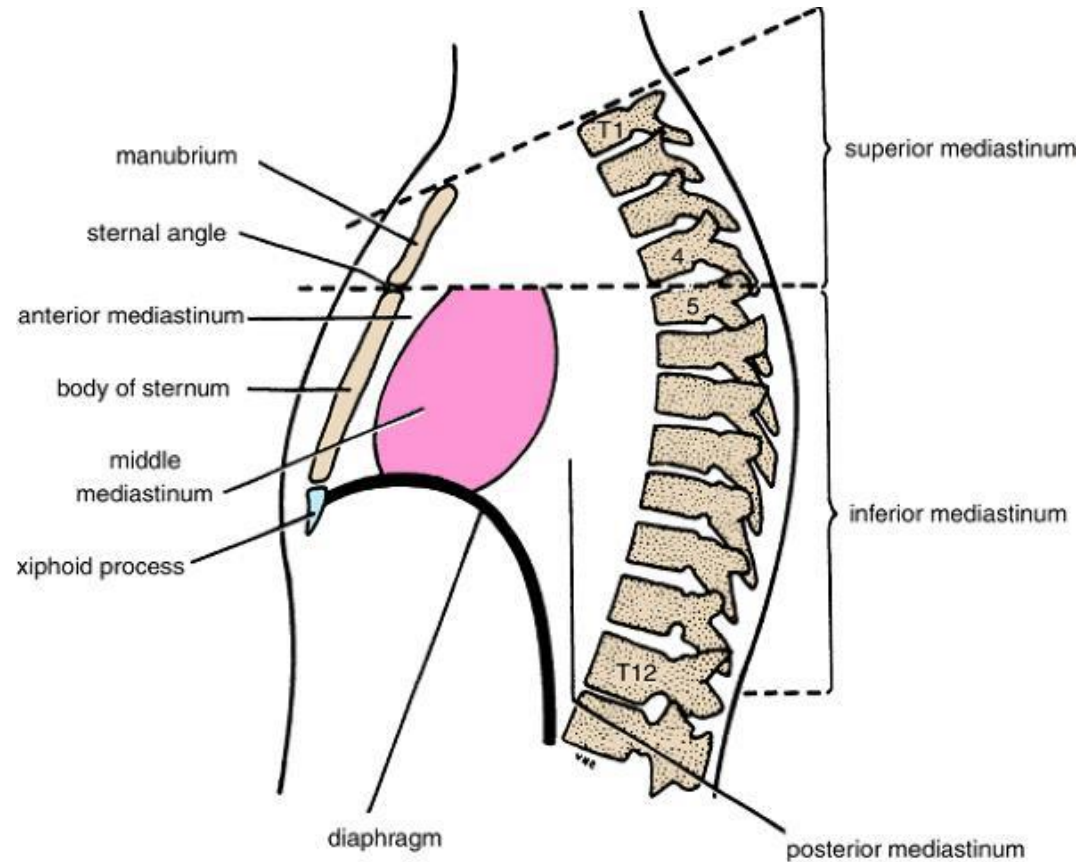
# Boundaries

- Anteriorly: sternum
- Posteriorly: vertebral column (12 thoracic vertebrae)
- Superiorly: thoracic inlet
- Inferiorly: diaphragm
- On each side: mediastinal pleura.



# Division

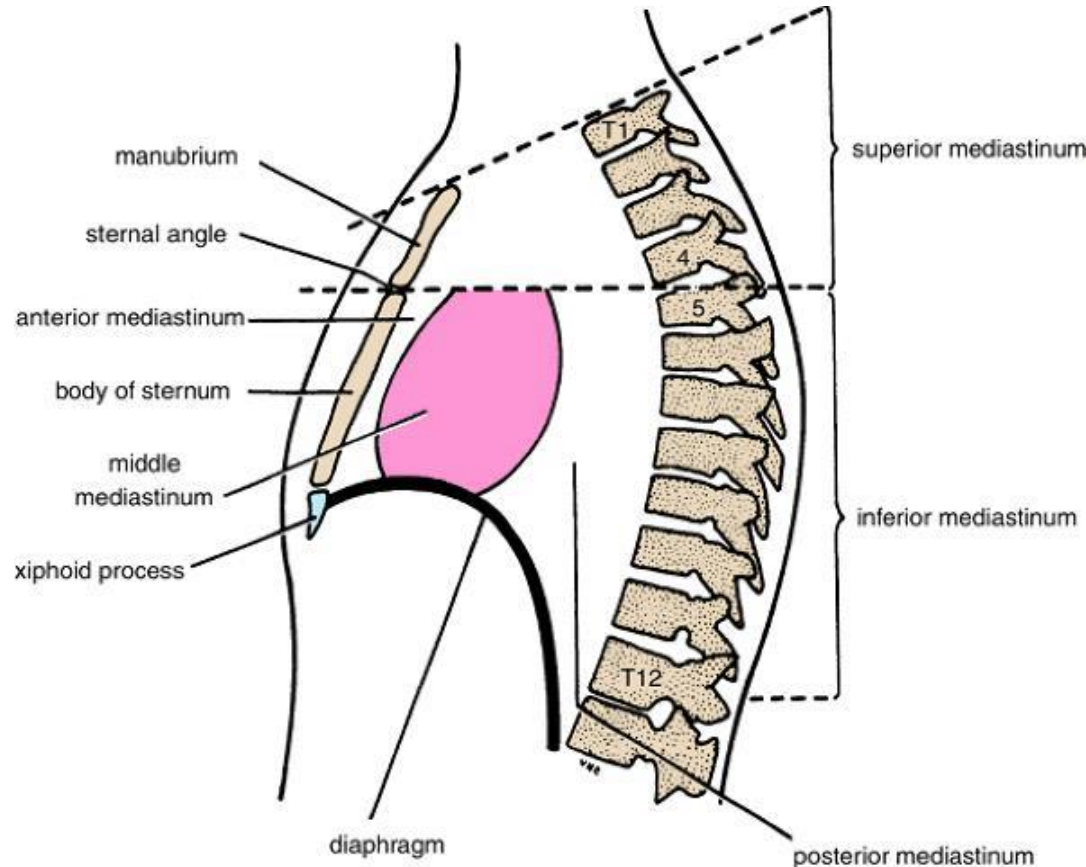
- Trans-thoracic plane: An imaginary plane passing from the sternal angle anteriorly to lower boarder of body of the T4 vertebra divides the mediastinum into
  - **Superior mediastinum.**
  - **Inferior mediastinum.**



# Superior mediastinum

- **Boundaries**

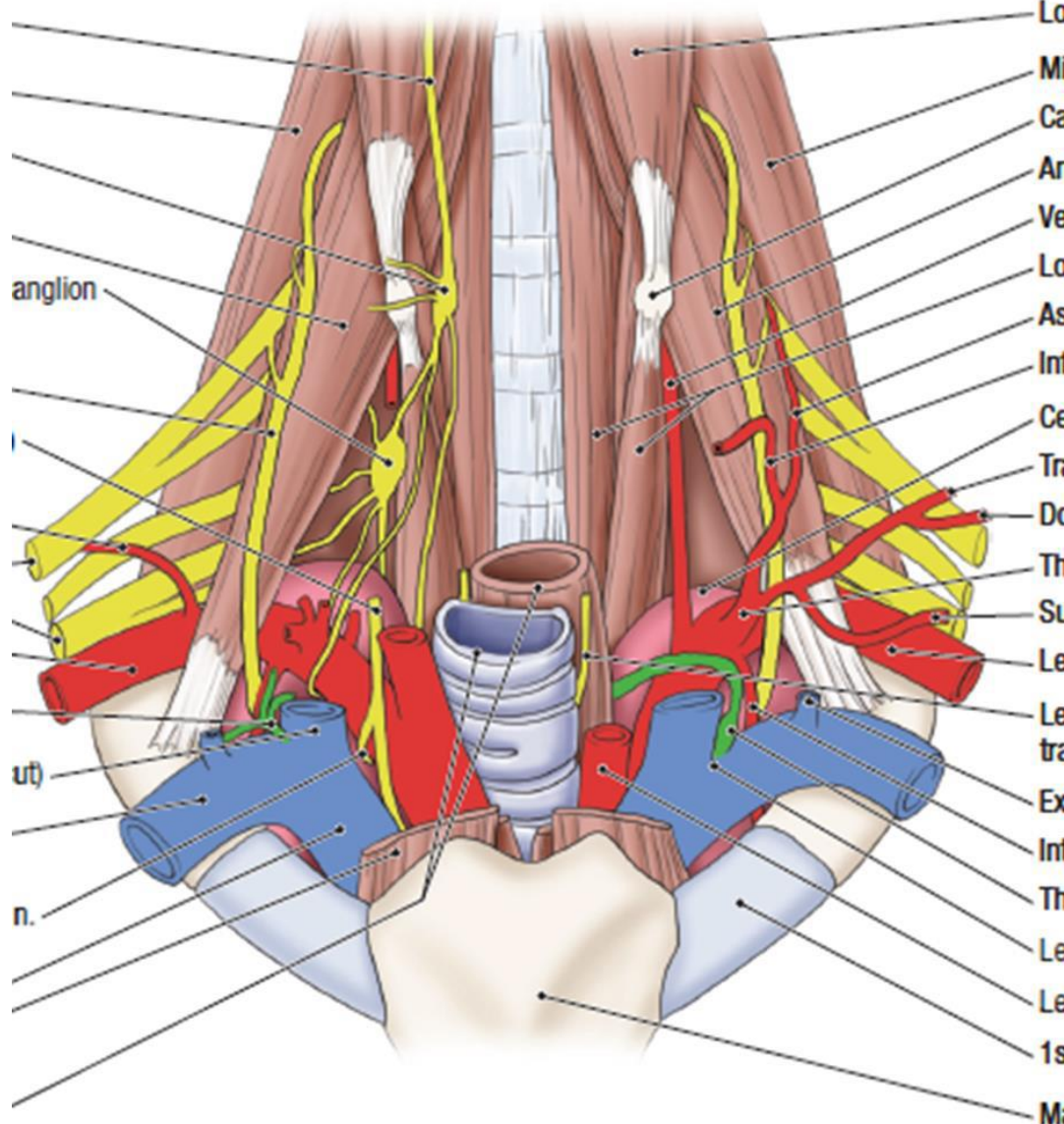
- Infront : Manubrium Sterni.
- Behind: upper 4 thoracic vertebrae with intervertebral discs.
- Above : thoracic inlet
- Below : Trans-thoracic plane passing through the sternal angle to the lower border of the 4<sup>th</sup> thoracic vertebra.
- On each side:





