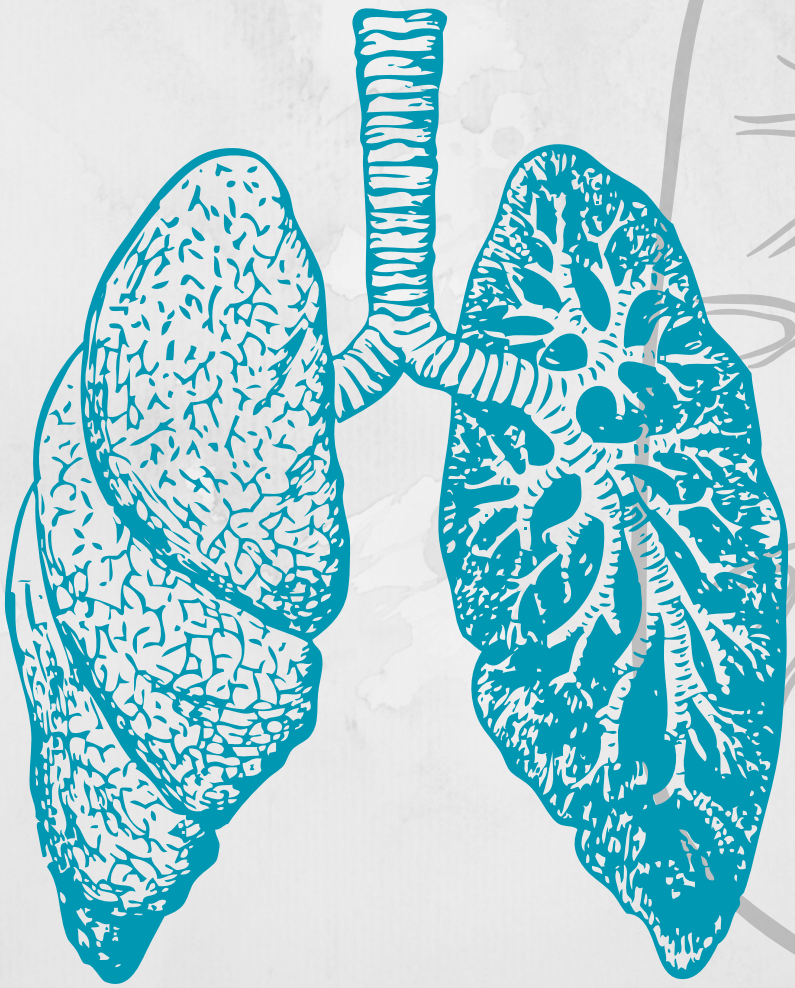
Antomy Lab



Done by

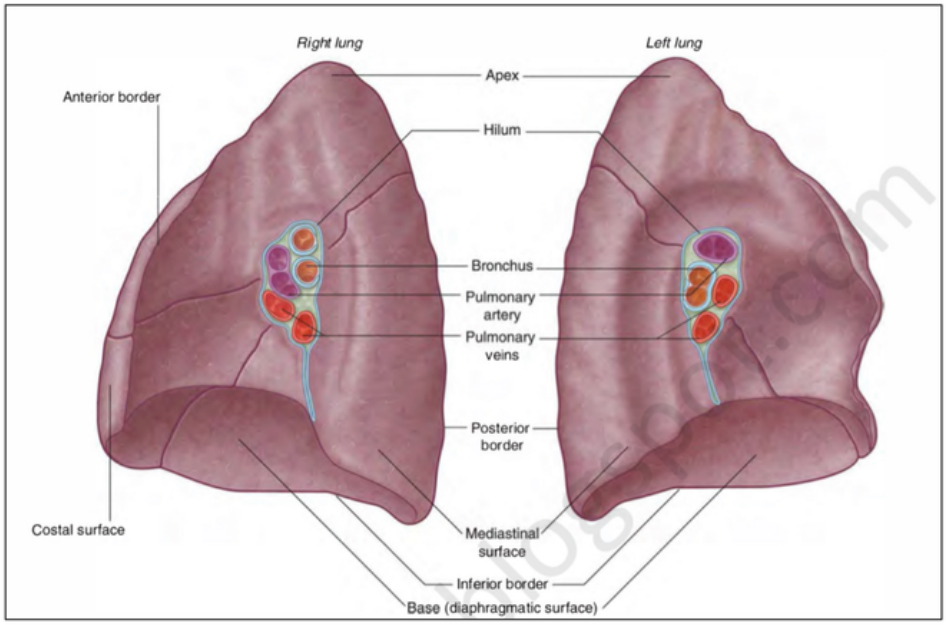
Ala’a Al-Najdawi

Layan Lafi

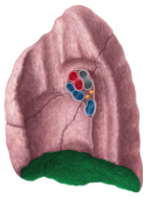
4th lab : Lungs and pleura:

1) The Lung :

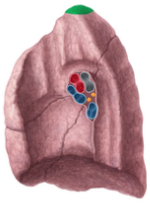
- you should observe the base ,apex ,two surfaces and three borders of lungs .



- The base of the lung (Diaphragmatic surface):



- The apex of the lung:

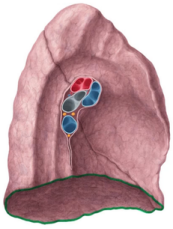


- Costal surface :

- Mediastinal surface:

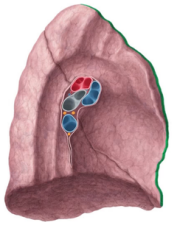
- The inferior border :

thin and sharp



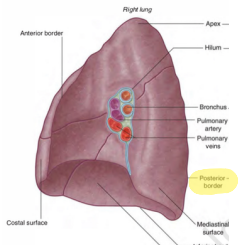
- The anterior border :

thin and sharp



- The posterior border:

rounded and smooth



- **Note:**

