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Lecture title: Respiratory System /The lungs

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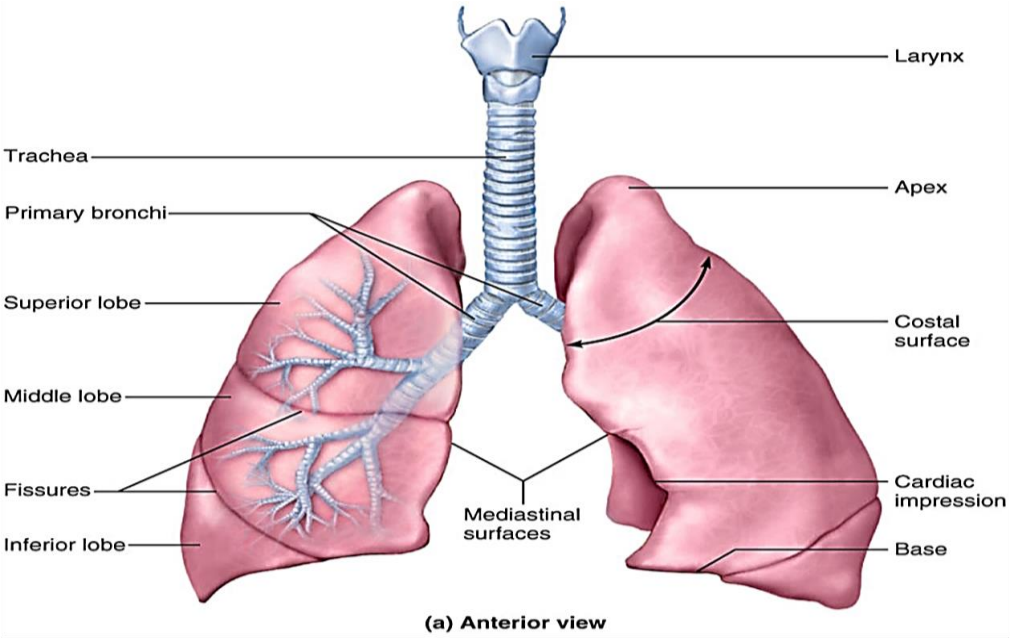
The lungs:

The lung has cone-shape with apex extend rostrally in precardiac mediastinum and oblique base caudally, near the diaphragm. The lung has three borders; round dorsal border near the vertebral bodies, thin ventral border with large cardiac notch and basilar (diaphragmatic) border. **The lung has three surfaces;** lateral (costal), medial (mediastinal) and basilar (diaphragmatic) surfaces.



(a) Anterior view

Fig. 4.13 Thoracic viscera *in situ*, in left lateral view. The ribs have been removed close to their costochondral junctions except for three important 'marker' ribs (1, 3 and 6) and those parts that do not enclose the left pleural cavity.

