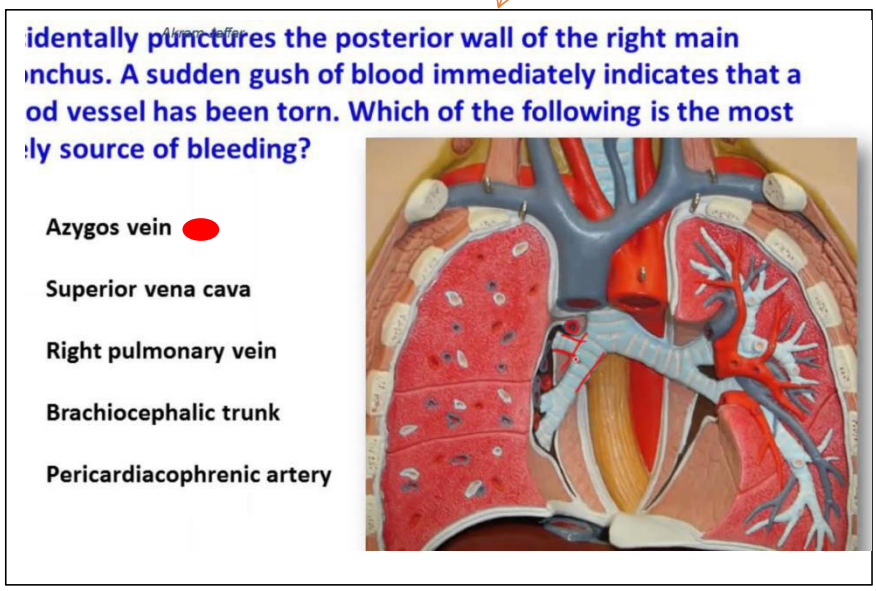
Lower Respiratory Tract-Handout (2)
Bronchi,Pleura,Lungs

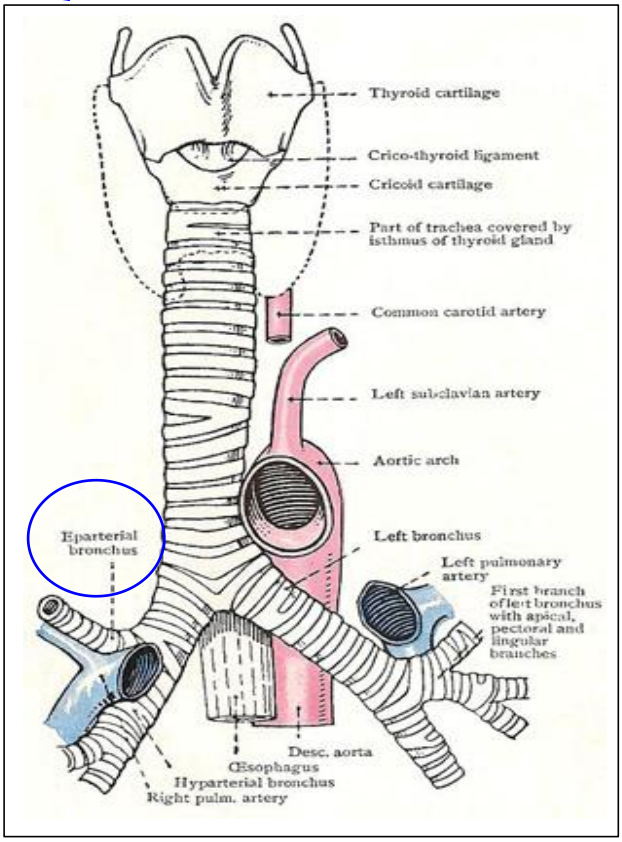
✍Key

Trachea -> bifurcation(Carina:T4-T5) -> main bronchi (Rt&Lt)-> lobar bronchi(3 to the Rt , 2 to the Lt) -> segmental (3°) bronchi ->Bronchioles (Repeated branches <1mm)-> terminal bronchioles -> respiratory bronchioles(5mm) -> alevolar ducts -> alveolar sacs -> alveoli

⭐ Comparison b/w the Rt and Lt main bronchi

	Rt main bronchus	Lt main bronchus
Features	Shorter (2.5cm) Vertical Wider	5 cm in length Horizontal
Superiorly crossed by	Arch of azygos vein	Arch of the aorta
Num of lobar branches	3 Sup , Mid , Inf	2 Sup , Inf
Relations	▫Passes post to the Rt pulmonary a and v (the a being most ant sup) (the v being most ant inf) ▫Posterior to SVC ▫Crossed superiorly by azygos arch	▫Passes Post to the Lt pulmonary a and v (the a being most ant sup) (the v being most ant inf) ▫Anterior to the descending aorta ▫Crossed superiorly by the aortic arch