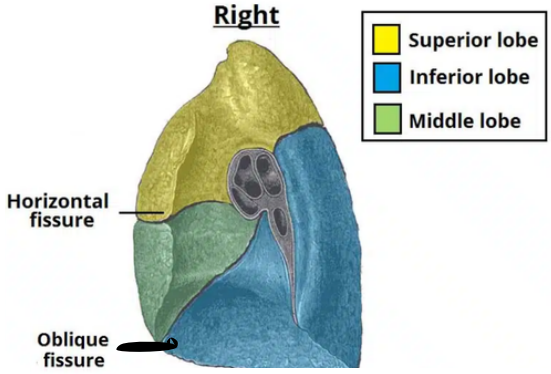
The apex of the lung is related 1 inch above the medial third of the clavicle or 3-4 cm above the 1st rib . This is a very important region (apex) where we can insert the cannula in the subclavian vein on the upper surface of the 1st rib so we might make a hole in the lung in this area ~collapse of the lung.

4th lab : Lungs and pleura:

- You should know the difference between the right and left lung:

• The right lung :

1. Wider
2. shorter
3. (3) lobes
4. (2) fissures



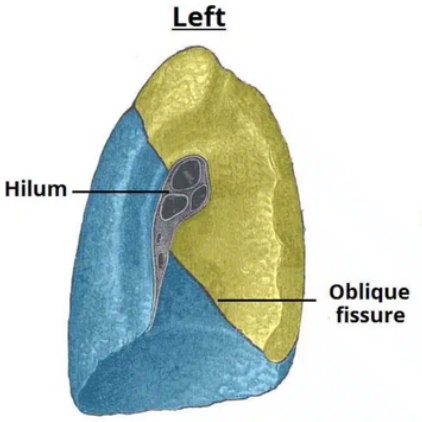
Surface anatomy of the right lung fissures:

1- Oblique fissure: starts at the spinous process of vertebra T4 , crosses the fifth intercostal space laterally, and then follows the contour of rib VI anteriorly.

