



كلية المستقبل الجامعة
قسم تقنيات التخدير

Anatomy

المرحلة الاولى

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**Lecture Five : The Thoracic
cavity**

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Chapter II

Part2

The Thoracic Cavity

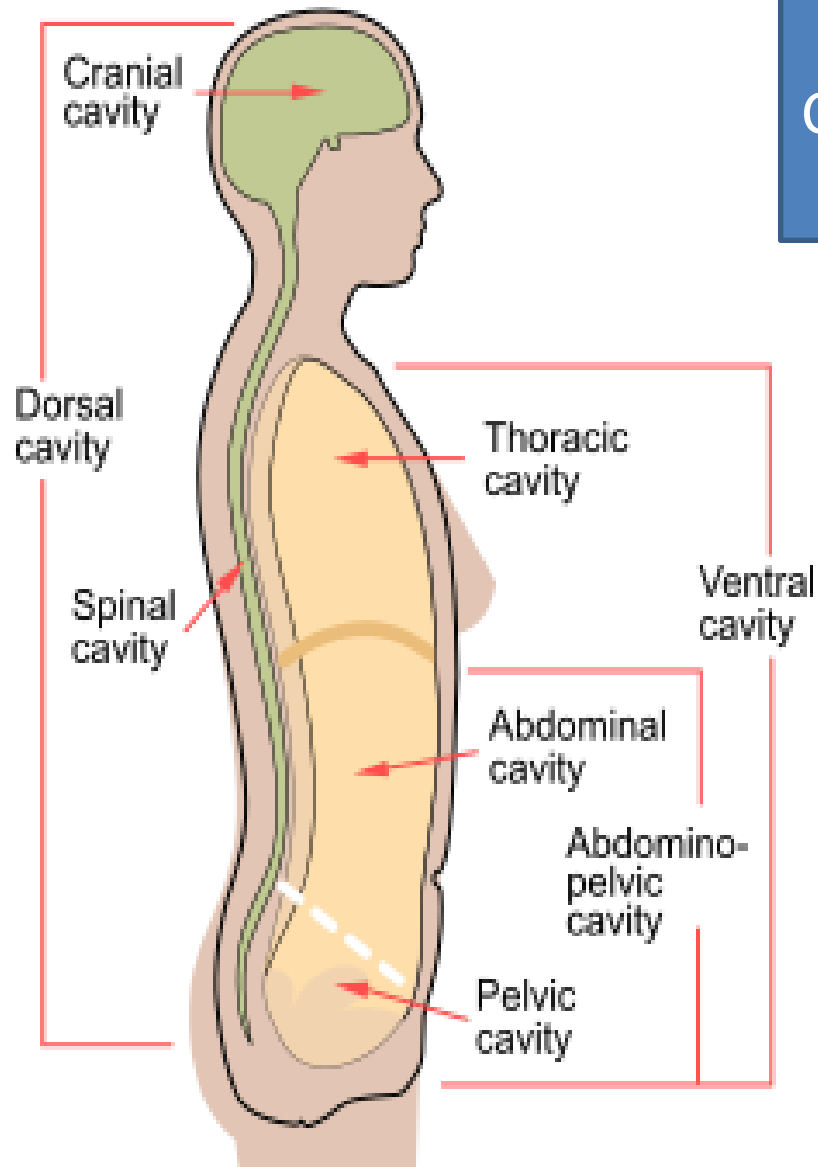
The Thoracic Cavity

Thoracic Cavity

The chest cavity is bounded by the chest wall and below by the **diaphragm**. It extends upward into the **root of the neck, shortly** above the clavicle on each side.

The chest cavity can be divided into a **median partition**, called the **mediastinum**, and the **laterally placed pleurae and lungs.**(figure 2.1b)

Figure 2.1b
Cavities of the body



The Thoracic Cavity

The mediastinum is the space between the lungs in the thoracic cavity, it extends from the **root of the neck** superiorly to the **diaphragm** inferiorly. It extends anteriorly to the **sternum** and posteriorly to the **vertebral column** (figure 2.2b). The mediastinum is divided into **superior** and **inferior mediastina** .

The superior mediastinum contains (a) Thymus, (b) large veins, (c) large arteries, (d) trachea, (e) esophagus and thoracic duct, and (f) sympathetic trunks.