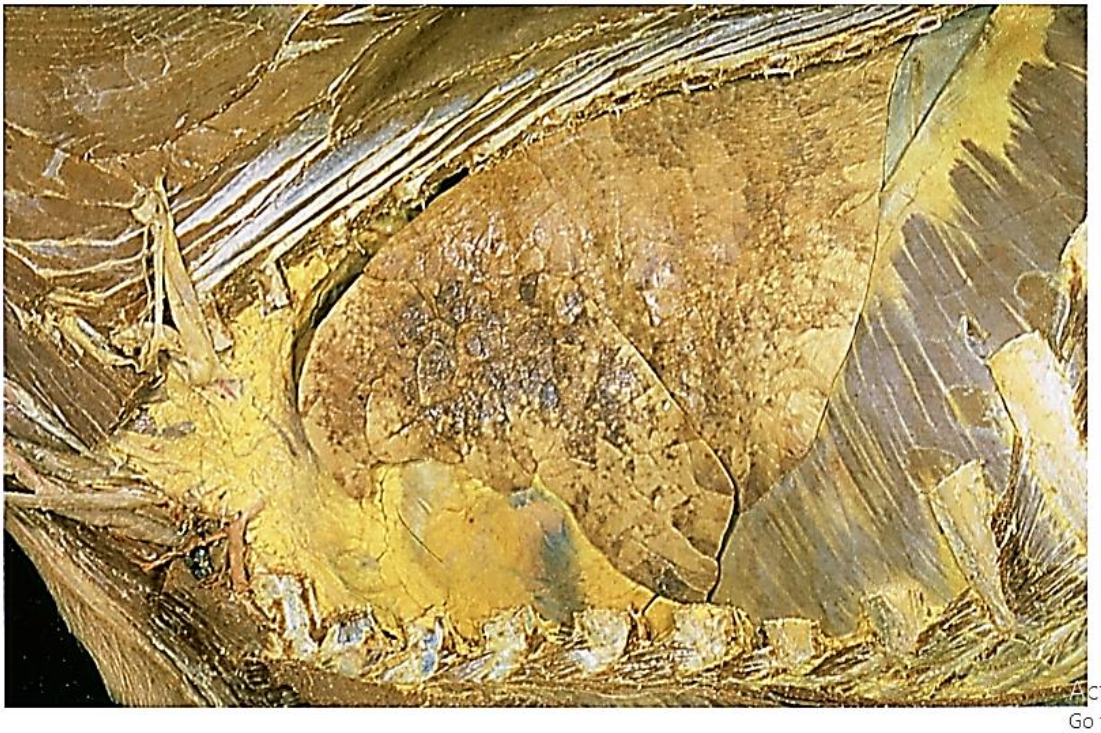
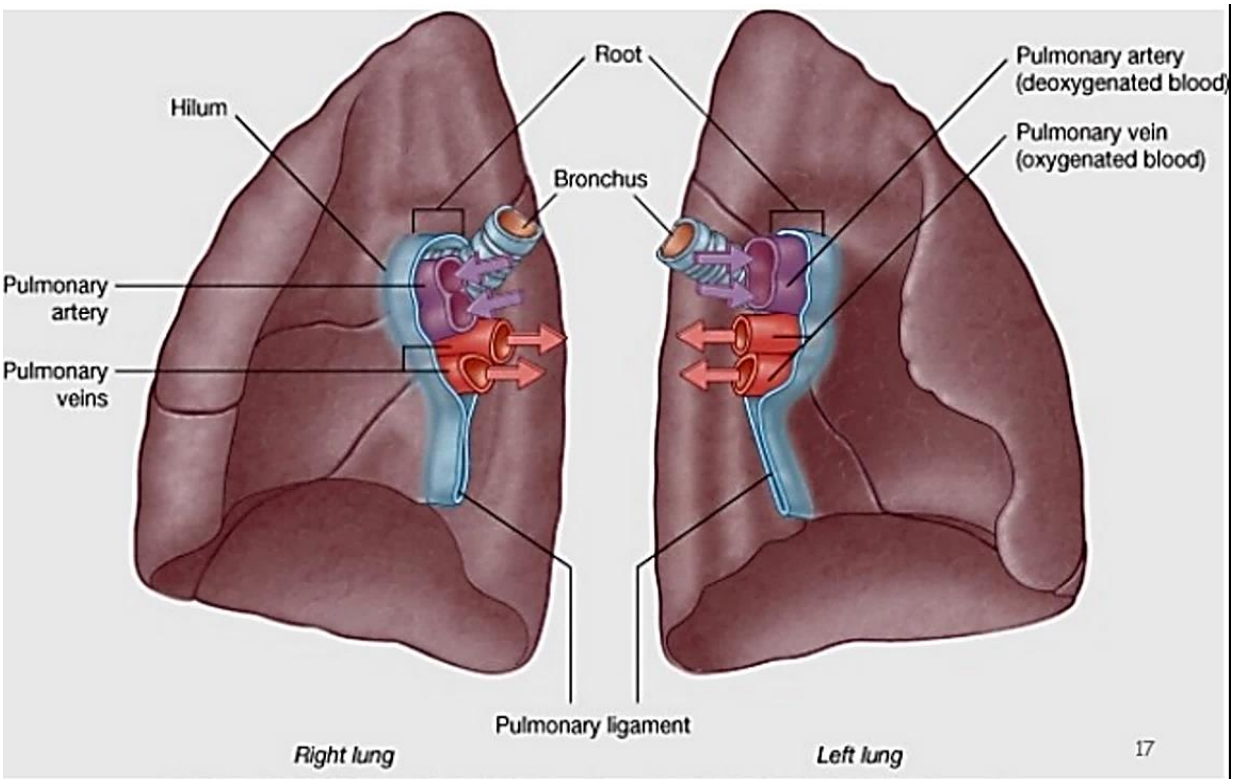