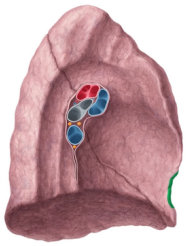
2- Horizontal fissure: opposite to the oblique fissure, follows the fourth intercostal space from the sternum until it meets the oblique fissure as it crosses rib V.

• The left lung :

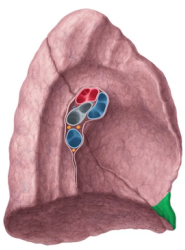
1. Narrow
2. longer
3. (2) lobes
4. (1) fissure
5. have a cardiac notch :



The cardiac notch : between the 4th and the 6th costal , one cm to the left , 1 inch in length.



6. lingula of the left lung :



The oblique fissure of the left lung :

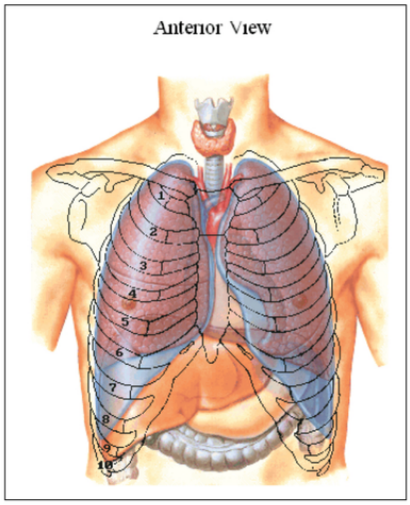
begins between the spinous processes of vertebrae T3 and T4, crosses the fifth intercostal space laterally, and follows the contour of rib VI anteriorly.

4th lab : Lungs and pleura:

- **The surface anatomy of the lung :**

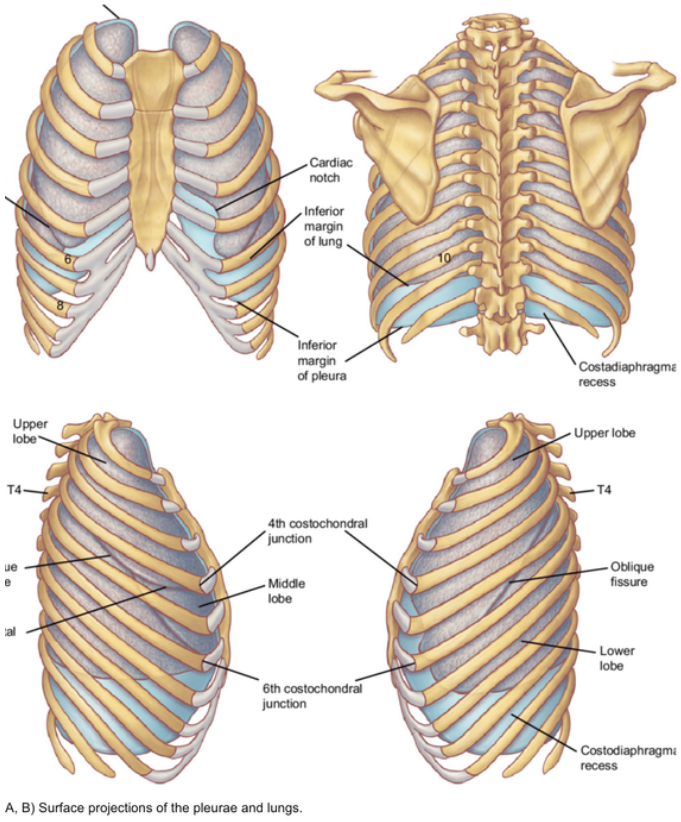
The anterior border: it starts from the apex - to the sternoclavicular joint -to the sternal angle then it descends down until it reaches the 6th costal cartilage in the midline.

The posterior border: it starts from the apex and descends posteriorly until it reaches T10.



Base of the lung: is important since it helps us know the surface anatomy of the pleura (below the lung by 2 spaces):
1- Mid-clavicular : intersects with 6th costal cartilage.
2- Mid-axillary : intersects with 8th rib
3- Posteriorly : with the 10th T. Vertebrae 4cm away from midline.

