TRACHEA , BRONCHI & PLEURA

BY

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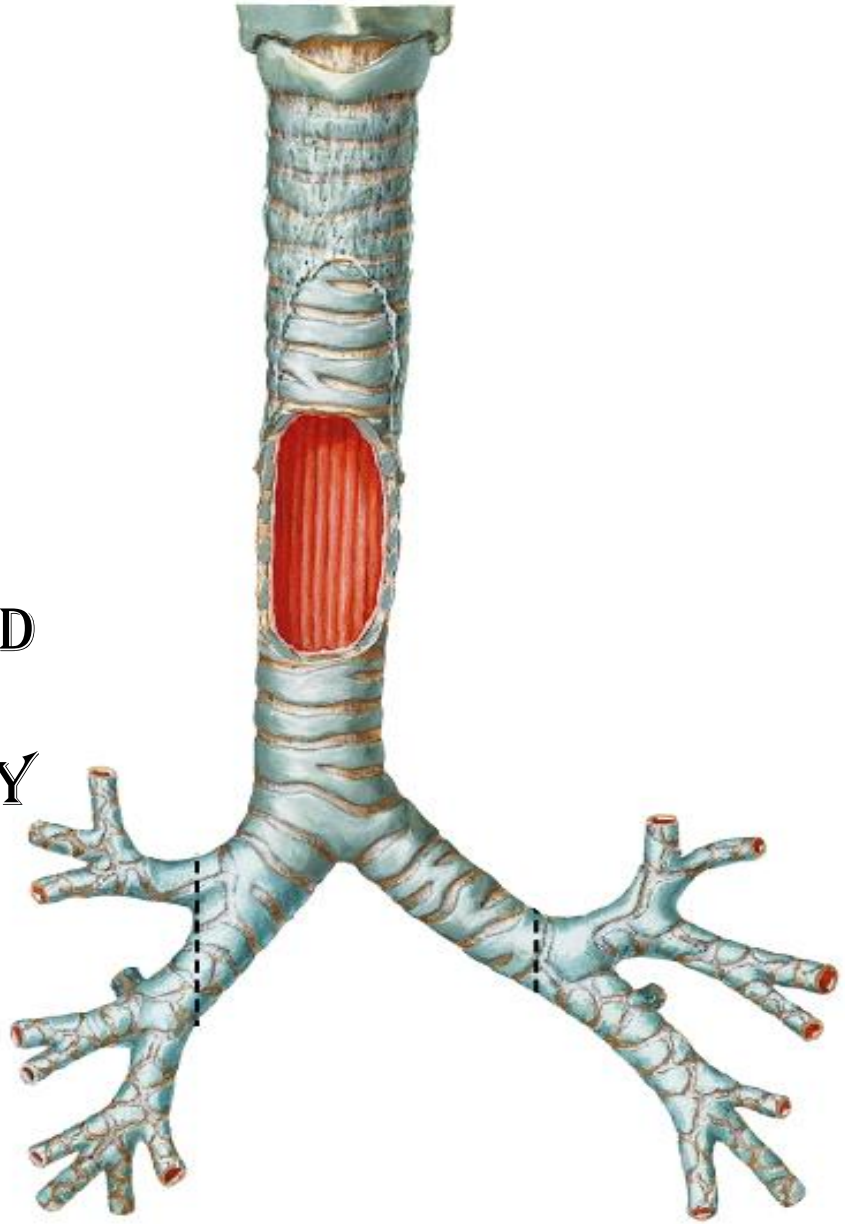


TRACHEA

TRACHEA

DEF.

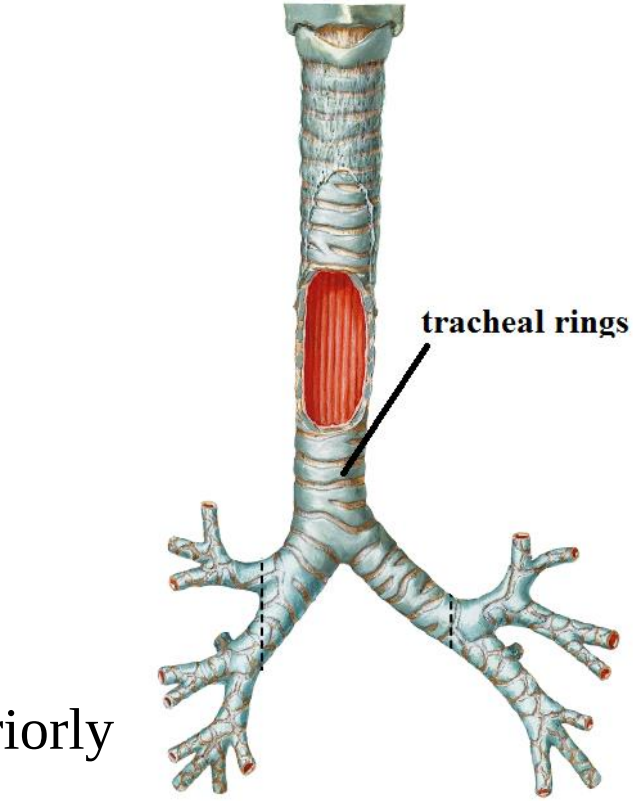
- Elastic tube conveys air
  into & out of the lungs

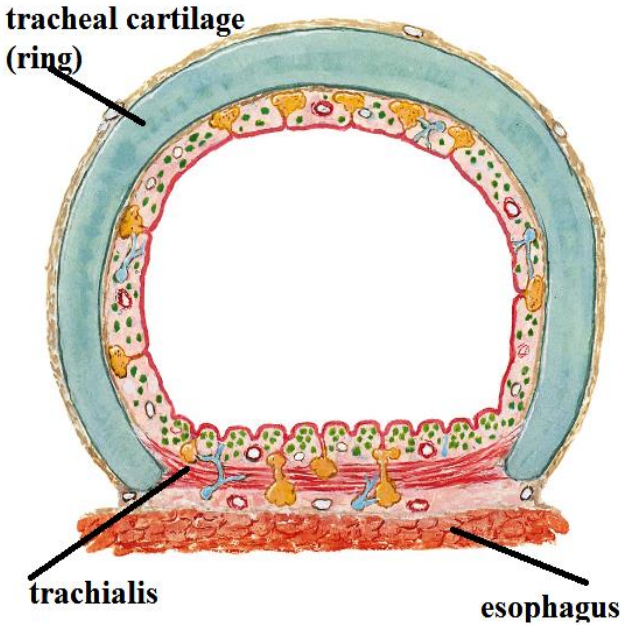
Structure

- The wall of the trachea is formed of
  16-20 cartilaginous rings
  connected by fibromuscular membrane
- The rings are C-shaped, deficient posteriorly
  where they are replaced by
  smooth muscle fibers (trachialis)
  to allow distention of the esophagus
  during swallowing