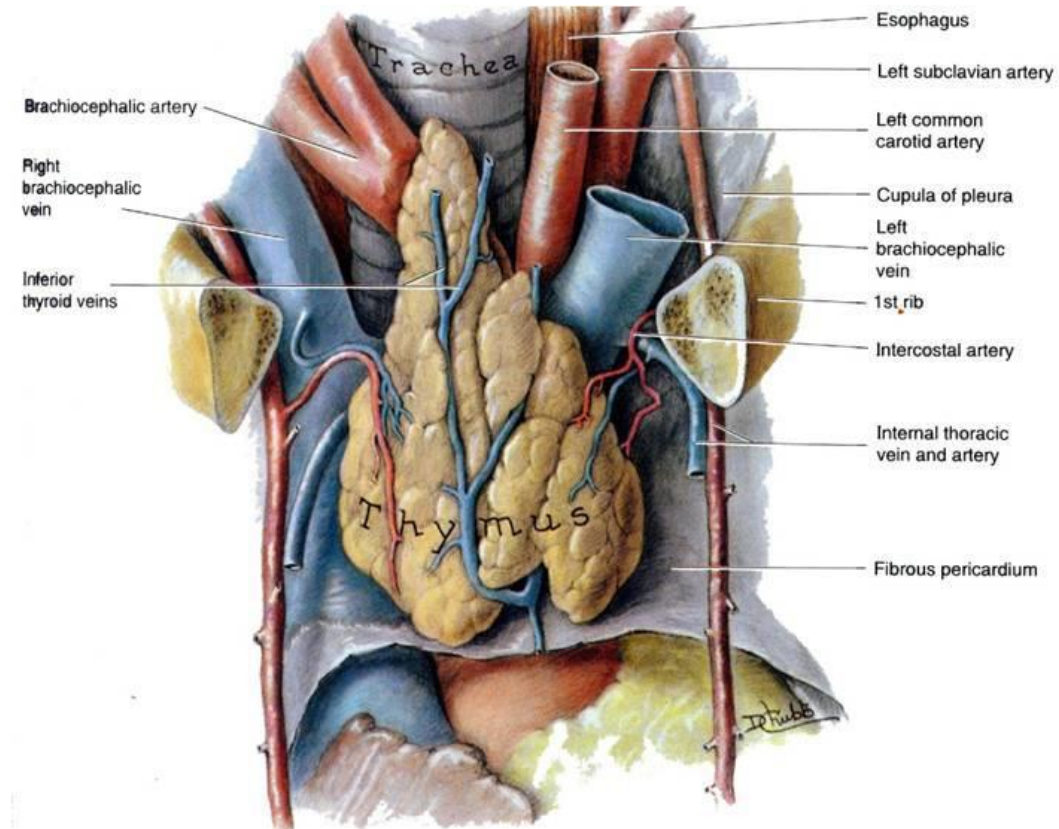
# Contents

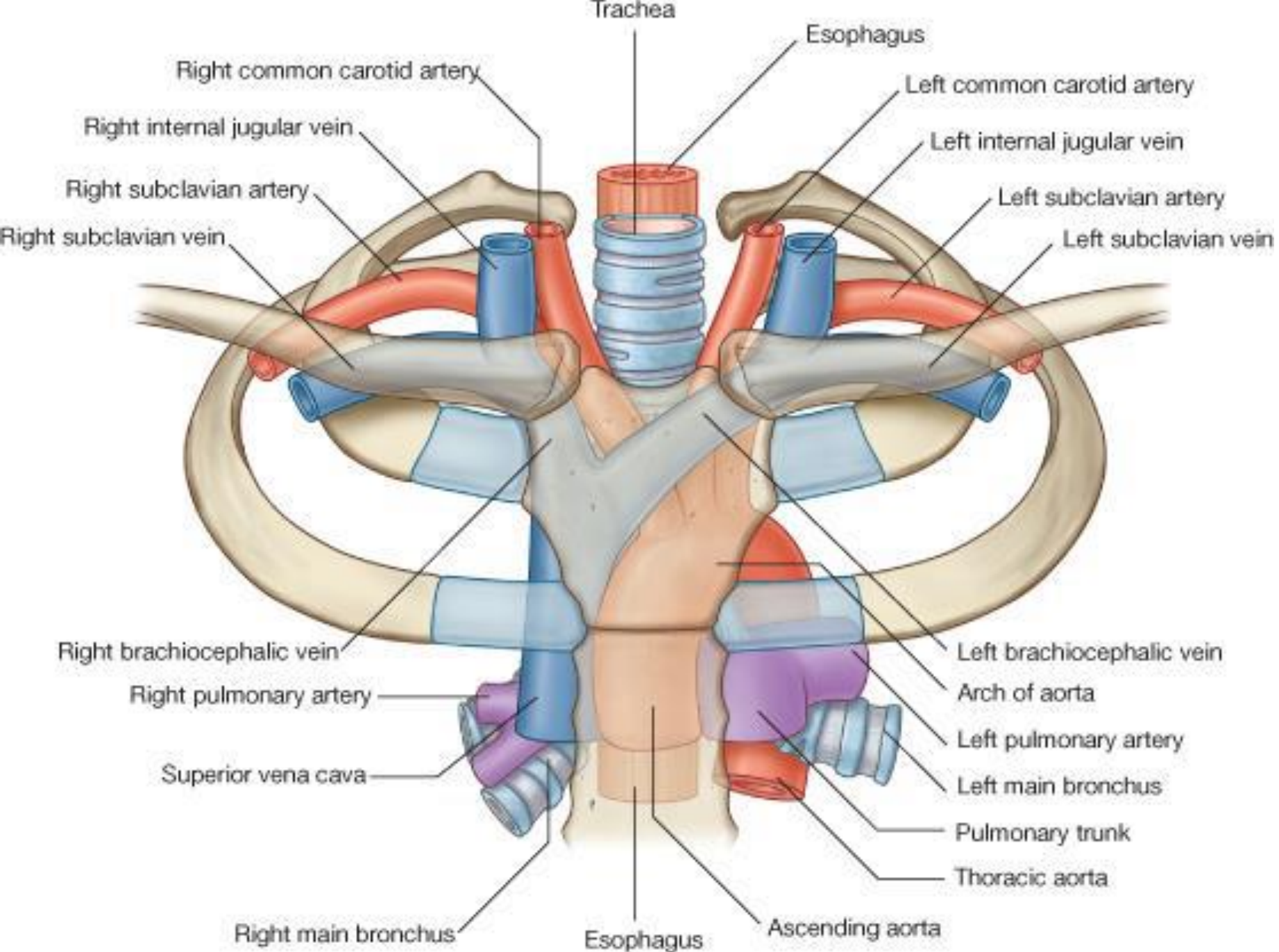
- Muscles: sternohyoid, sternothyroid and longus colli
- Thymus gland
- Veins: right and left brachiocephalic vein, superior vena cava and left superior intercostal vein.
- Arteries: Arch of aorta brachiocephalic artery, left common carotid and left subclavian.
- Nerve: Vagus, Phrenic, left recurrent laryngeal nerve.
- Trachea and esophagus
- Thoracic duct