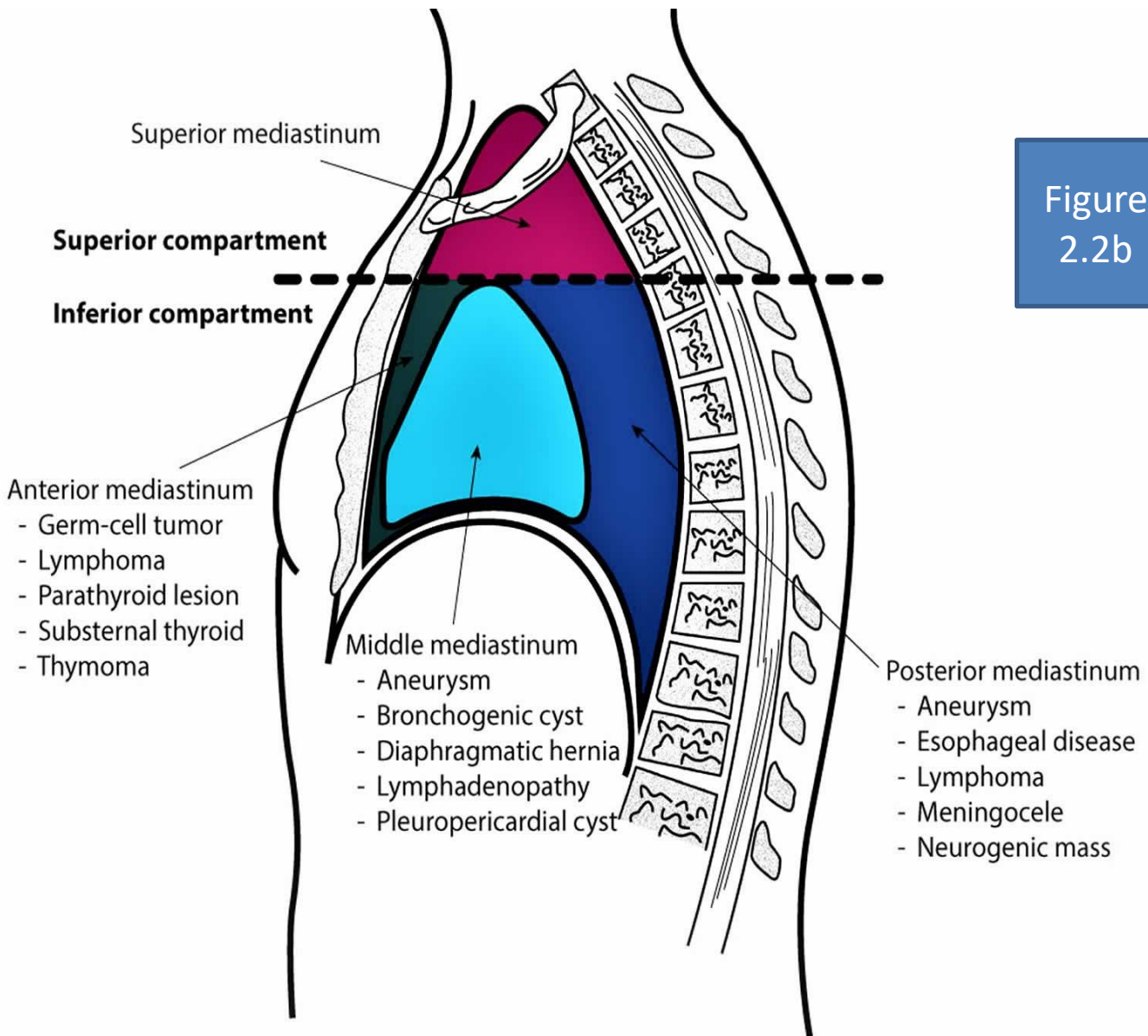


Figure 2.2b

Mediastinum and heart position

- **Mediastinum** is the space between both lungs inside the chest cavity

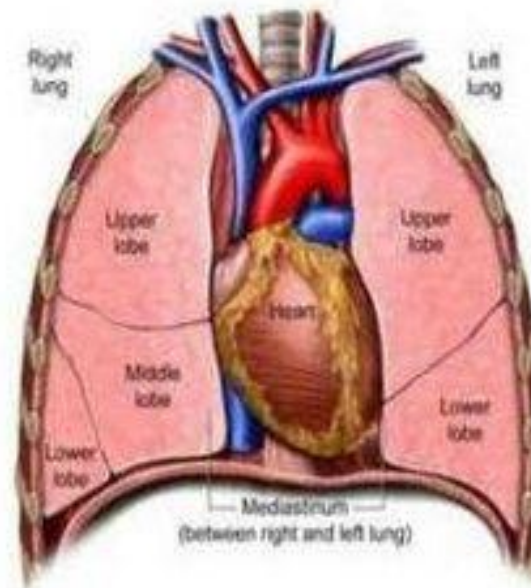


Figure
2.3b

The Thoracic Cavity

The inferior mediastinum is further subdivided into the **middle mediastinum**, which consists of the pericardium and heart; the **anterior mediastinum**, which is a space between the pericardium and the sternum; and the **posterior mediastinum**, which lies between the pericardium and the vertebral column. (figure 2.3b)