Size

- Length: 10-11 cm
- External transverse diameter: 2 cm
- Lumen: 1.2 cm





TRACHEA

Beginning:-

- at lower border of cricoid cartilage (C6)
  as continuation of larynx

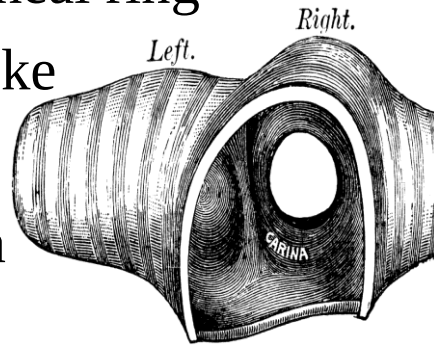
Course.:-

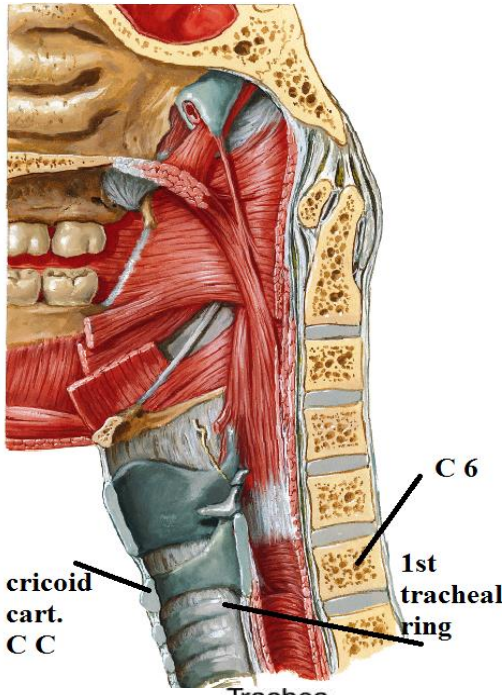
- descends in midline of neck (cervical part)
- Descends in sup. mediastinum (thoracic part)
  with slight deviation to the right

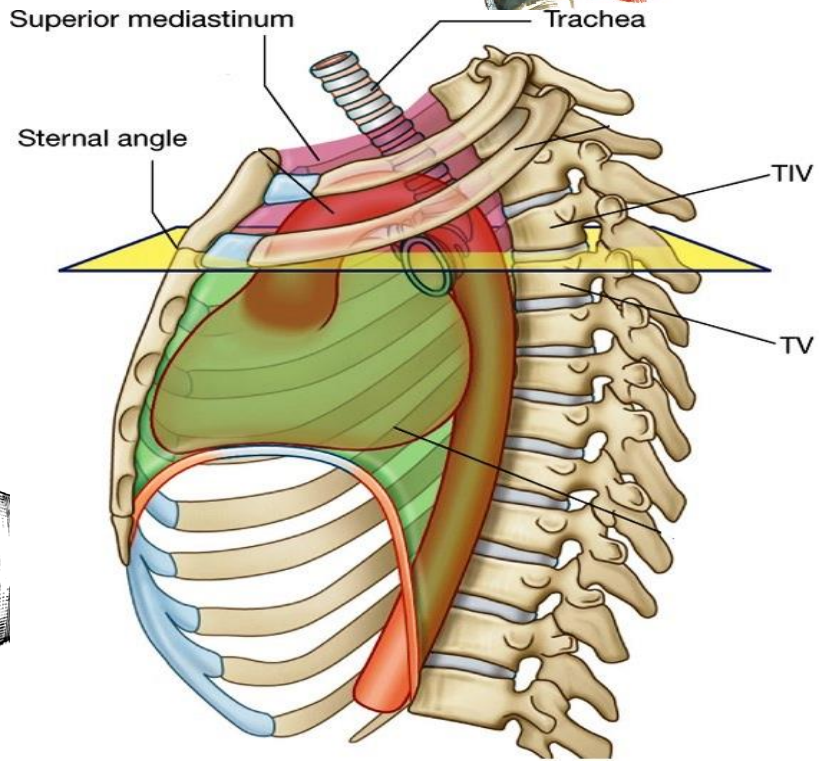
End:

- at T4/T5 to divide into
  RT & Lt main bronchi

N.B.:- the last tracheal ring has a keel like extension called carina







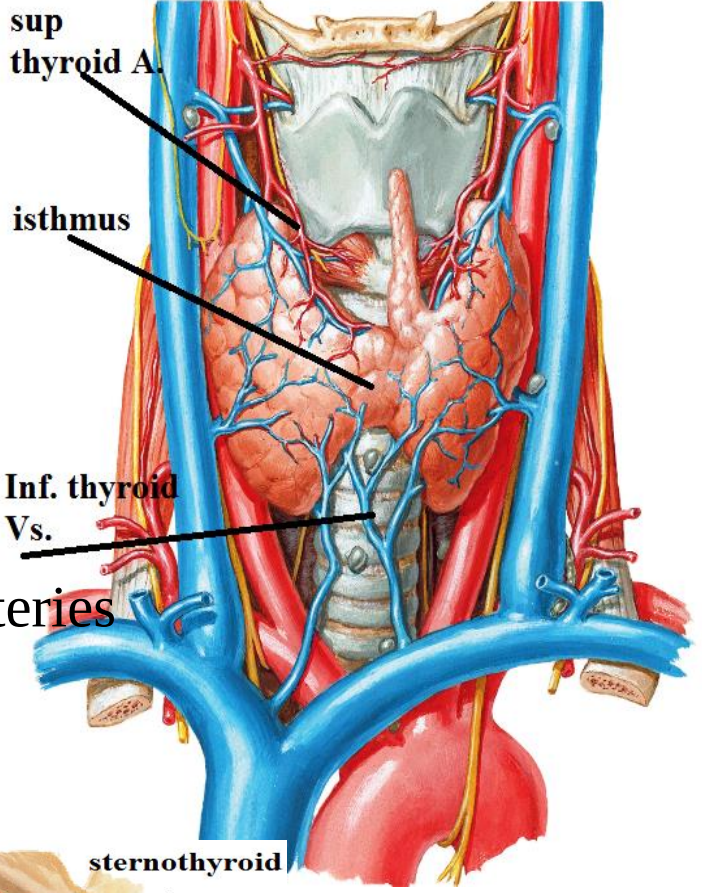
TRACHEA

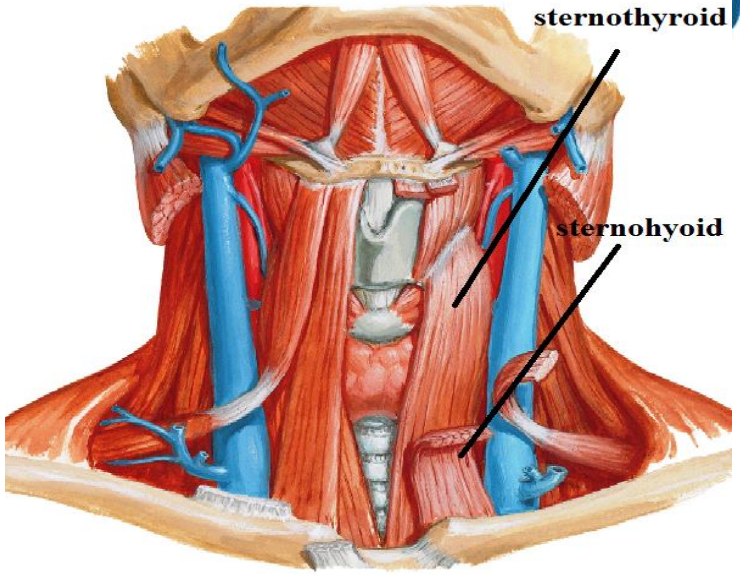
Relations.:-

Cervical part

Anteriorly:-

- Isthmus of thyroid gland
  (opposite 2nd, 3rd, 4th rings)
- Anastomosis ( ) 2 superior thyroid arteries
- Inferior thyroid veins
- Sternothyroid & Sternohyoid muscles
  (strap muscles)