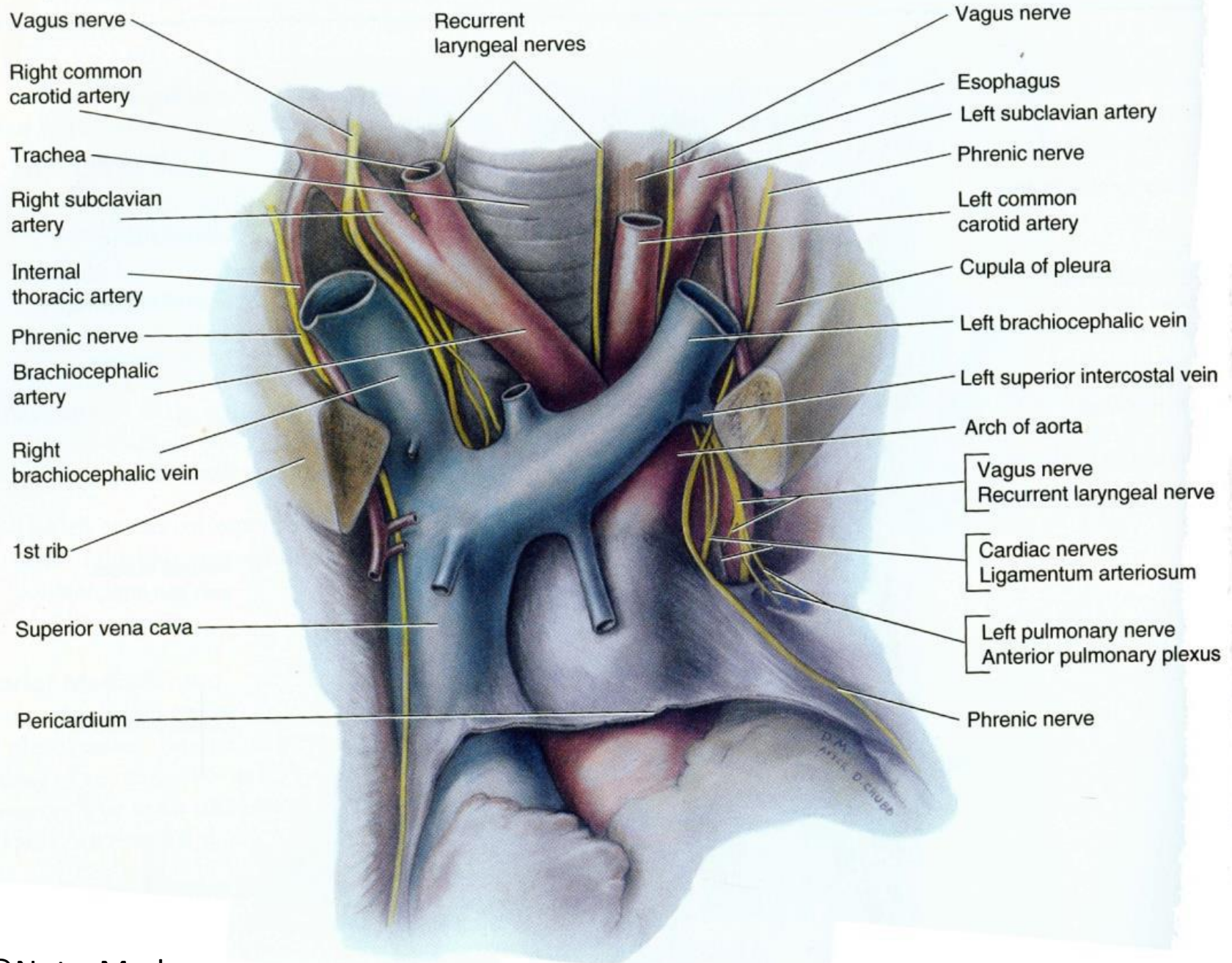
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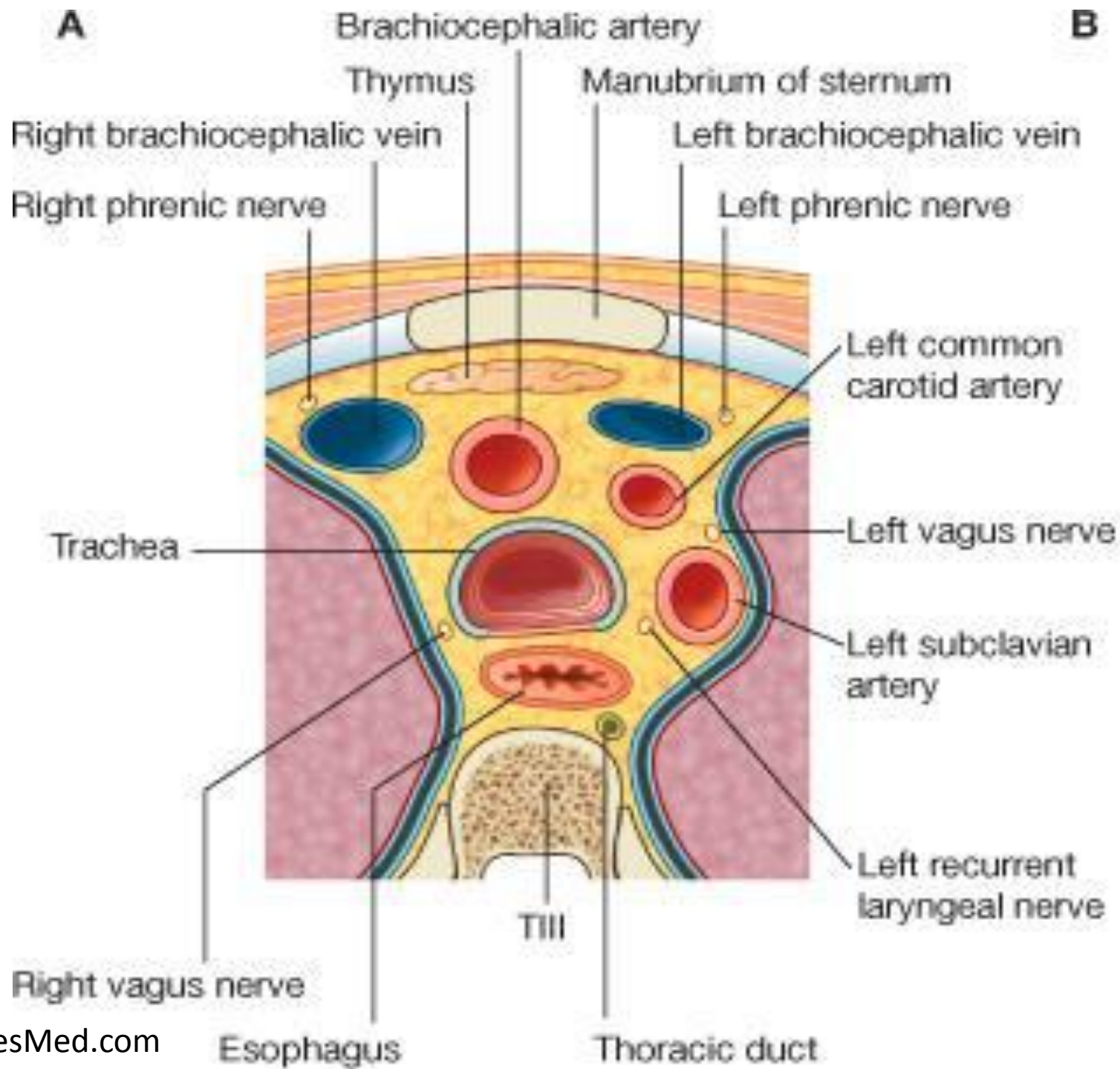
- Different group of lymph nodes; paratracheal, brachiocephalic and tracheobronchial lymph nodes .