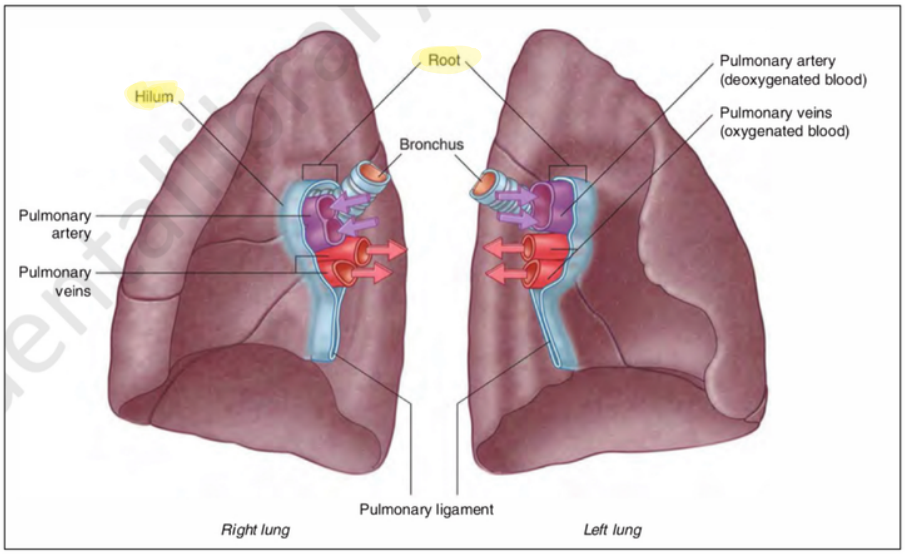
The apex of the lung : is found 1 inch above the medial third of the clavicle .



A, B) Surface projections of the pleurae and lungs.

4th lab : Lungs and pleura:

- **The root and hilum of the lungs:**
  The hilum: between T5 and T7 .

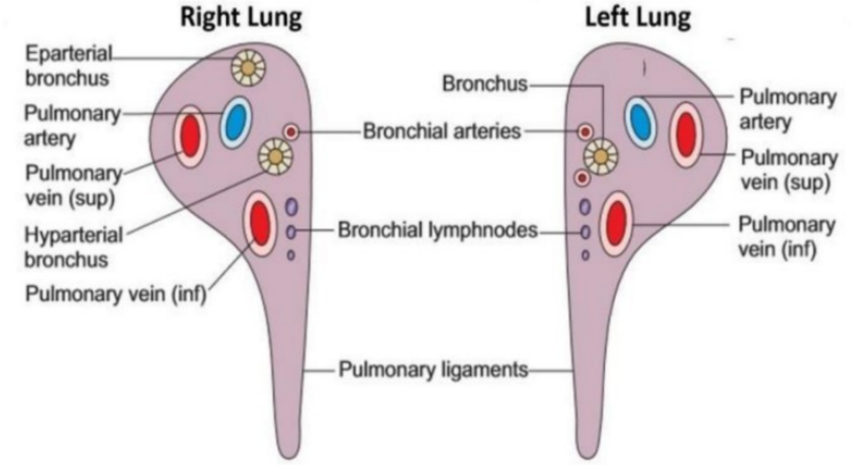


- **Content the right hilum :** IMPORTANT

1. Eparterial bronchus (superior most).
2. pulmonary artery (blue ~deoxygenated blood).
3. Hyparterial bronchus.
4. (2) pulmonary veins (inferior most).

- **Content the left hilum :**

1. **The pulmonary artery (superior most) .**
2. The primary/ principal bronchus.
3. (2) pulmonary veins (inferior most).



- Note:

*In the hilum, the right main bronchi branches into: Eparterial bronchus and Hyparterial bronchus:

1. Eparterial: (above the pulmonary artery): supplies the upper lobe.
2. Hyparterial: (below the pulmonary artery): supplies the middle and lower lobes.

*In the right lung:the pulmonary artery branches in the hilum before reaching the lung , unlike the left lung where the pulmonary artery branch in the lung (after entering the lung).