⭐ Pleurae

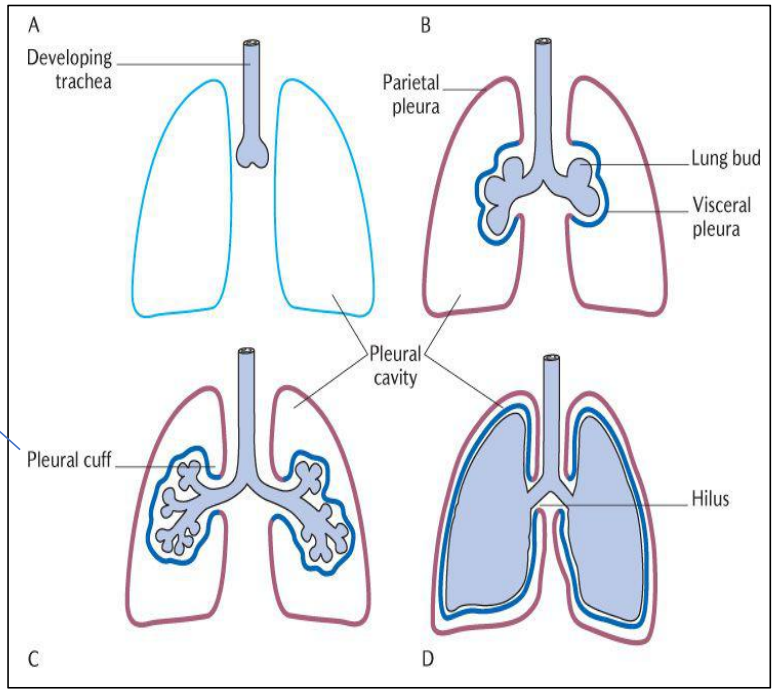
2 serous membranes (Rt,Lt) surrounding the lungs (separated :by the mediastinum).

Each composed of two layers :

(1) Parietal layer ➡lines the ribcage and covers upper surface of the diaphragm

(2) Visceral layer ➡ Covers the lung and extends into interlobar fissures(that's why they are considered to be completely separated from each other)

Pleural Cuff :
Formed where the two layers become continuous at the junctional region, surrounding the root (hilus) of the lung.
Inf continuation : Pulmonary Lig



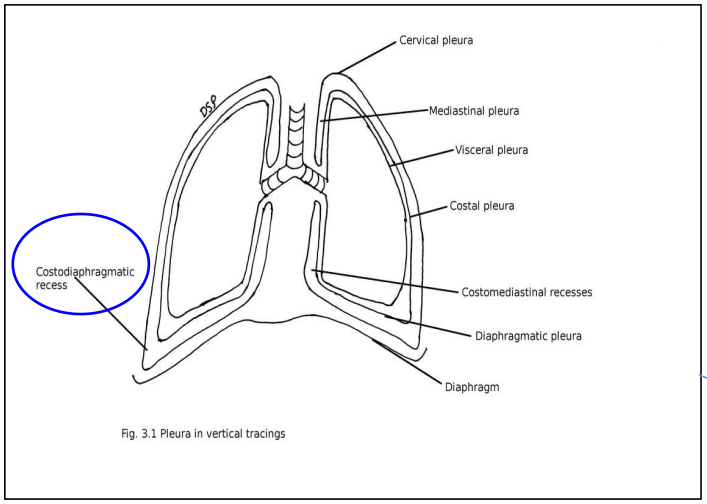
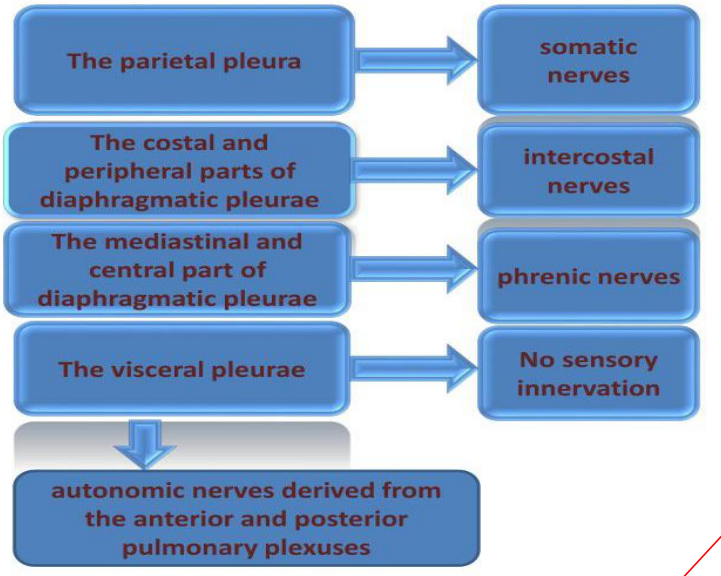