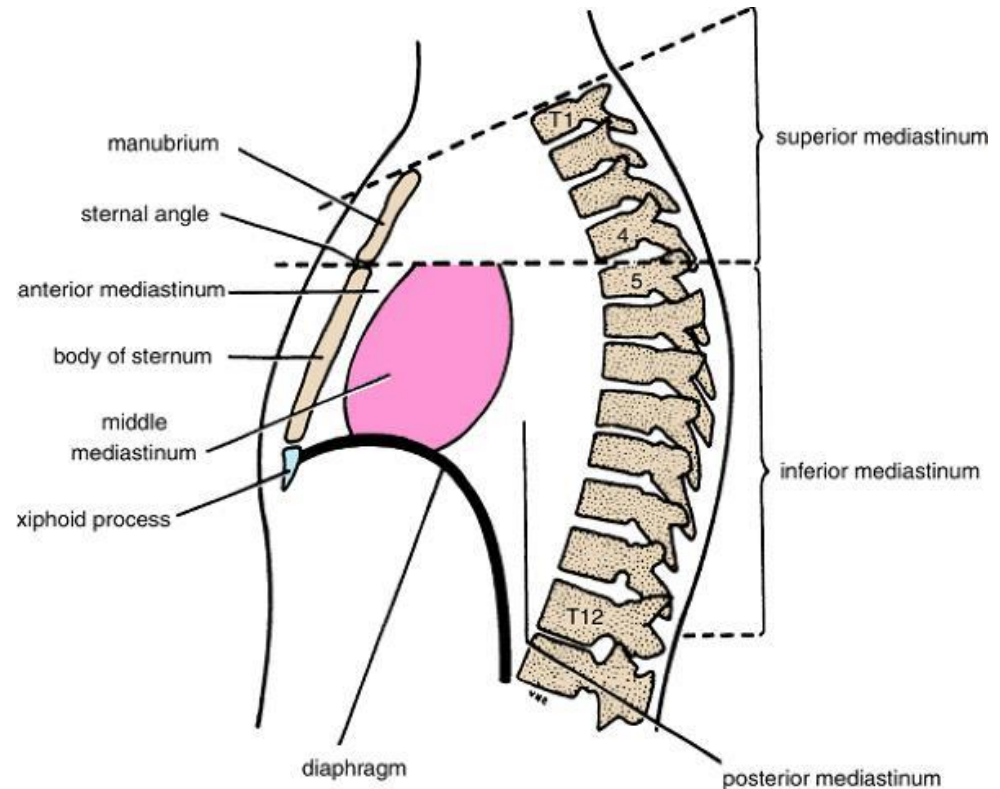


**A****B**



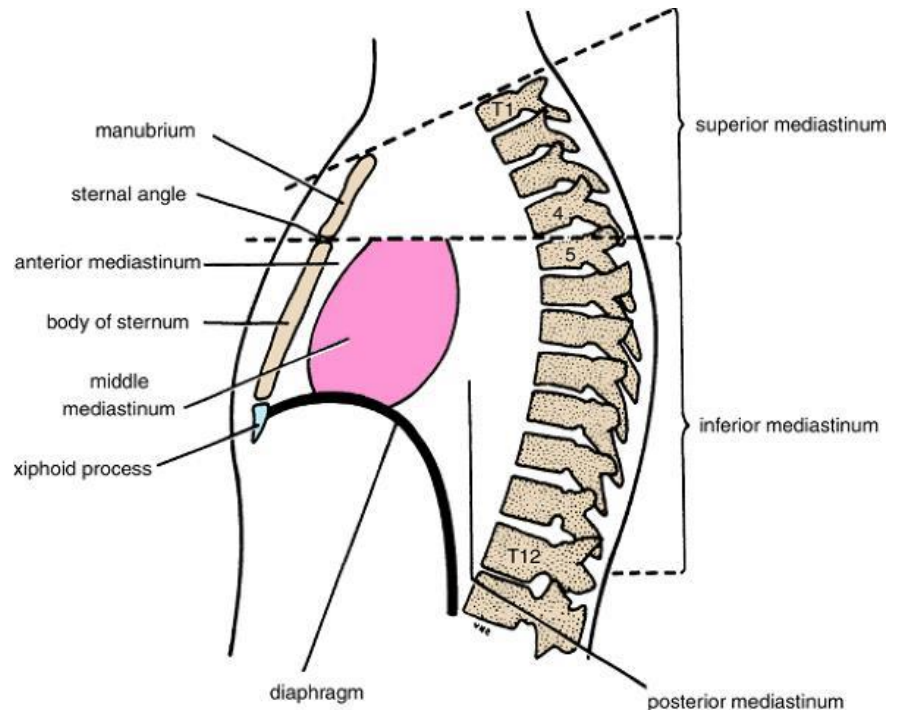
# Inferior Mediastinum

- Pericardium further divides the inferior mediastinum into
  - Anterior mediastinum: in front of pericardium.
  - Posterior mediastinum: behind the pericardium.
  - Middle mediastinum: pericardium and its contents.