TRACHEA

Relations.:-

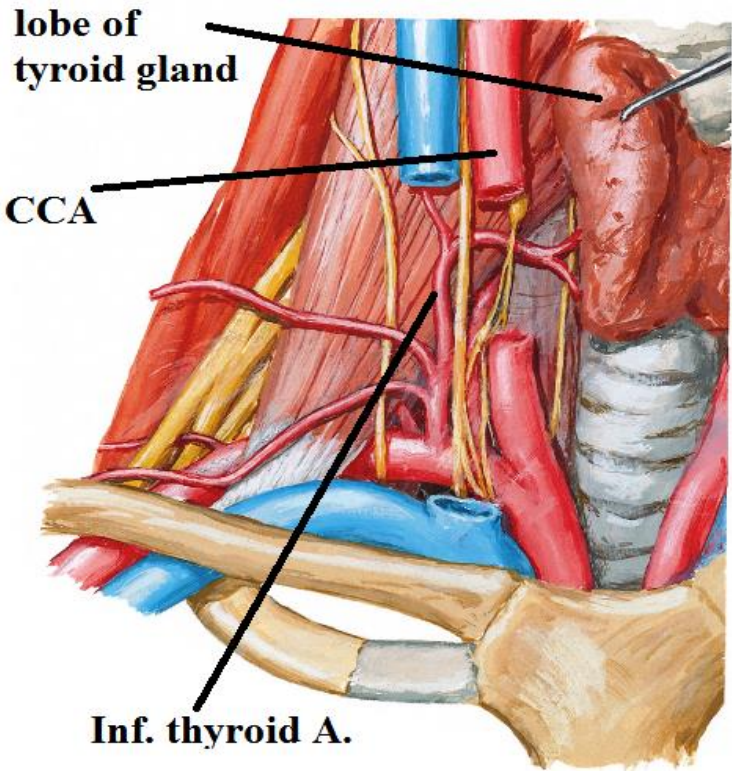
Cervical part

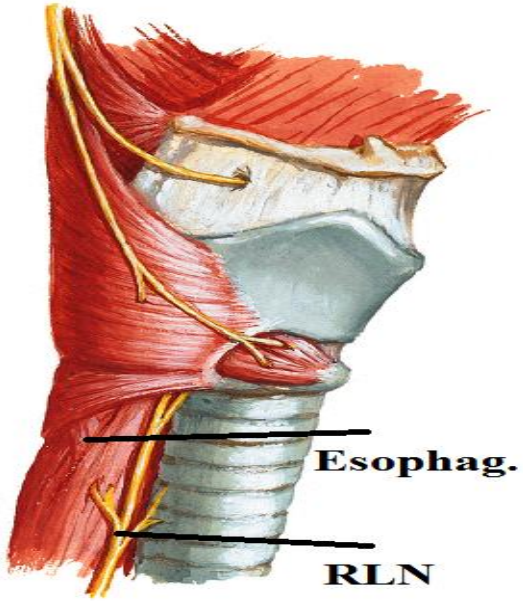
On each side:-

- Lobe of thyroid gland
- Carotid sheath
- inf thyroid artery

Posteriorly-

- Esophagus
- Recurrent laryngeal nerves





TRACHEA

Relations.:-

Thoracic part

Posteriorly: -

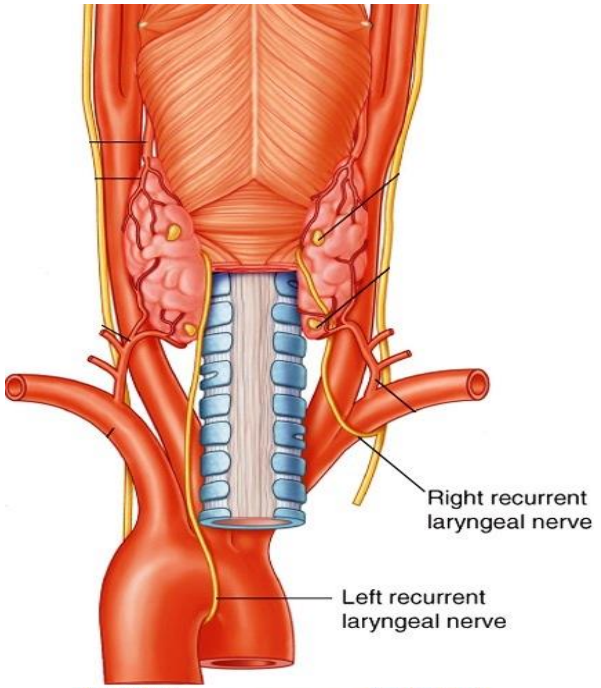
- Esophagus
- lt recurrent laryngeal nerve

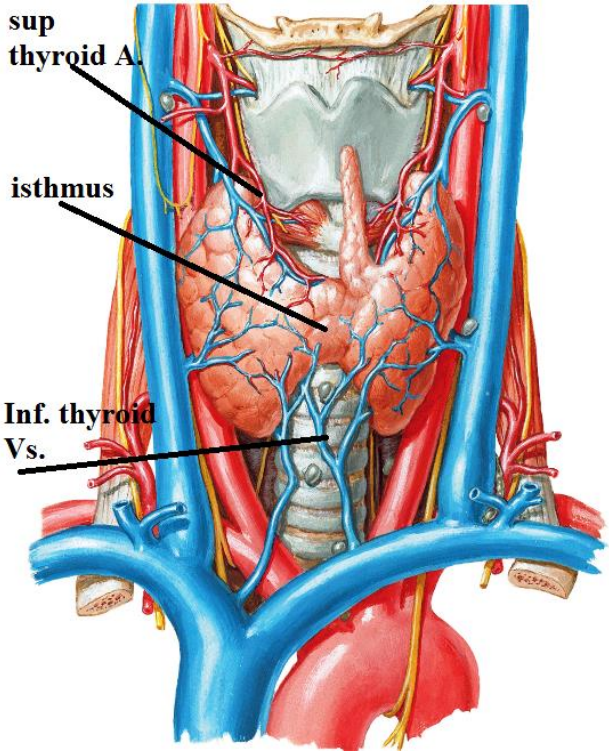
Anteriorly:-

- Aortic arch
- Beginning of

(brachiocephalic artery & lt CCA)