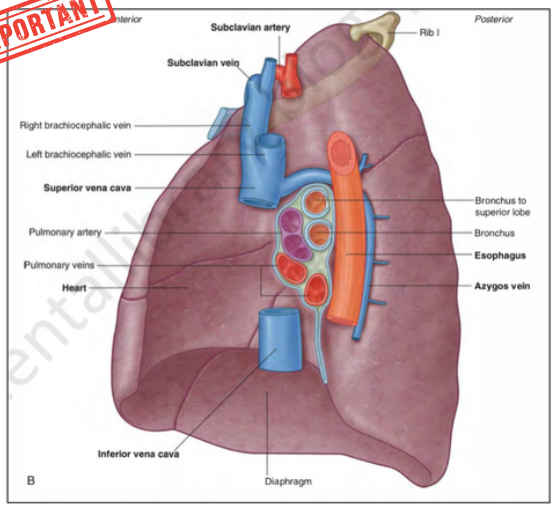
*In each hilum located:

1-pulmonary artery .2-pulmonary veins. 3-Lymphnodes and vessels 4- Nerves(sympathetic and parasypathetic). 5-Bronchial vessels. 6-Bronchus.

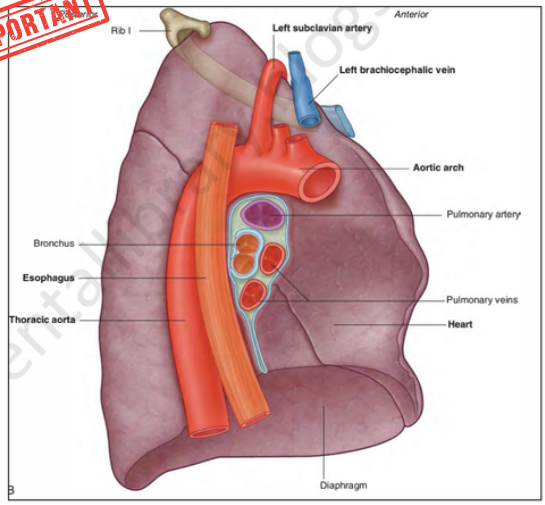
4th lab : Lungs and pleura:

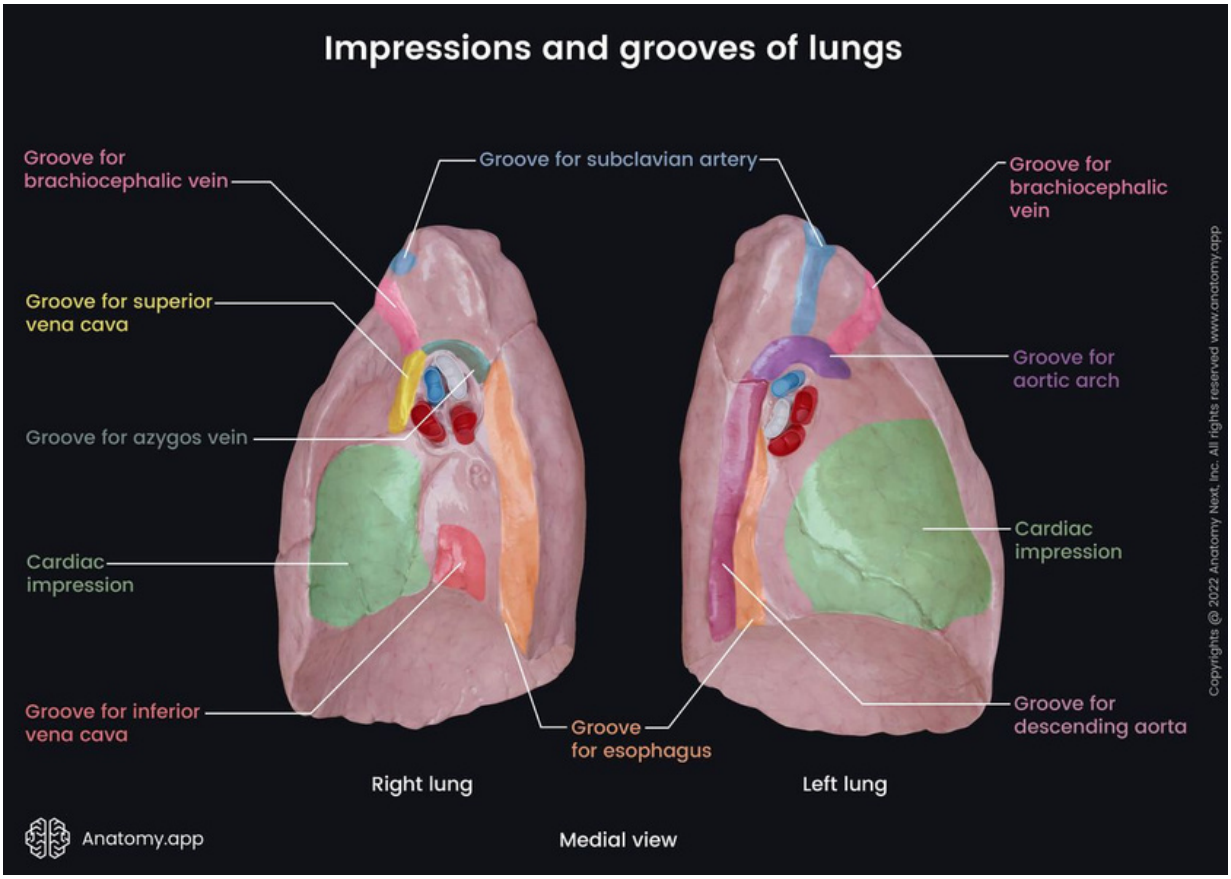
- **The Impressions and grooves of lungs:**
  - **Impressions on the right lung :**
    1. Inferior vena cava
    2. Superior vena cava
    3. Right atrium.
    4. Arch of azygos vein
    5. Trachea
    6. Esophagus
  - **Impressions on the left lung :**
    1. Heart(pericardium covering the left ventricle)
    2. Aortic arch
    3. Thoracic aorta
    4. Esophagus
    5. Left common carotid
    6. Left subclavian

IMPORTANT



IMPORTANT



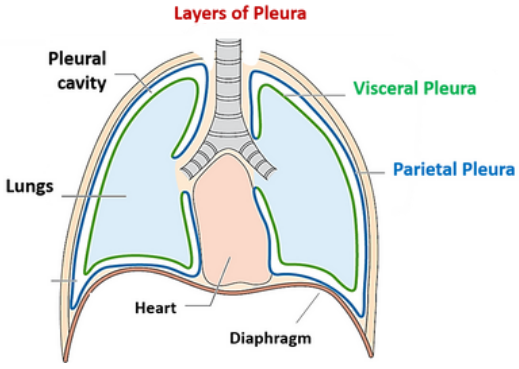


4th lab : Lungs and pleura:

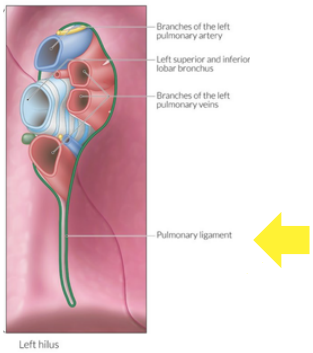
• Pleura:

- **The pleura is divided into two major types:**

1. Parietal pleura.
2. Visceral pleura.

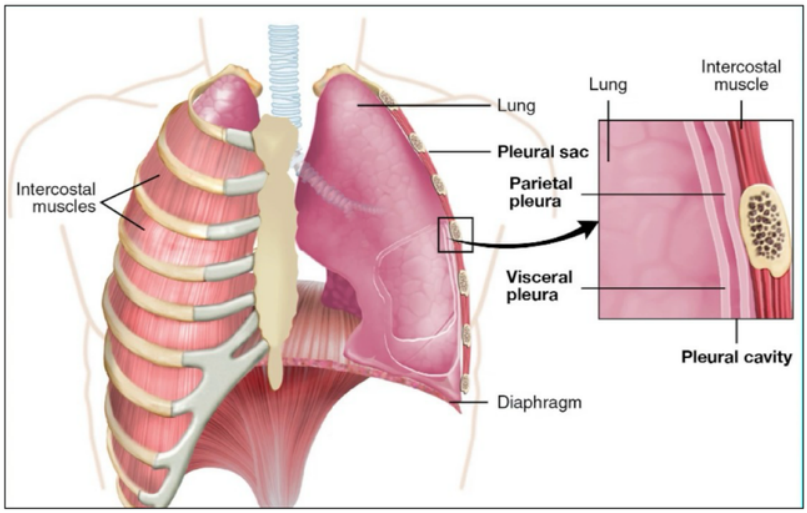


- Pleural cavity : is the potential space between the visceral and parietal pleura,which contains a very thin layer of serous fluid to lubricate the lungs .



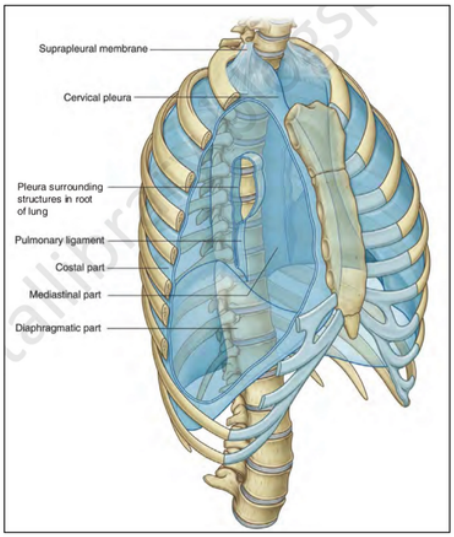
- **Note:**

*Both the parietal and visceral pleura adhere together making a sleeve around the hilum, producing a **pulmonary ligament** at level T5-T7.

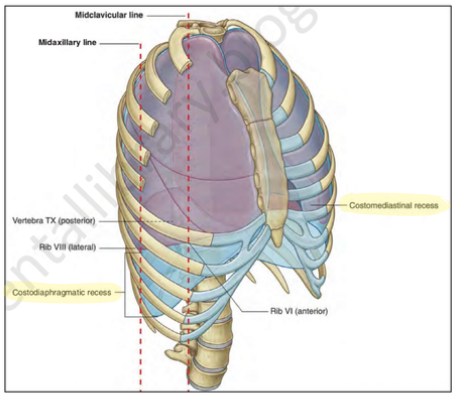


- **The parts of the parietal pleura:**

1- Costal part: related to the ribs and intercostal spaces.
2- Diaphragmatic part: at the base of the lung ,covering the diaphragm.
3- Mediastinal part: covering the mediastinal surface of the lung.
4- Cervical pleura: covers the apex of the lung , the parietal pleura here is adherent to the visceral pleura and the lungs,which means there's no pleural space. This pleura is covered by suprapleural membrane (called: **Sibson's fascia**) is part of the deep fascia at the root of the neck.



4th lab : Lungs and pleura:



- **The pleural recesses**:

1) Costomediastinal recesses.

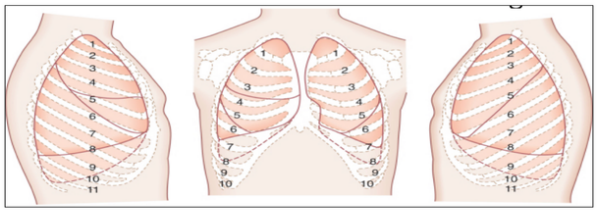
2) Costodiaphragmatic recesses: the largest and clinically most important recess ,because the accumulation of fluid or blood happens in this recess.

- **Surface anatomy of pleura:**

-At the midclavicular line, the recess is between rib spaces 6 and 8.

-At midaxillary line :between 8 and 10.

-At the paravertebral line :between 10 and 12 .