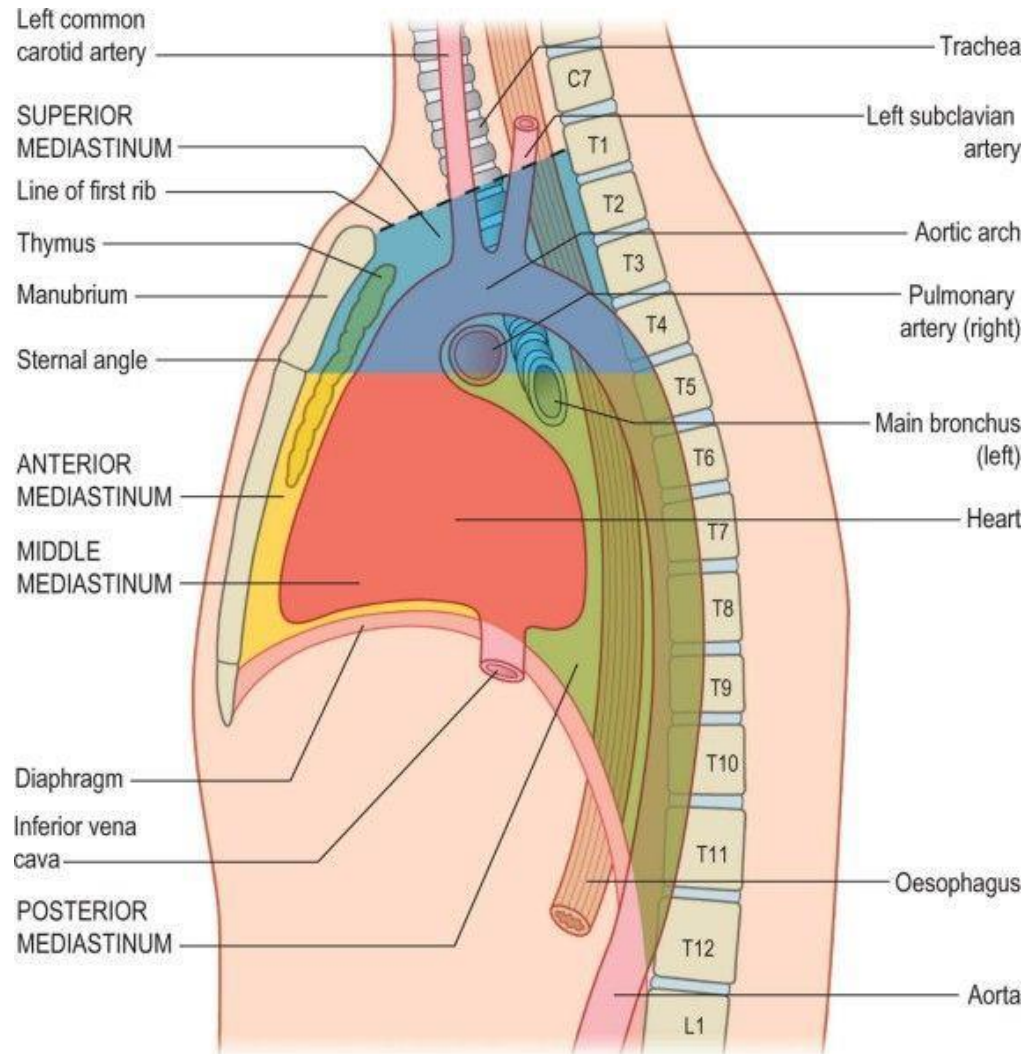
# Anterior Mediastinum

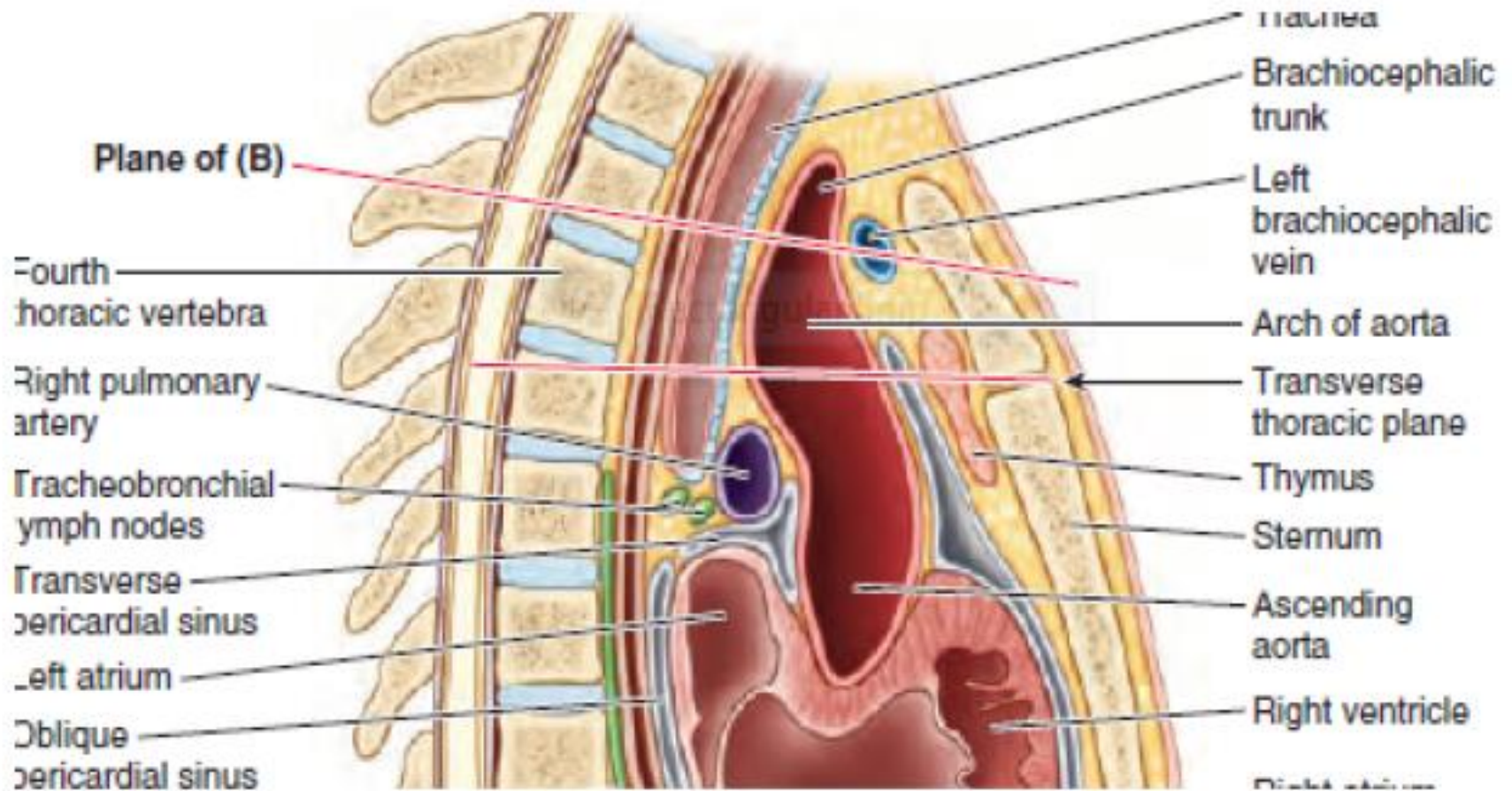
- Narrow space , overlapped by anterior border of both lungs.
- Boundaries
  - Anteriorly: body of sternum
  - Posteriorly: pericardium
  - Superiorly: imaginary plane.
  - Inferiorly: superior surface of diaphragm.
  - On each side: mediastinal pleura.



# Contents

- Sternopericardial ligaments
- Lymph nodes with lymphatics
- Small mediastinal branches of internal thoracic artery
- The lowest part of thymus
- Areolar tissue

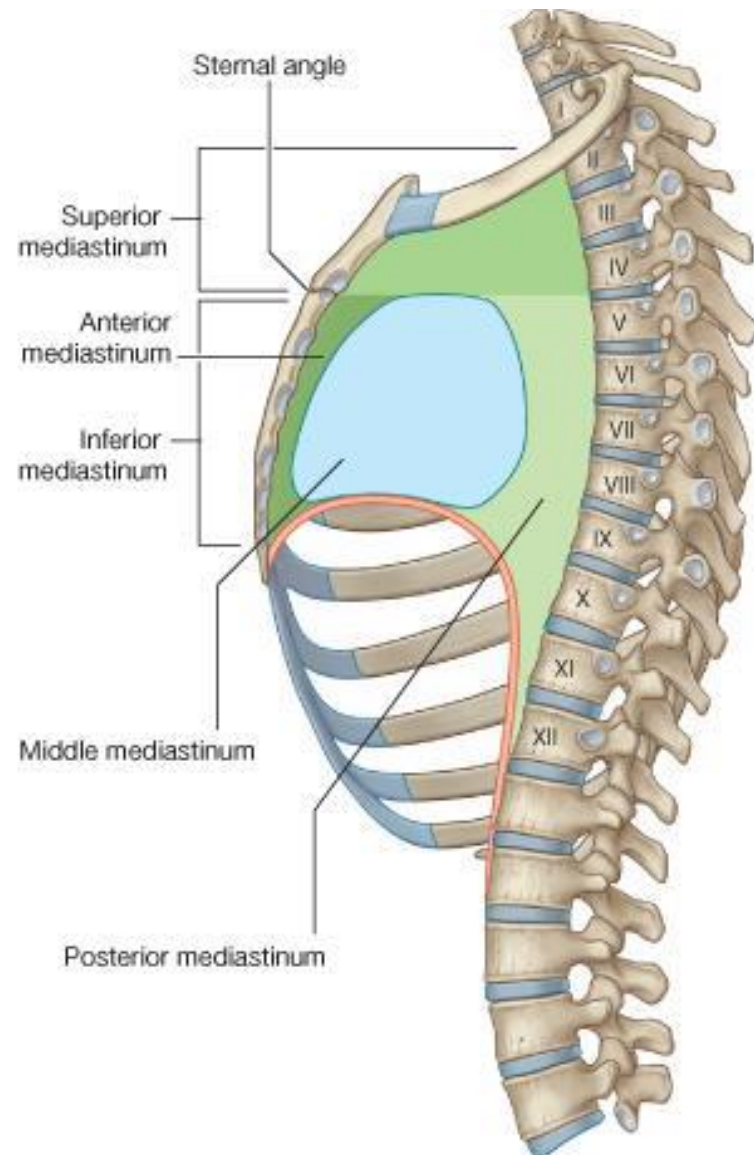






# Middle Mediastinum

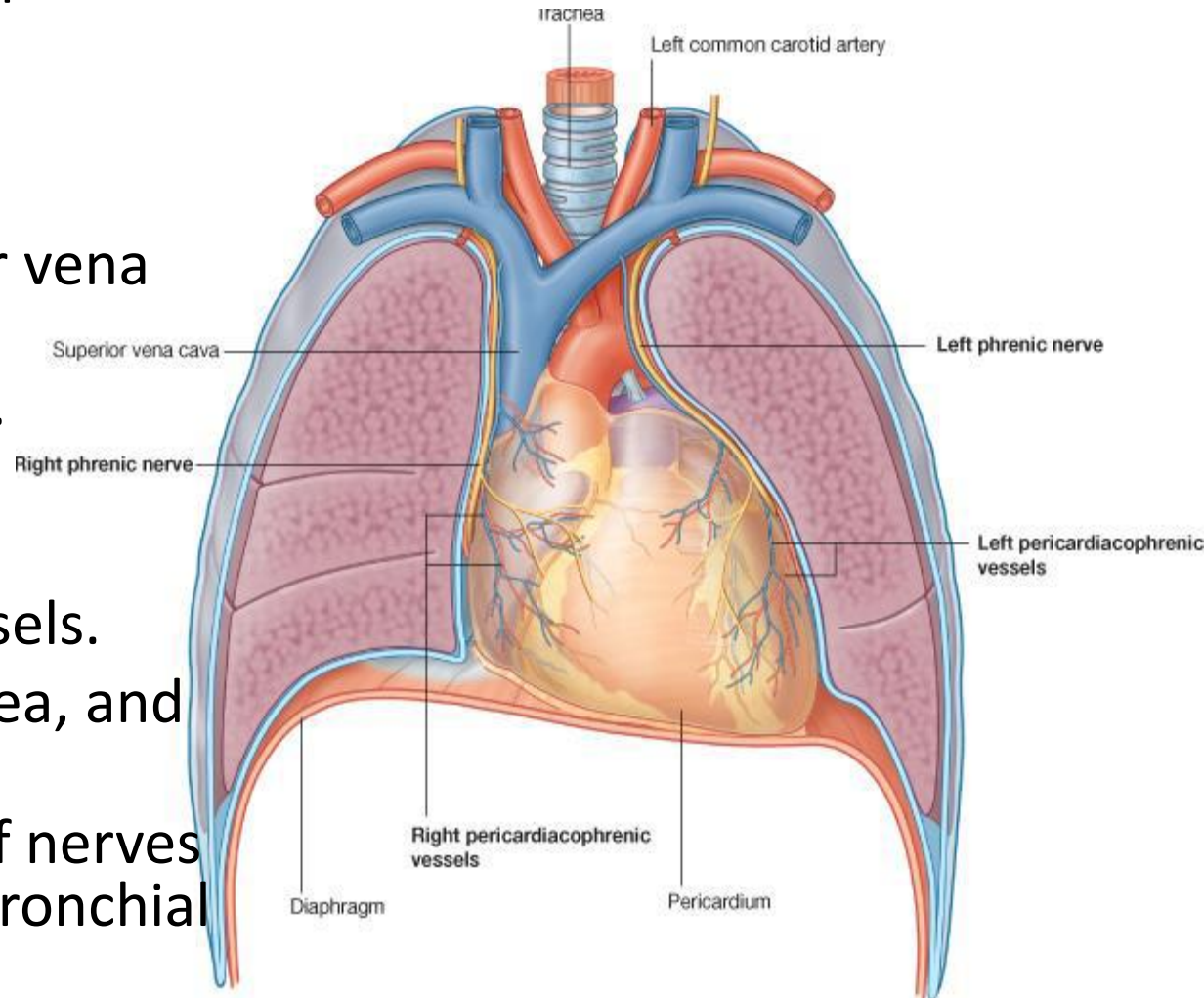
- Widest subdivision.
- Occupied by the pericardium and its contents.
- Limited on each side by mediastinal pleura.