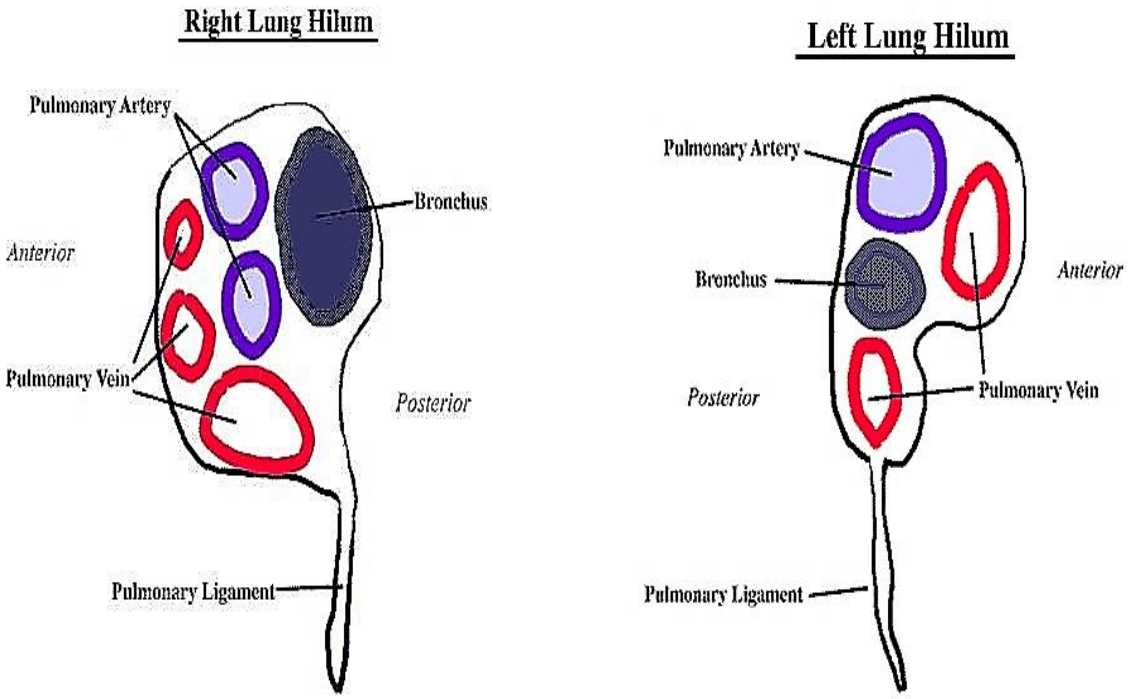