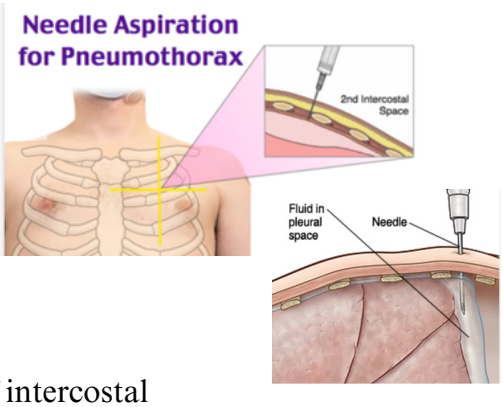


- **The difference between surface anatomy of the lung and parietal pleura:**

The anterior border of parietal pleura : reach the 7th costal cartilage.

The surface anatomy of the base (lower border) of the pleura : is always lower than the lungs by two intercostal spaces:

- 8th rib midclavicular.
- 10th rib midaxillary.
- posteriorly at the level of T12 .



In aspiration ,we can put a needle or cannula in the :

1) Midclavicular ~ 7th intercostal space.

2) Midaxillary ~ 9th intercostal space.

3) Paravertebral line ~11th intercostal space.

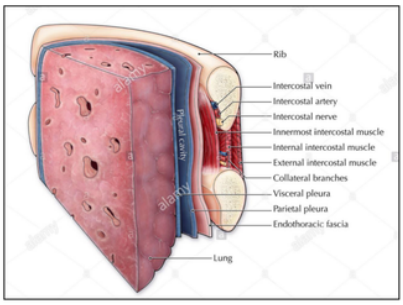
Remember: the needle is inserted at the lower border of intercostal space to avoid the injury to the vein ,artery or nerve.

The arterial supply of the parietal pleura :

-Intercostal arteries (ant&post).

-Internal thoracic.

-Musculophrenic arteries.

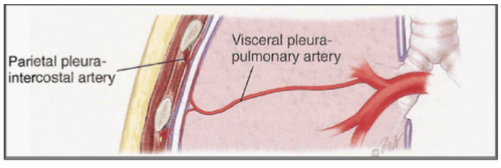


The arterial supply of the visceral pleura:

-Bronchial arteries :

~2 in the left lung .

~1 in the right lung .



4th lab : Lungs and pleura:

- **Lymphatic drainage of pleura:**

- **Parietal pleura:**

Mediastinal pleura by:

1- mediastinal nodes.

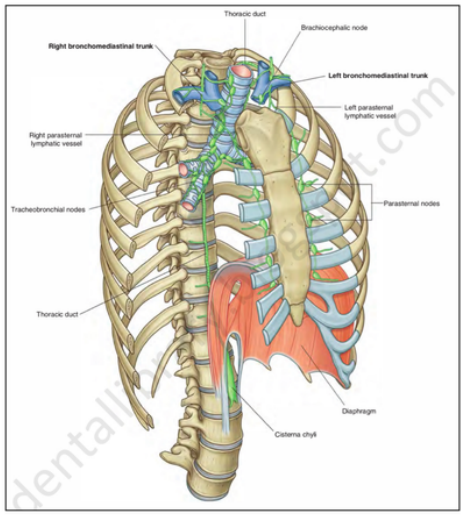
2-Tracheobronchial nodes

3-Intercostal nodes.

Diaphragmatic pleura:

1-Parasternal nodes.

2-Posterior mediastinal nodes



- **Pulmonary pleura(visceral) :**

along bronchial arteries →bronchopulmonary nodes → mediastinal nodes.

- **Nerve supply of the pleura:**

Parietal pleura:

- It is sensitive to Pain,Temp,Touch& Pressure.

1)Intercostal nerves → Costal pleura.

2)Phrenic nerve → Mediastinal pleura + diaphragmatic pleura.

3)Lower 6 intercostal → peripheral pleura.

Visceral pleura (such as the lung):

-Sensitive to stretch.

- Supplied by pulmonary plexus & autonomic.N.S.