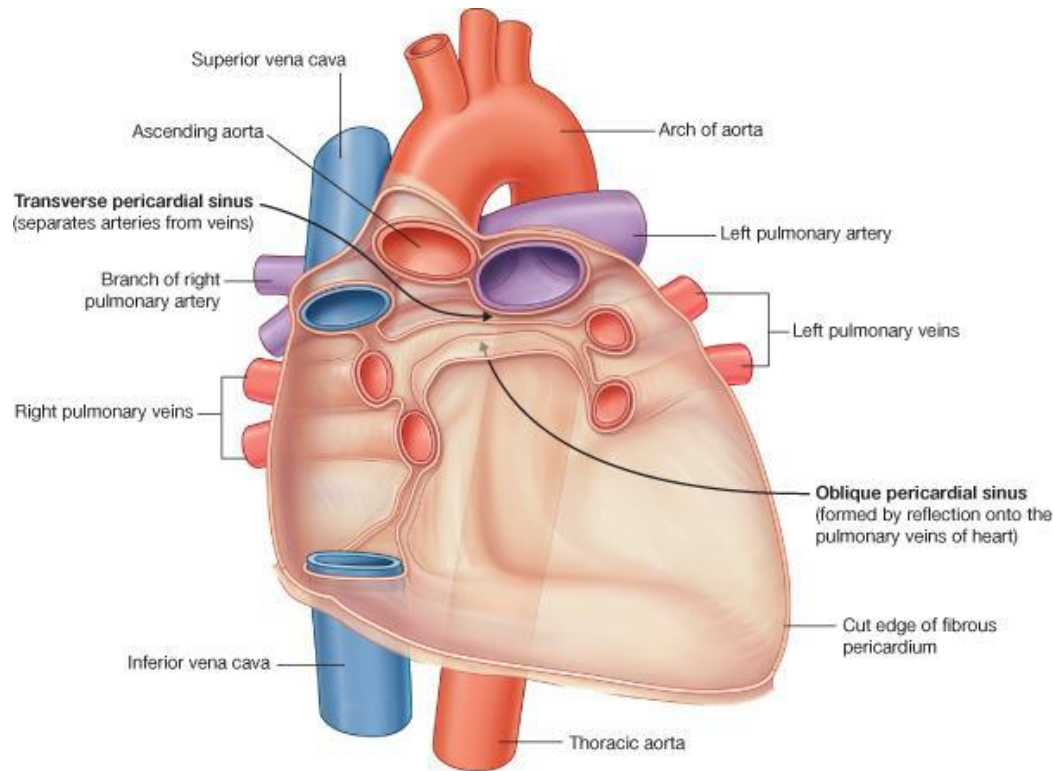
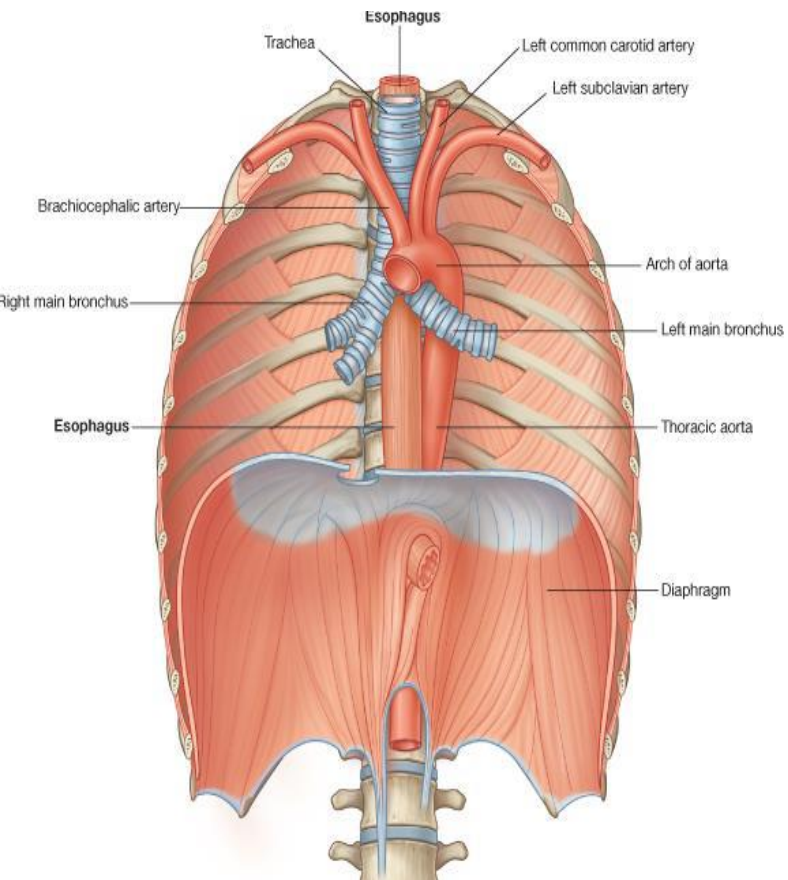




# Contents

- Heart and pericardium
- Ascending aorta and pulmonary trunk and pulmonary arteries.
- Lower part of superior vena cava.
- Four pulmonary veins.
- Arch of azygos vein.
- Phrenic nerve and pericardiophrenic vessels.
- Terminal part of trachea, and bronchi.
- Deep cardiac plexus of nerves and inferior tracheo-bronchial lymph nodes.