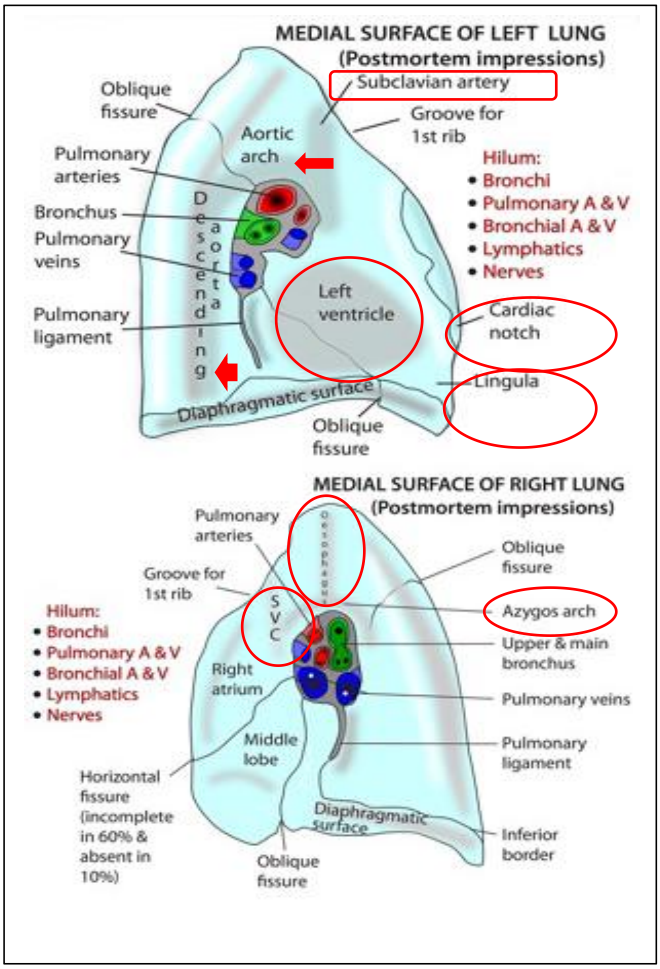
Fig. 3.1 Pleura in vertical tracings

Costodiaphragmatic recess
potential space in the pleural cavity, at the posterior-most tips of the cavity, located at the junction of the costal pleura and diaphragmatic pleura (in the **costophrenic** angle).