- Lt brachiocephalic vein & thymus
- Manubrium & origin of strap muscles

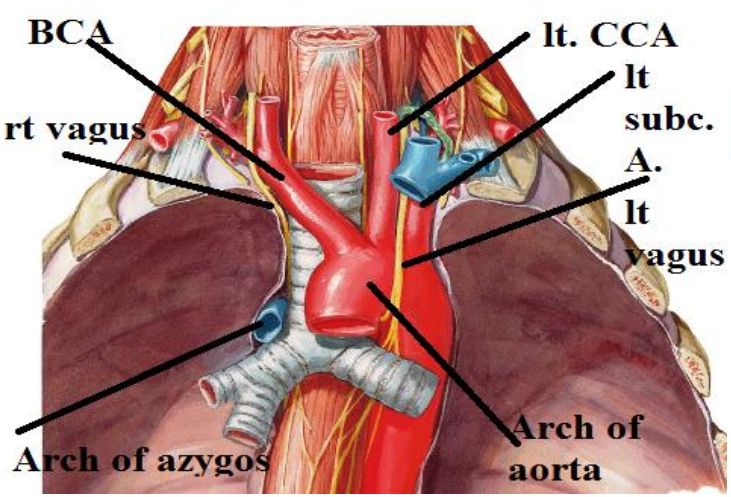


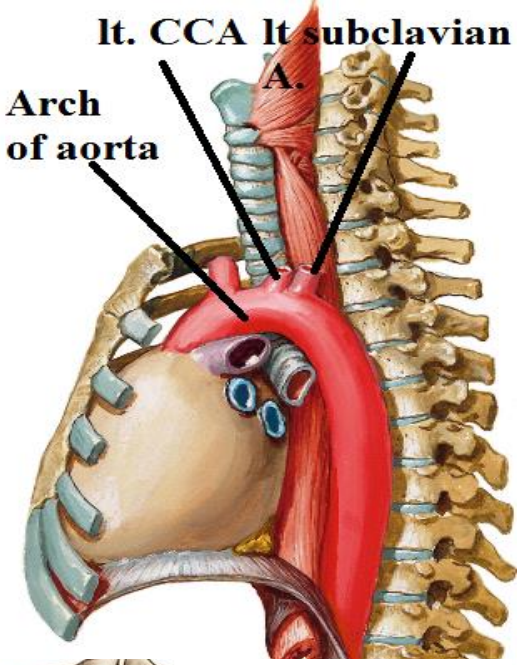


TRACHEA

Relations.:-

Thoracic part



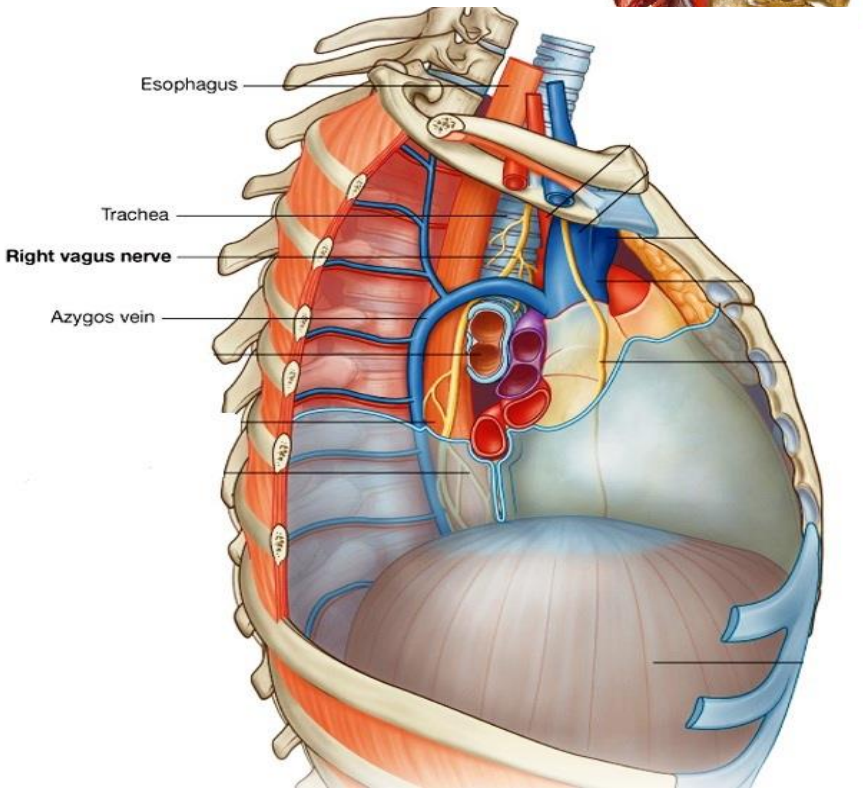


Lt Side:-

- Aortic arch
  & lt common carotid
  & lt subclavian arteries
- Lt Vagus
- Lt Lung & pleura

Rt side:-

- Arch of azygos
  & brachiocephalic artery
- Rt vagus nerve
- Rt ling & pleura



TRACHEA

Constrictions:-

1- upper part by thyroid gland

2-middle by brachiocephalic artery

3-lower part by arch of aorta

Blood supply:-

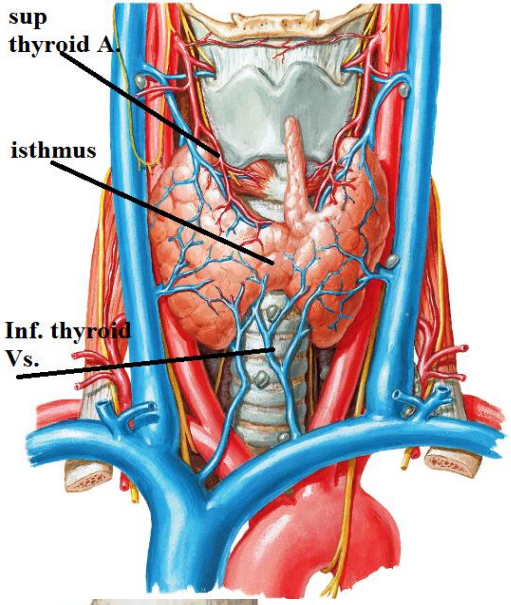
- cervical part:- inferior thyroid artery
- Thoracic part:- bronchial arteries

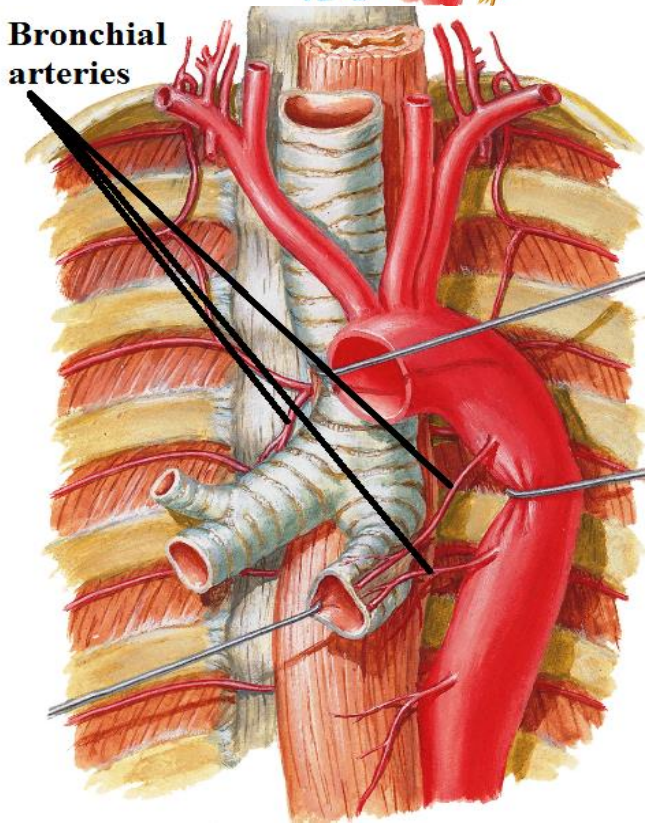
L.N.:-

pretracheal & paratracheal l.ns

N.S.:-

- parasympathetic from both vagi
- sympathetic fibers from both sympathetic chains