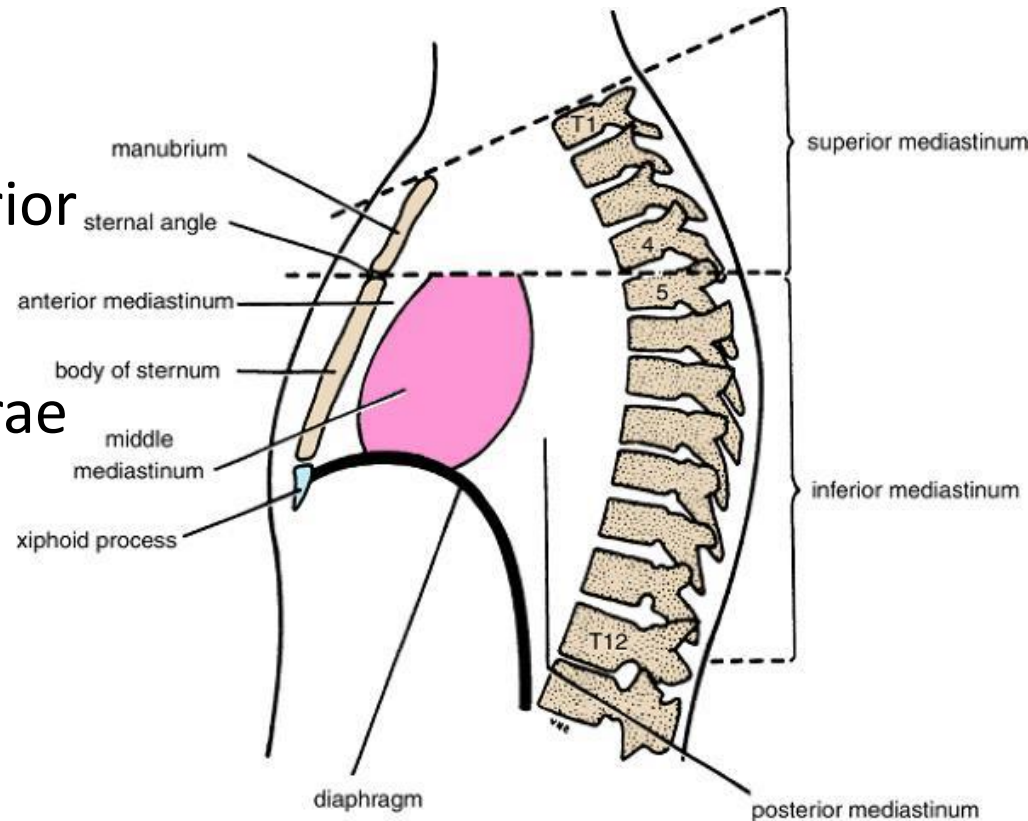


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# Posterior Mediastinum

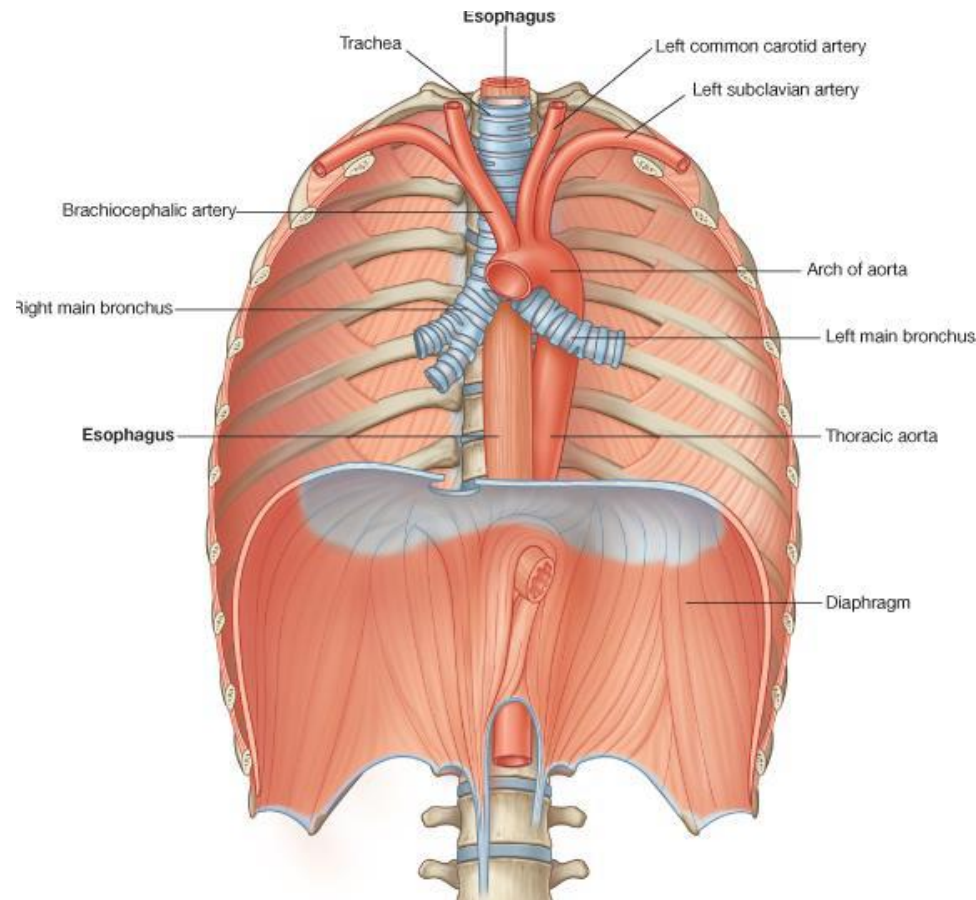
## Boundaries

- Anteriorly: pericardium, bifurcation of trachea, pulmonary vessels and posterior part of upper surface of diaphragm.
- Posteriorly: 8 thoracic vertebrae and intervertebral disc.
- On each side: mediastinal pleura.
- Above : imaginary horizontal plane
- Below : the diaphragm
- On each side : mediastinal pleura