Fig. 4.14 The left lung; lobation, lobulation and topography. Removal of ribs 1, 3 and 6 shows the lung and the cranial mediastinum more clearly.

Pulmonary hilus (hilum of the lung): is the area on the medial surface of the lung from where the principal bronchus, pulmonary artery, pulmonary vein, bronchial artery, branches of vagus nerve and lymphatic vessels pass.

Each lung covered by pulmonary pleura and invaginated in the pleural sac, so it is free to move since it is anchored only by its root and the pulmonary ligament.





-Pulmonary ligament: is the connecting pleura between the pulmonary pleurae from left and right caudal lobes of the lungs to the mediastinal pleura.

-Blood vessels of the lung:

1=Functional blood vessels:

Pulmonary artery and pulmonary vein.

2=Nutritional blood vessels:

bronchoesophageal artery and bronchoesophageal vein .

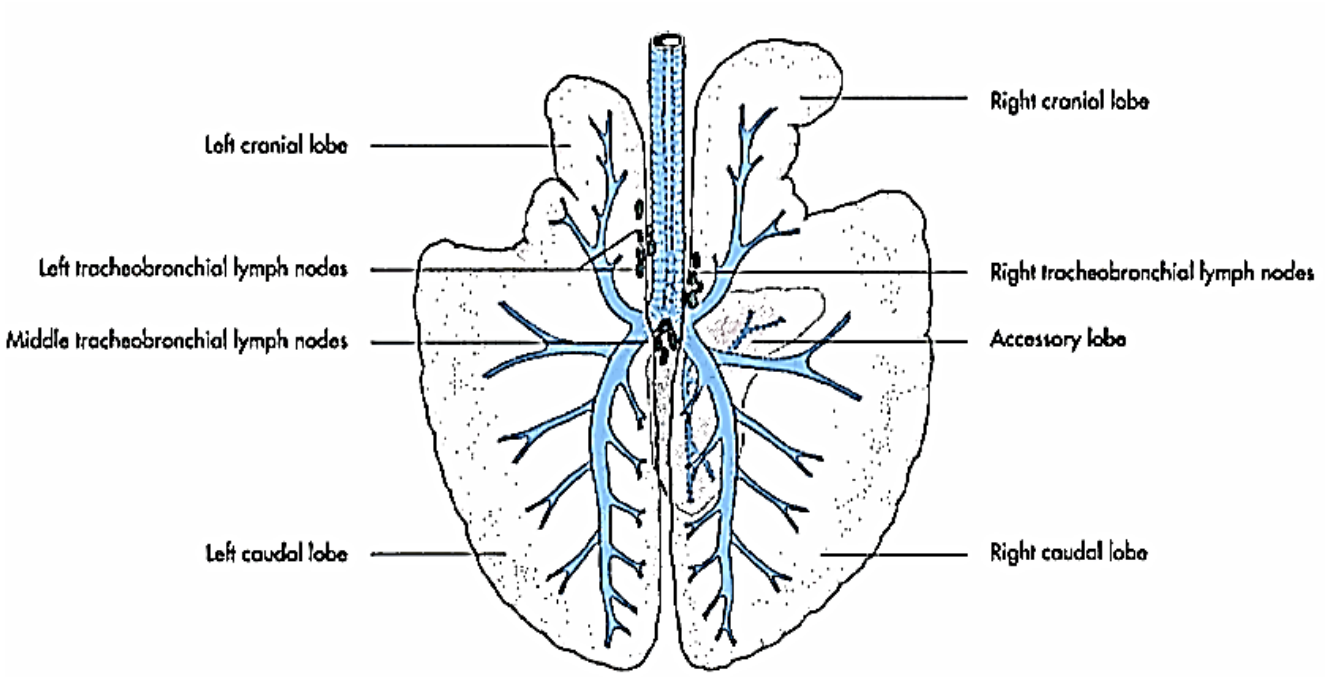
-Lung lobation:

The right lung is bigger than the left lung.

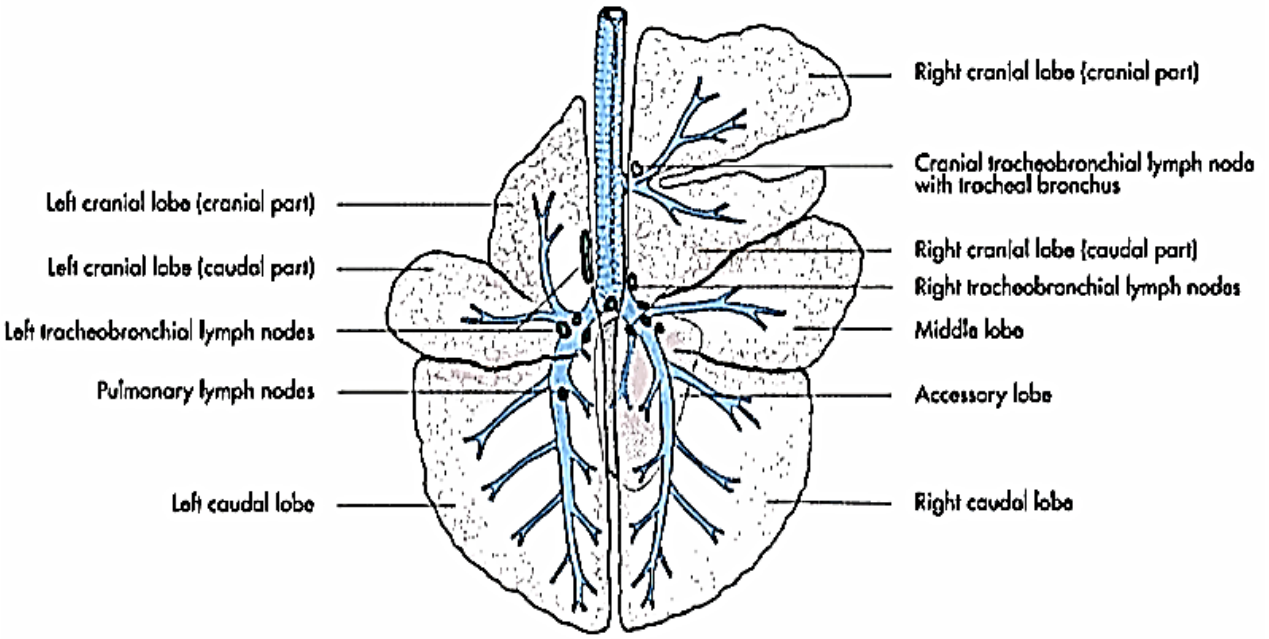
-Interlobar fissures are very deep in lungs of dog and shallow in lungs of ruminants and horse.