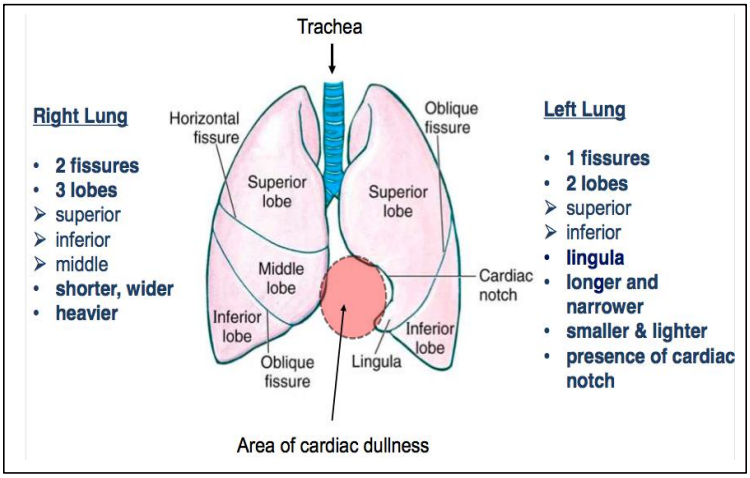
⭐ Pleura-Innervation

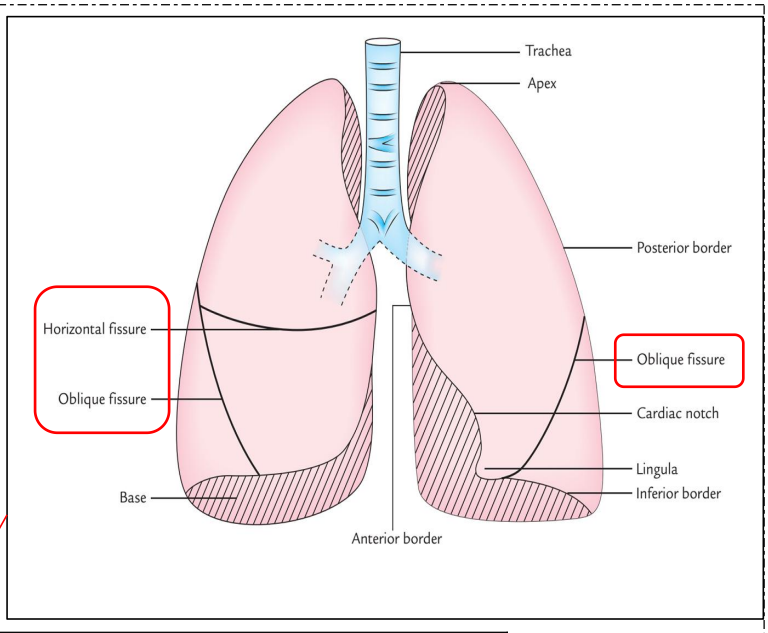


⭐ Lungs



Impressions of Rt lung	Impressions of Lt Lung
▫Azygos Arch ▫SVC ▫Oesophagus ,Brachice phalic,IVC ▫Less apparent than in the Lt lung :Cardiac	▫Heart (cardiac) ▫Descending aorta ▫Subclavian a ▫Arch of the aorta





☆ Fissures and Lobes

	Fissures	Lobes
Rt lung	**2 :** **Oblique ➡** **Post: b/w sup and inf** **Ant(inf) : b/w middle and inf** **Horizontal ➡b/w the sup and middle**	**3 :** **Superior▸** the largest lobe of the right lung. It extends from the apex of the lung down to the horizontal and oblique fissures **Middle ▸** the smallest lobe of the right lung, located b/w the horizontal and oblique fissures. Wedged b/w the sup and inf lobes anteriorly **Inferior ▸** It lies beneath the oblique fissure
Lt lung	**1:** **Oblique**	**2:** **Superior ▸ Mostly anteriorly** **Inferior ▸ Mostly posteriorly** **Cx : Lung auscultations**

☆ Bronchopulmonary segments

✔Subdivisions of a lung lobes .
✔Supplied by *segmental (3°) bronchi* .
✔*Structurally and functionally indepenent units of lung lobes* , they are surrounded by CT.
✔Each has a pyramidal shape ,its apex toward the hilum .
✔Segmental bronchus is accompanied by a branch of pul a whereas the tributaries of pul veins run in the CT b/w adjacent bronchopul segs ➡each seg has its own lymphatic vessels and AN supply .

- Pulmonary lobule:
  - Wrapped in elastic C.T., each pulmonary lobule contains a lymphatic vessel, an arteriole, a venule and a branch of terminal bronchiole.

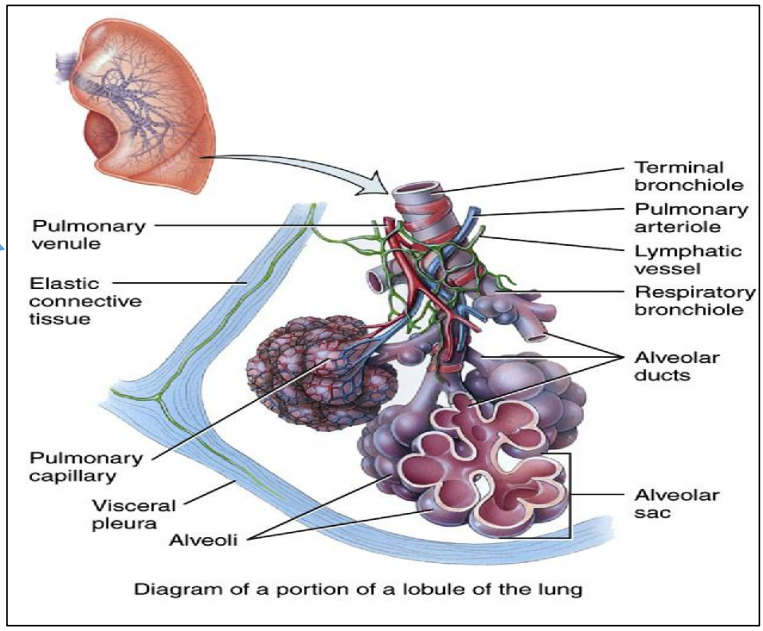


Diagram of a portion of a lobule of the lung

⭐ Vasculature

- **Each Lung has :**

  Pul a ➡arise from the pul trunk at the level of sternal angle , carry the low-oxygen blood to the lungs for Oxygenation (Rt and Lt)

  2 pul vv (sup,inf) ➡carry the oxygen-rich blood from corresponding lobes of each lung to the LA .

  Middle lobe v is a tributary of the Rt Sup pul v .

- **Systemic Circ :**

(1) Bronchial aa ➡provide oxygenated blood to lung tissue

a) **Arise from aorta and enter the lungs at the hilum**

b) **Supply all lung tissue except the ALVEOLI**

(2) Bronchial vv ➡Azygos&Hemiazygos vv

Alveoli :
Pul a ➡alveolar capillaries➡Pul vv

⭐ **Lymphatic Drainage**