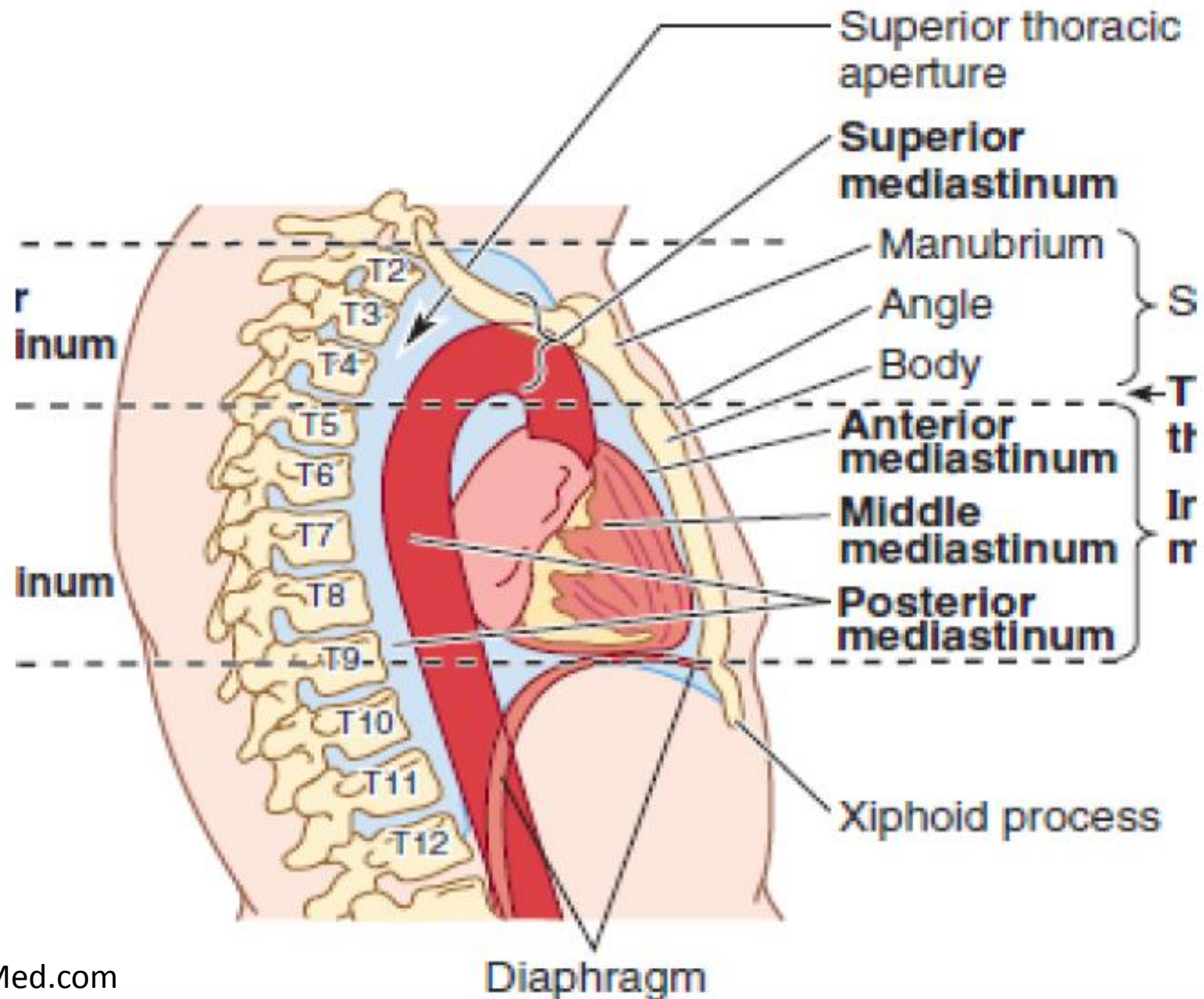


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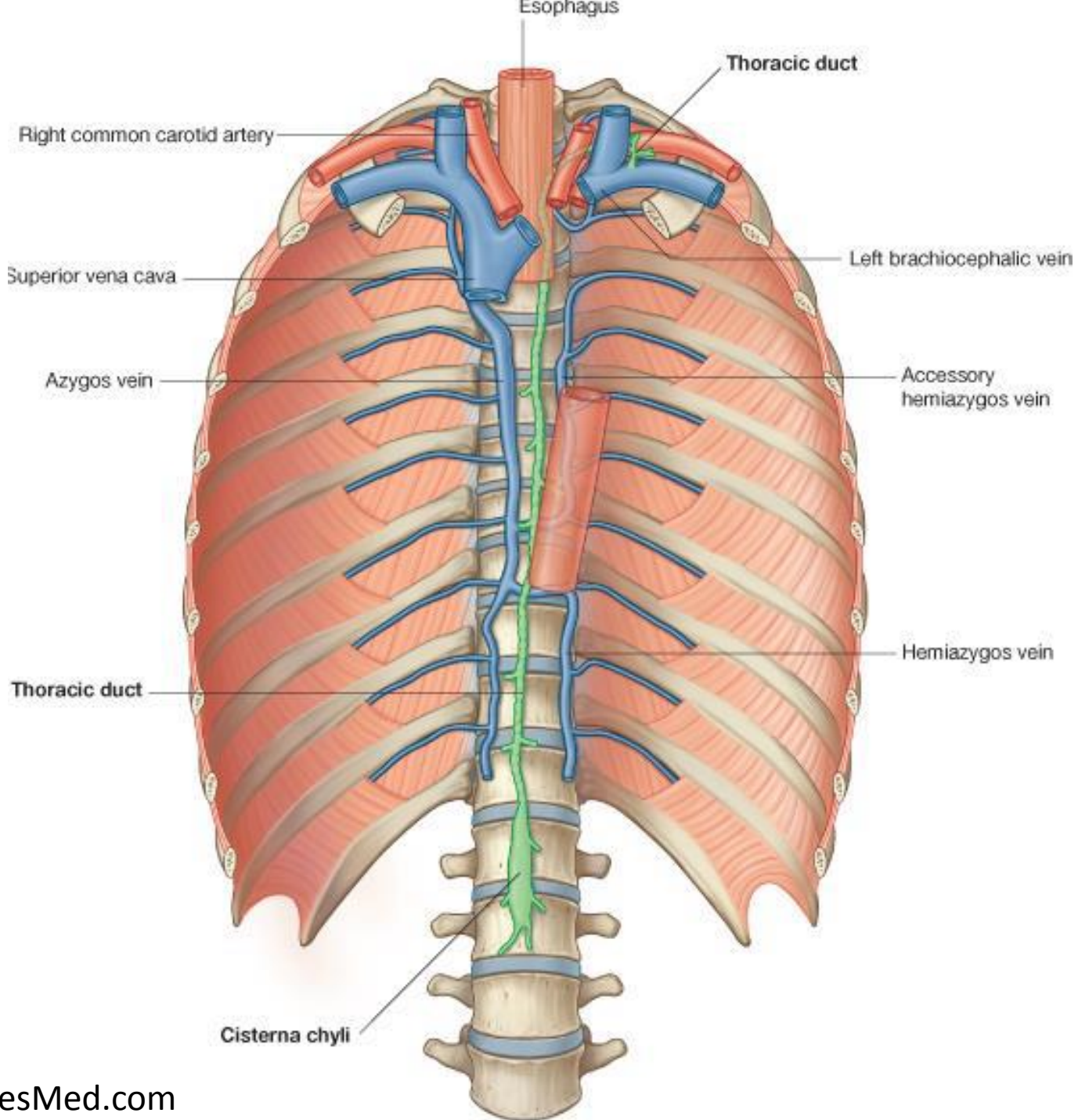
- Oesophagus
- Descending aorta
- Azygos vein and hemi azygos vein
- Thoracic duct
- Vagus nerve
- Splanchnic nerves
- Posterior mediastinal lymph nodes

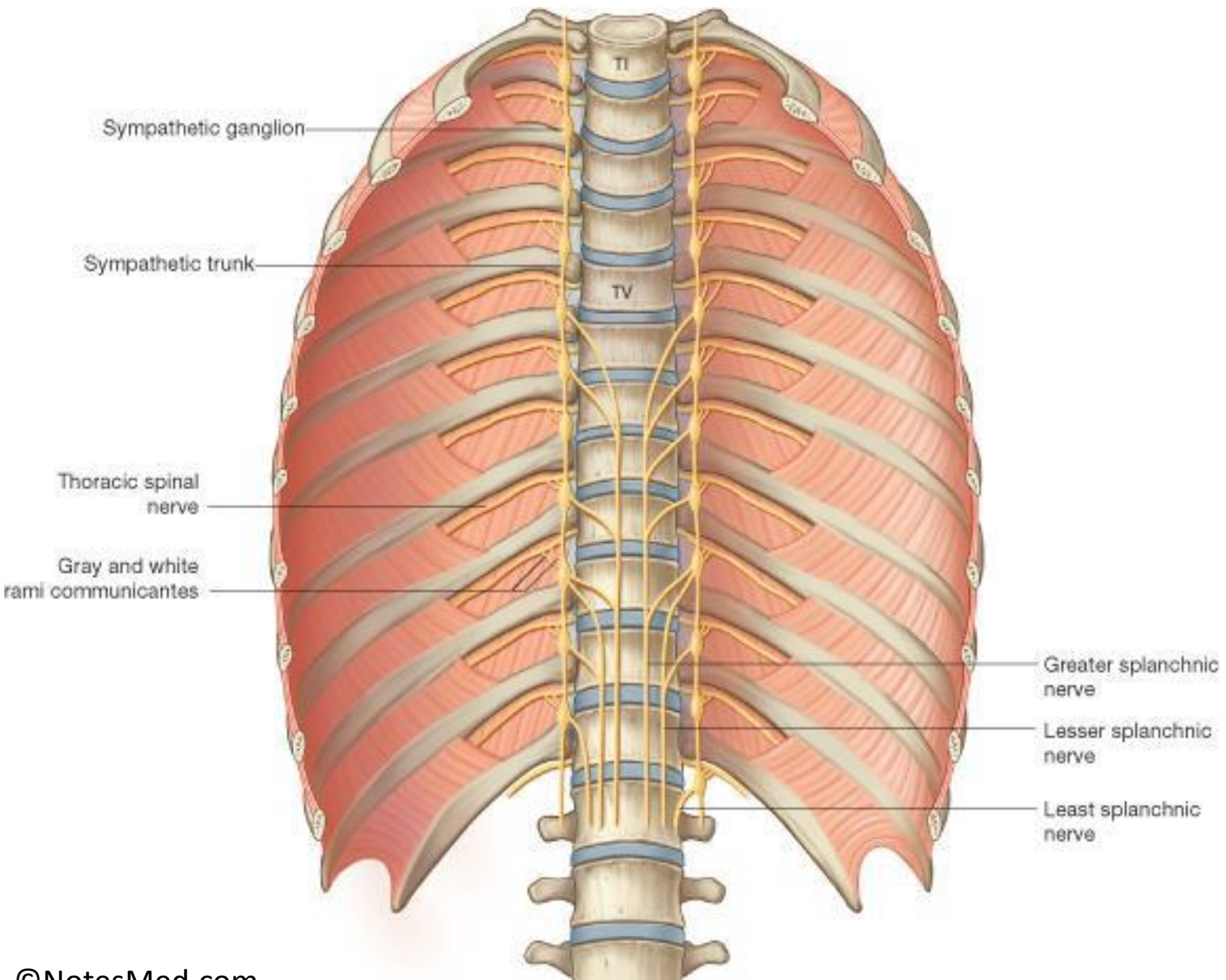












# Applied anatomy

- Deflection of mediastinum
- Mediastinitis—spread of the infection from the neck(common).
- Mediastinal tumor and the cysts.
- Mediastinoscopy.

# Applied anatomy

- The prevertebral layer of the deep cervical fascia extends to the superior mediastinum and is attached to the T4 vertebra.
- An infection present in the neck behind this fascia can pass down into the superior mediastinum but not lower down.
- In the superior mediastinum, all large veins are on the right side and the arteries on the left side.
  - During increased blood flow veins expand enormously, while the large arteries do not expand at all. Thus there is much dead space on the right side and it is into this space that tumours or fluids of the mediastinum tend to project.

# Applied anatomy

- Compression of mediastinal structures by any tumors give rise to a group of symptoms known as mediastinal syndrome
- The common syndrome are
  - Obstruction of the SVC gives rise to engorgement of veins in the upper half of the body.
  - Pressure over the trachea causes dyspnea.
  - Pressure on the oesophagus causes dysphagia.
  - Pressure on the left recurrent laryngeal nerve gives rise to hoarseness of voice.
  - Pressure on the phrenic nerve causes paralysis of the diaphragm on that side.
  - Pressure on the intercostal nerve give rise to pain in the area supplied by them. It is called intercostal neuralgia.
  - Pressure on the vertebral column may cause erosion of the vertebral bodies.



- The end