-Comparison of the lung (species variation of the lung):

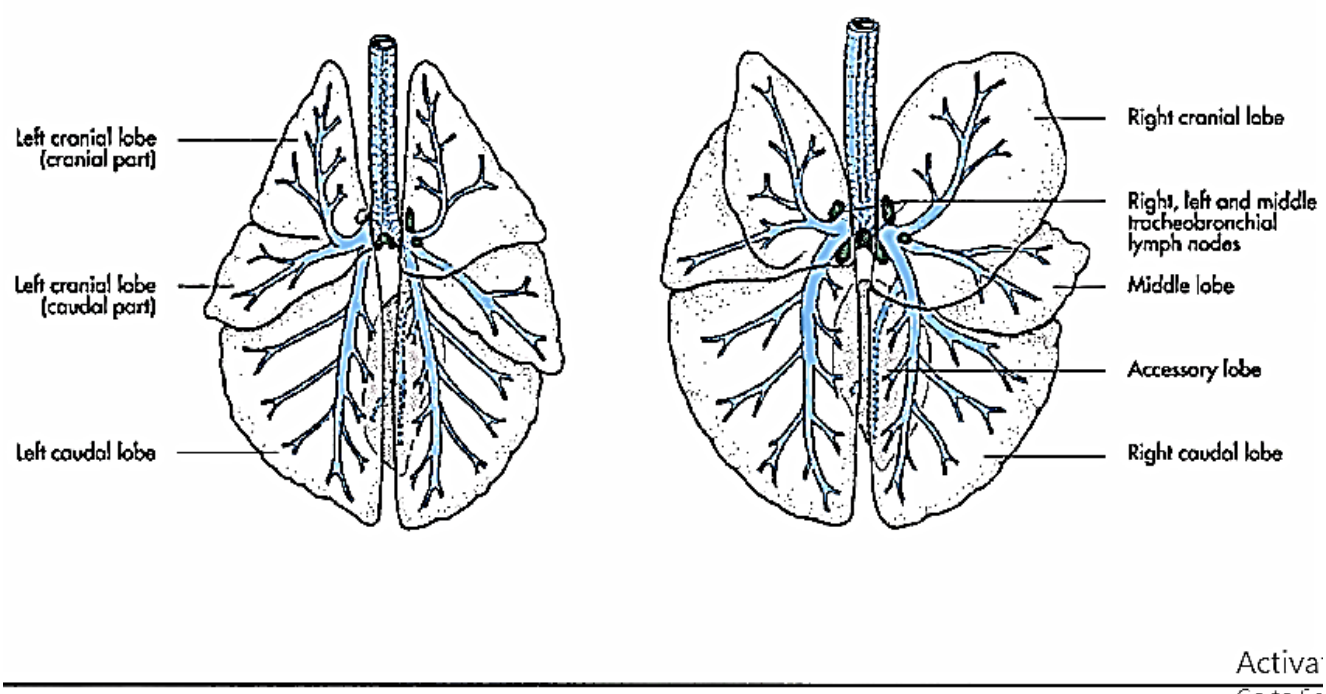
Animals	Left lung	Right lung
Dog	Divided cranial (apical) lobe Caudal (diaphragmatic) lobe	Cranial (apical) lobe Middle lobe Accessory lobe Caudal (diaphragmatic) lobe
Horse	Cranial (apical) lobe Caudal (diaphragmatic) lobe	Cranial (apical) lobe Accessory lobe Caudal (diaphragmatic) lobe
Ruminants	Divided cranial (apical) lobe Caudal (diaphragmatic) lobe	Divided cranial (apical) lobe Middle lobe Accessory lobe Caudal (diaphragmatic) lobe



8-29. Lung lobes, bronchial tree and lymph nodes of the horse (schematic, dorsal aspect); after Ghetie, 1958.



I. Lung lobes, bronchial tree and lymph nodes of the ox (schematic, dorsal aspect); after Ghetie, 1958.



3-26. Lung lobes, bronchial tree and lymph nodes of the cat (left) and the dog (right) (schematic, dorsal aspect); after Ghetie, 1958.