BRONCHI

BRONCHI

Trachea, divides into

2 main bronchi (1ry) then

Lobar bronchi (2ry) then

Segmental bronchi (3ry) then

Terminal bronchiole, (millions) then

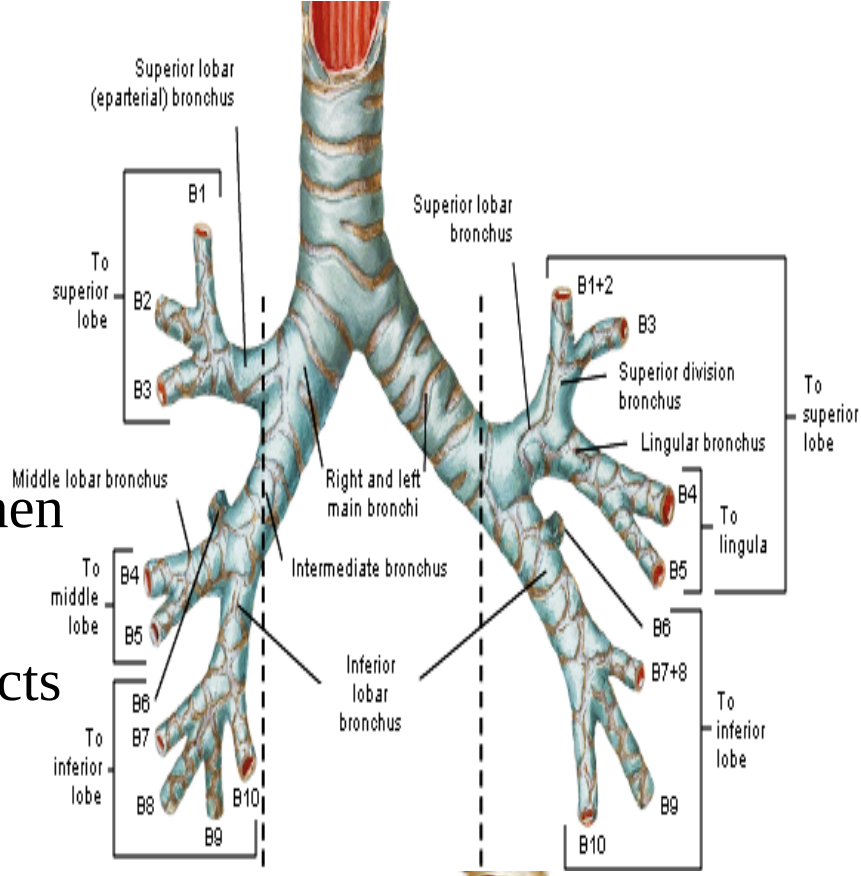
Respiratory bronchioles,

each divide into 2-11 Alveolar ducts

that enter Alveolar sac,

the alveoli arise from

the wall of alveolar sac as diverticula



BRONCHI

N.B.:-

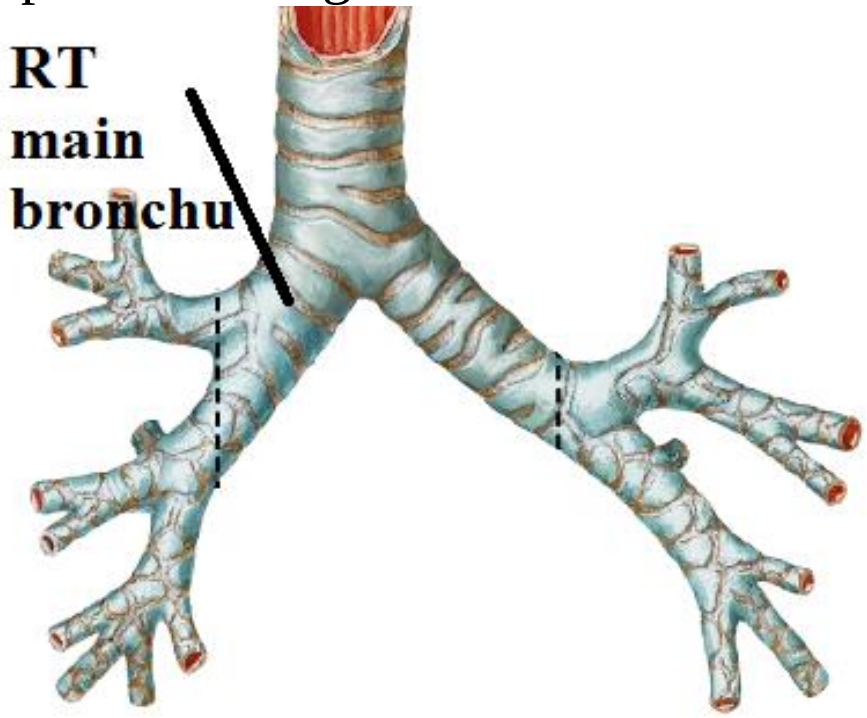
the RT main bronchus is wide, short (2.5 cm) – vertical,

Before the lung it gives superior lobar bronchus then inside the lung it divided into middle, inferior lobar bronchus

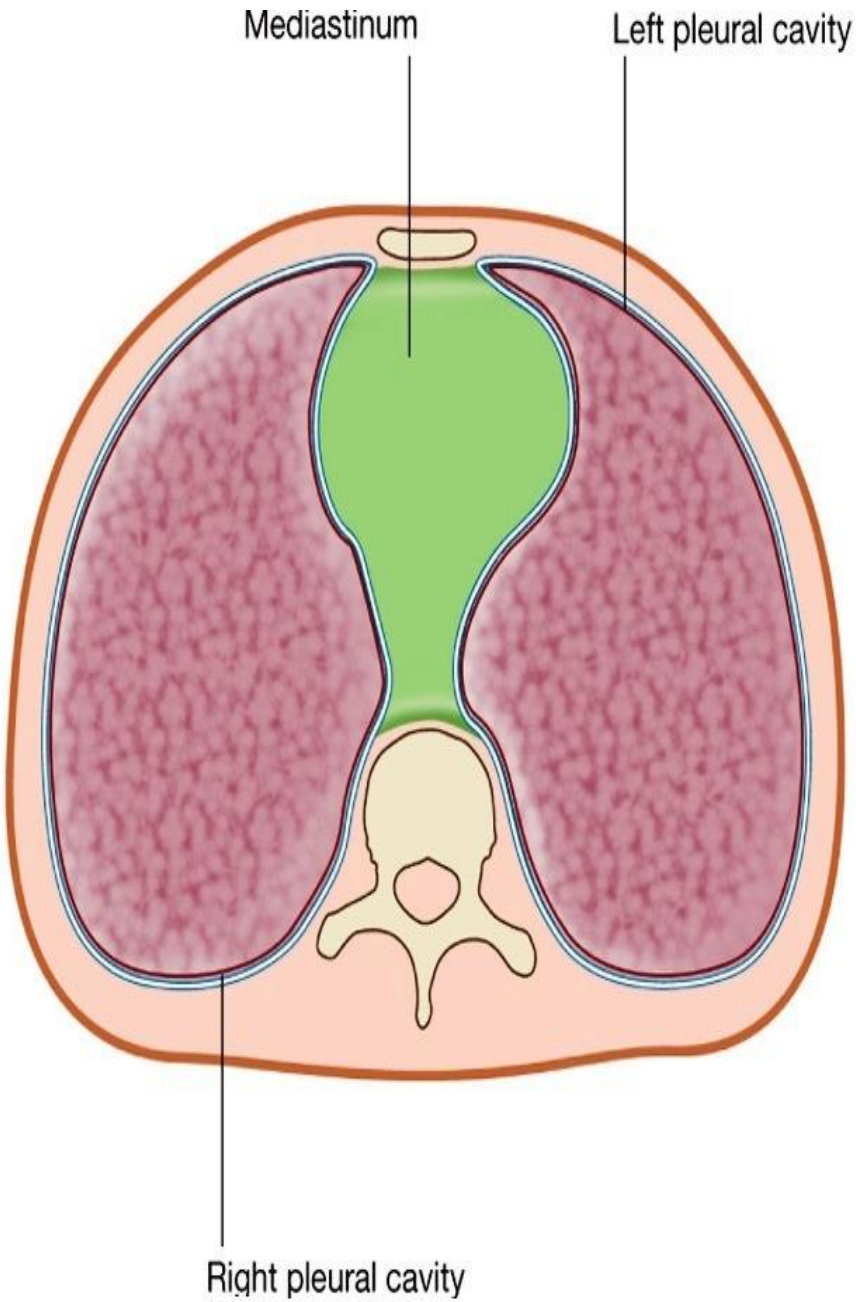
N.B.:-the lt main bronchus is narrow, long (5 cm) – nearly horizontal,

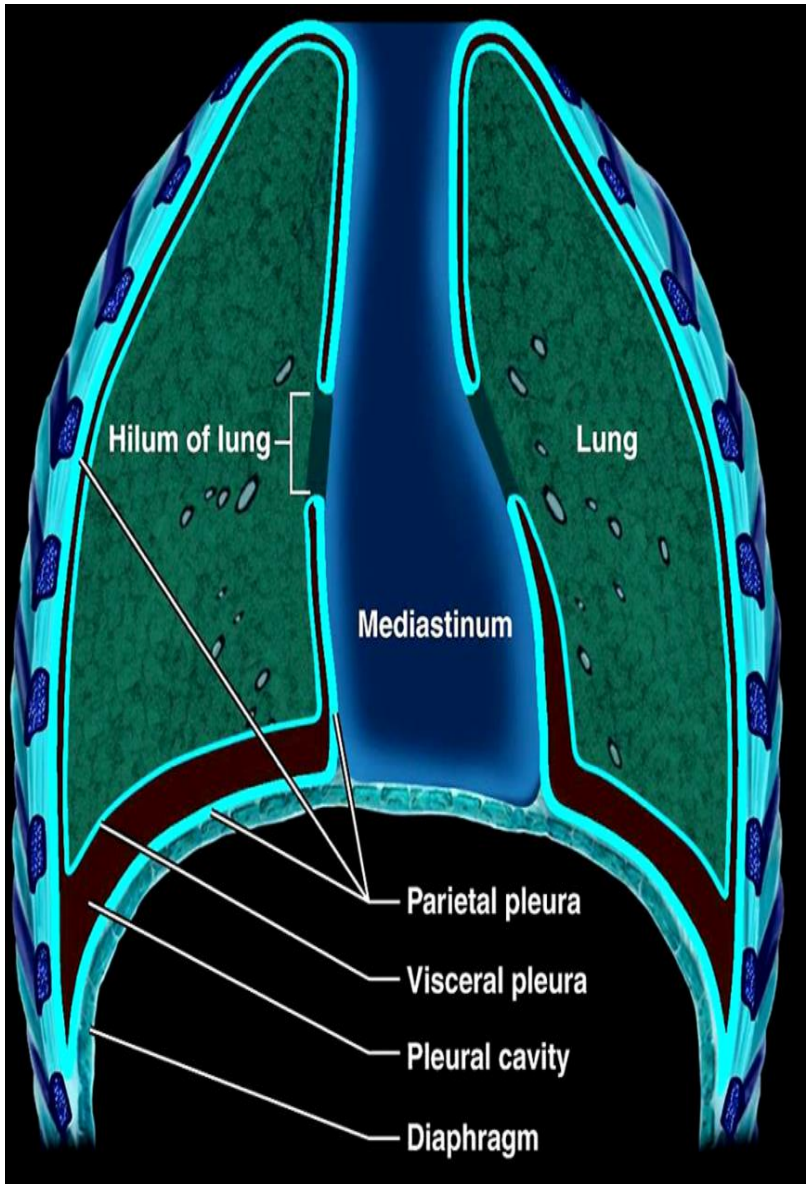
Inside the lung it divided into superior, inferior lobar bronchus

So inhaled foreign body tends to pass to rt lung



PLEURA


Mediastinum
Left pleural cavity
Right pleural cavity


Hilum of lung
Lung
Mediastinum
Parietal pleura
Visceral pleura
Pleural cavity
Diaphragm

PLEURA

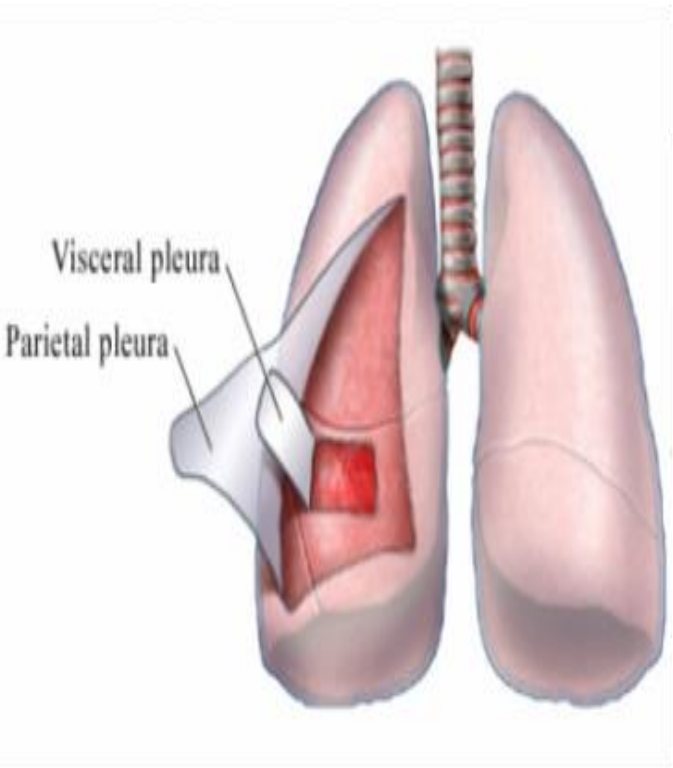
Def.: closed serous sac invaginated from its medial side by the lung so it's divided into

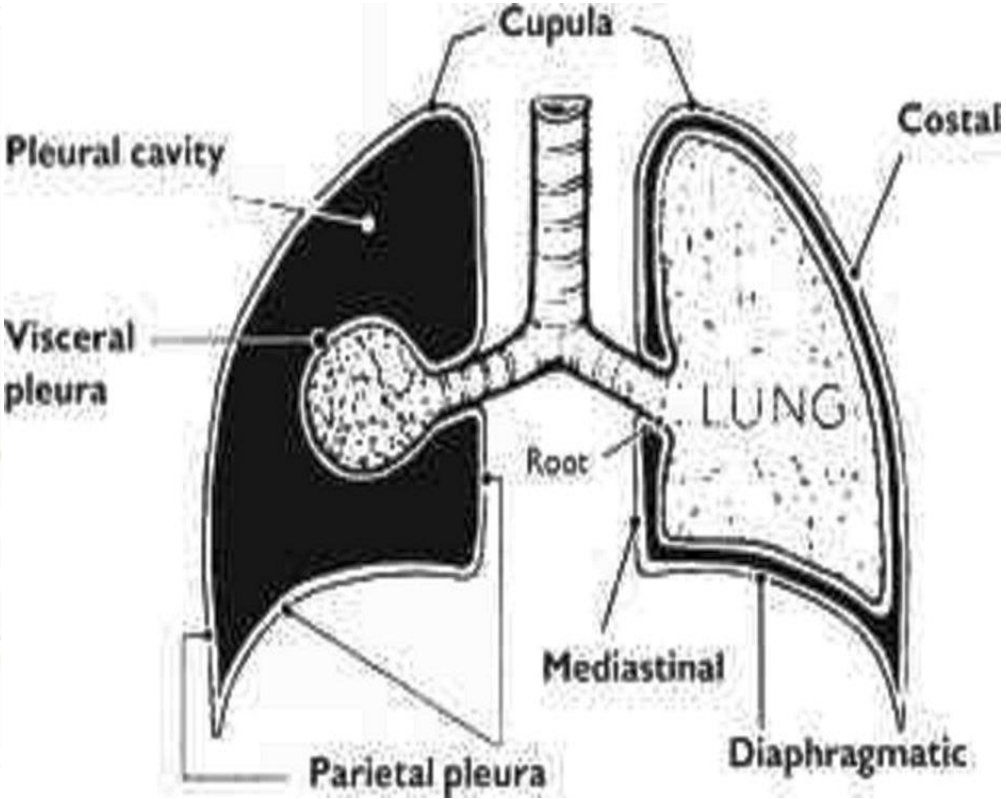
1-visceral pleura: - covers the lung & lines lung fissures

2-parietal pleura: - lines the thoracic cavity

3-pleural cavity: -closed space in between,

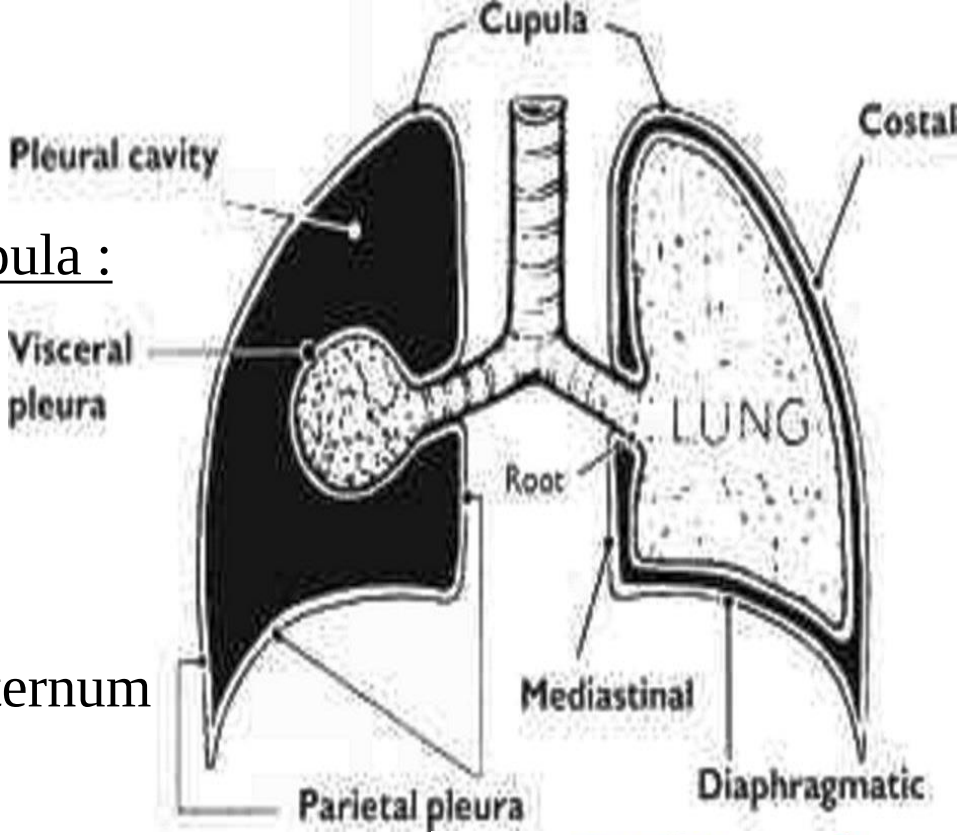
Contain thin film of serous fluid allow layers to move on each other





PLEURA

Parts of parietal pleura



1-Cervical=dome=pleural copula :

Cover apex of lung &

projects into root of neck

2-costal :

Lines the sides of vertebrae,

the ribs, intercostal spaces, sternum

3-diaphragmatic :

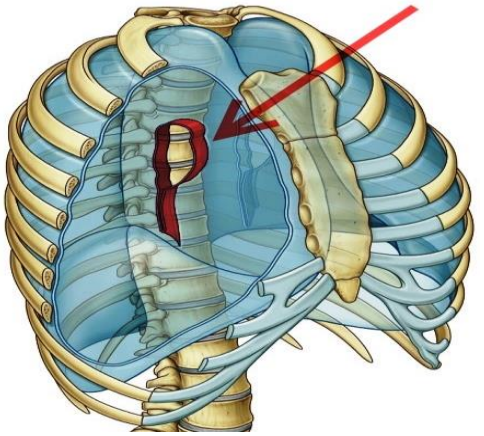
Cover diaphragm

4-mediastinal :

Cover lateral side of mediastinum

& sends a sleeve like extension

(called pleural cuff) around root of the lung



to be continuous with visceral pleura at hilum of lung. This pleural cuff hangs downwards as a loose fold called pulmonary ligament

PLEURA

Pleural recesses:

Def.:- parts of pleural cavity at lines of pleural reflection not occupied by lung except in full inspiration

Sites: -

1- Costo mediastinal: -

( ) chest wall & mediastinum

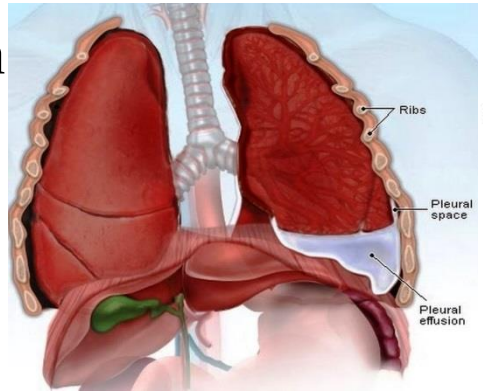
-receive ant border of lung

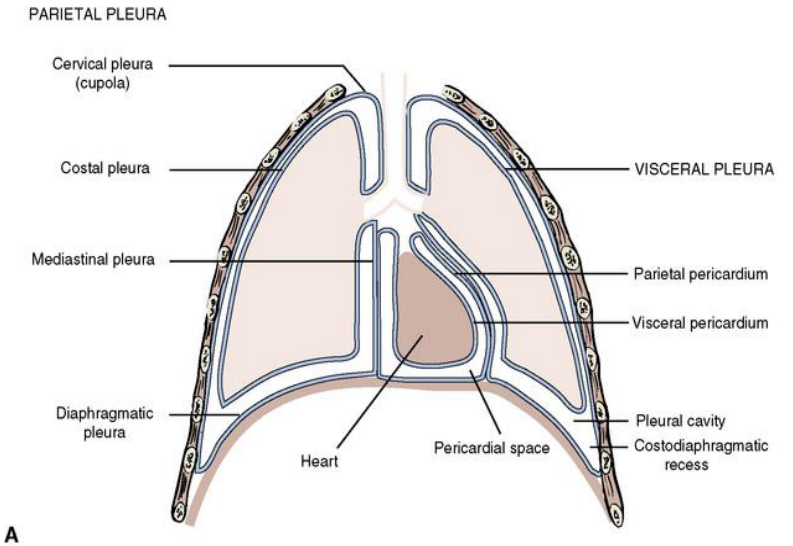
2-Costo diaphragmatic: -

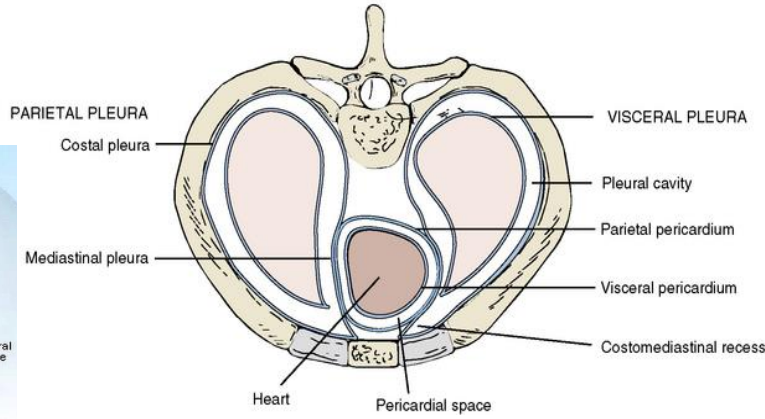
( ) chest wall & diaphragm

receive inf. border of lung

It is the 1st part to be filled in pleural effusion







PLEURA

Nerve SUPPLY

1-Visceral pleura: - Autonomic nerves (pulmonary plexus)

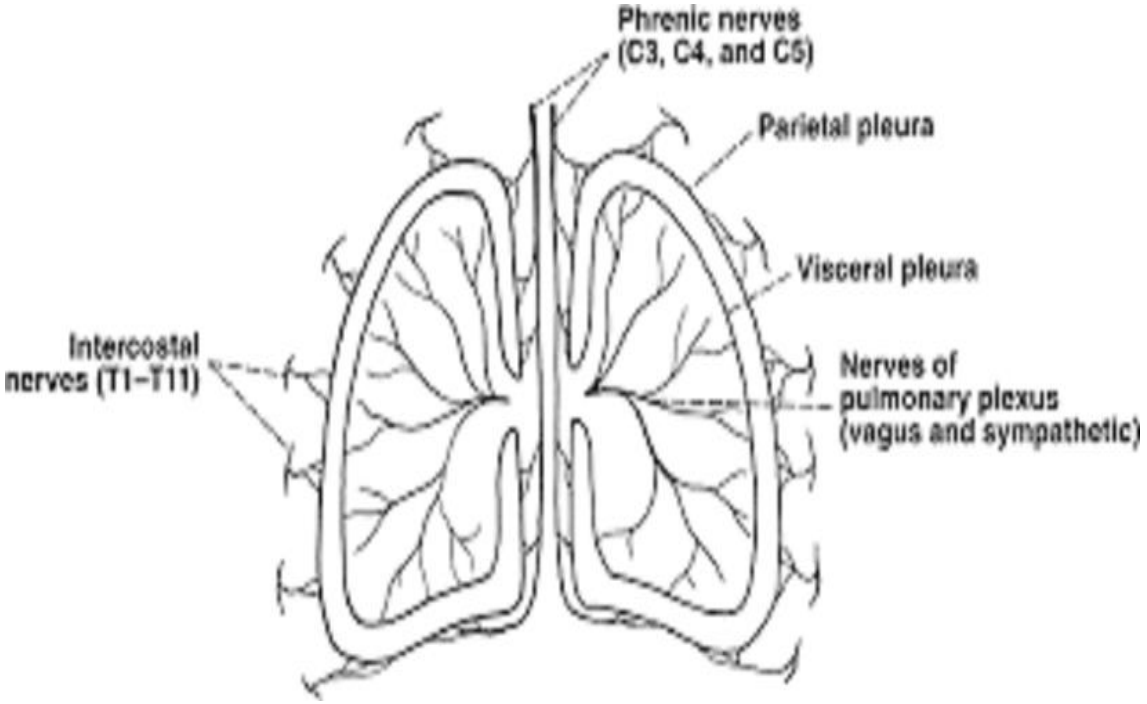
2-Parietal pleura:-Somatic nerves (sensitive to pain)

1-costal & peripheral part of diaphragmatic:

supplied by Intercostal nerves

2-mediastinal & central part of diaphragmatic: -

supplied by phrenic nerves



PLEURA

Blood SUPPLY

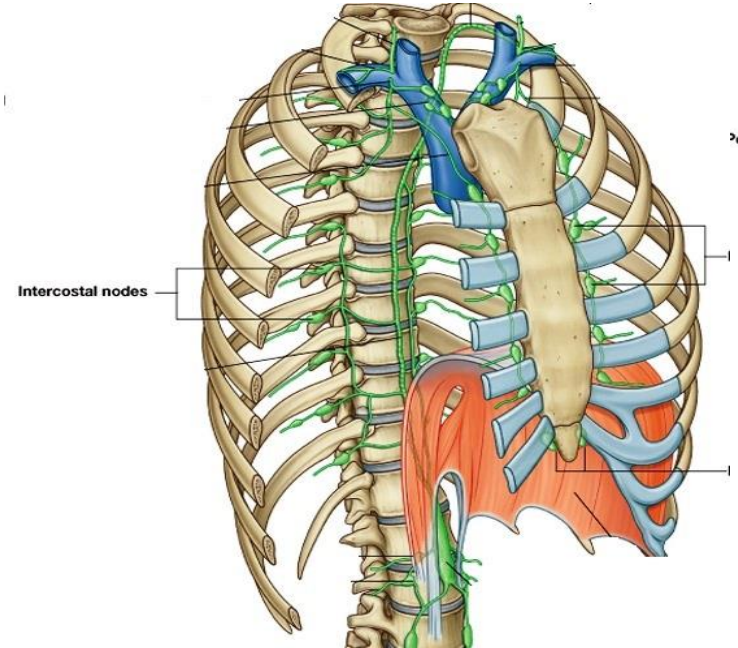
1-Visceral pleura: - bronchial arteries

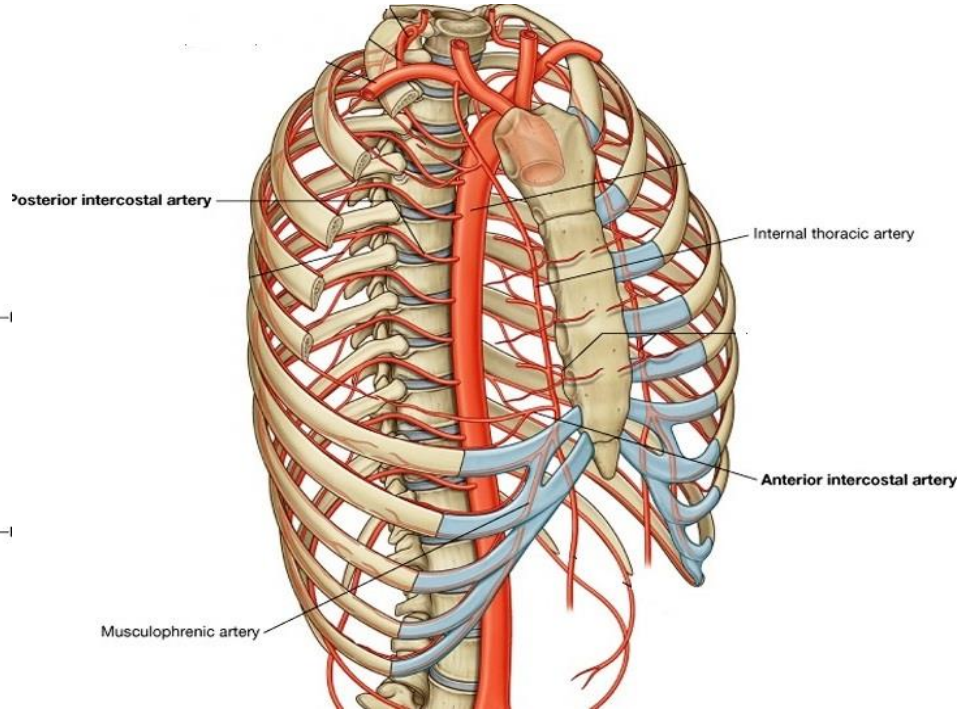
2-Parietal pleura: - intercostal, internal mammary (thoracic), musclophrenic vessels

Lymphatic drainage

1-Visceral pleura: - Broncho pulmonary l.n.

2-Parietal pleura: - intercostal, parasternal, diaphragmatic, posterior mediastinal l.n.





THANQ