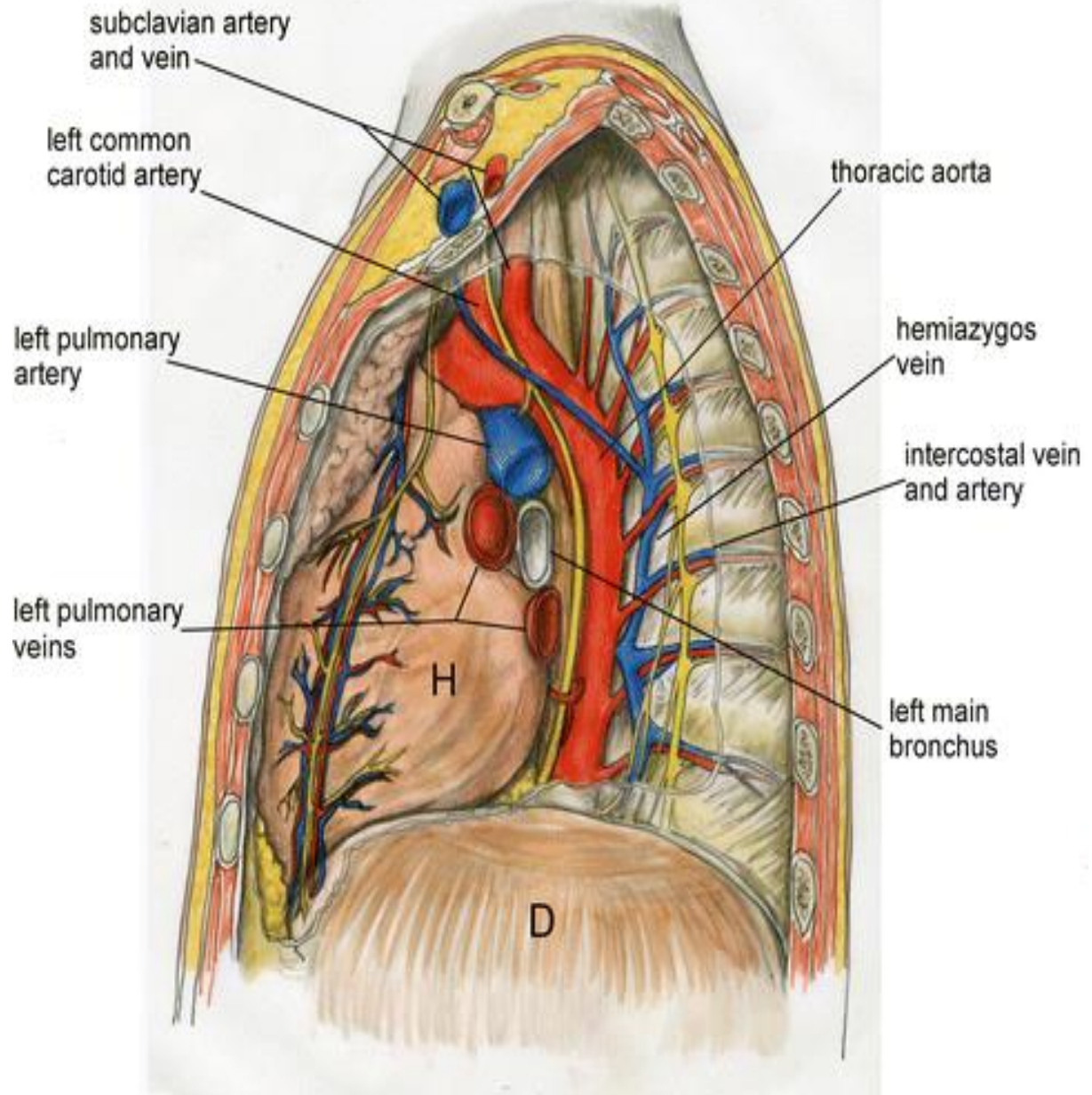


Figure 2.3b

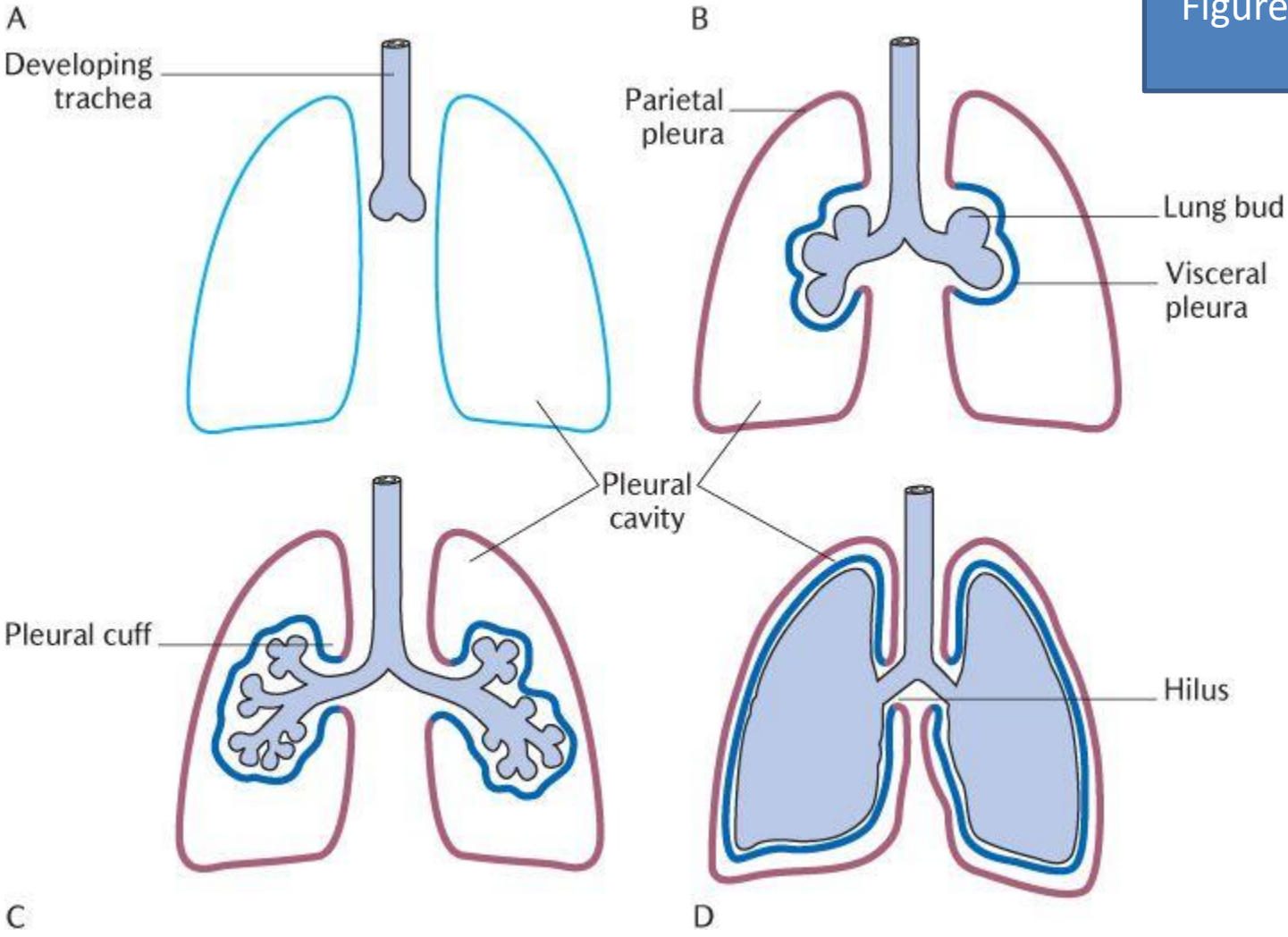
The Thoracic Cavity

Pleurae (figure 2.4, and 2.5)

Each pleura has two parts:

- 1. parietal layer**, which lines the thoracic wall, covers the thoracic surface of the diaphragm and the lateral aspect of the mediastinum
- 2. Visceral layer**, which completely covers the outer surfaces of the lungs and extends into the depths of the inter lobar fissures.

Figure 2.4



Layers of Pleura

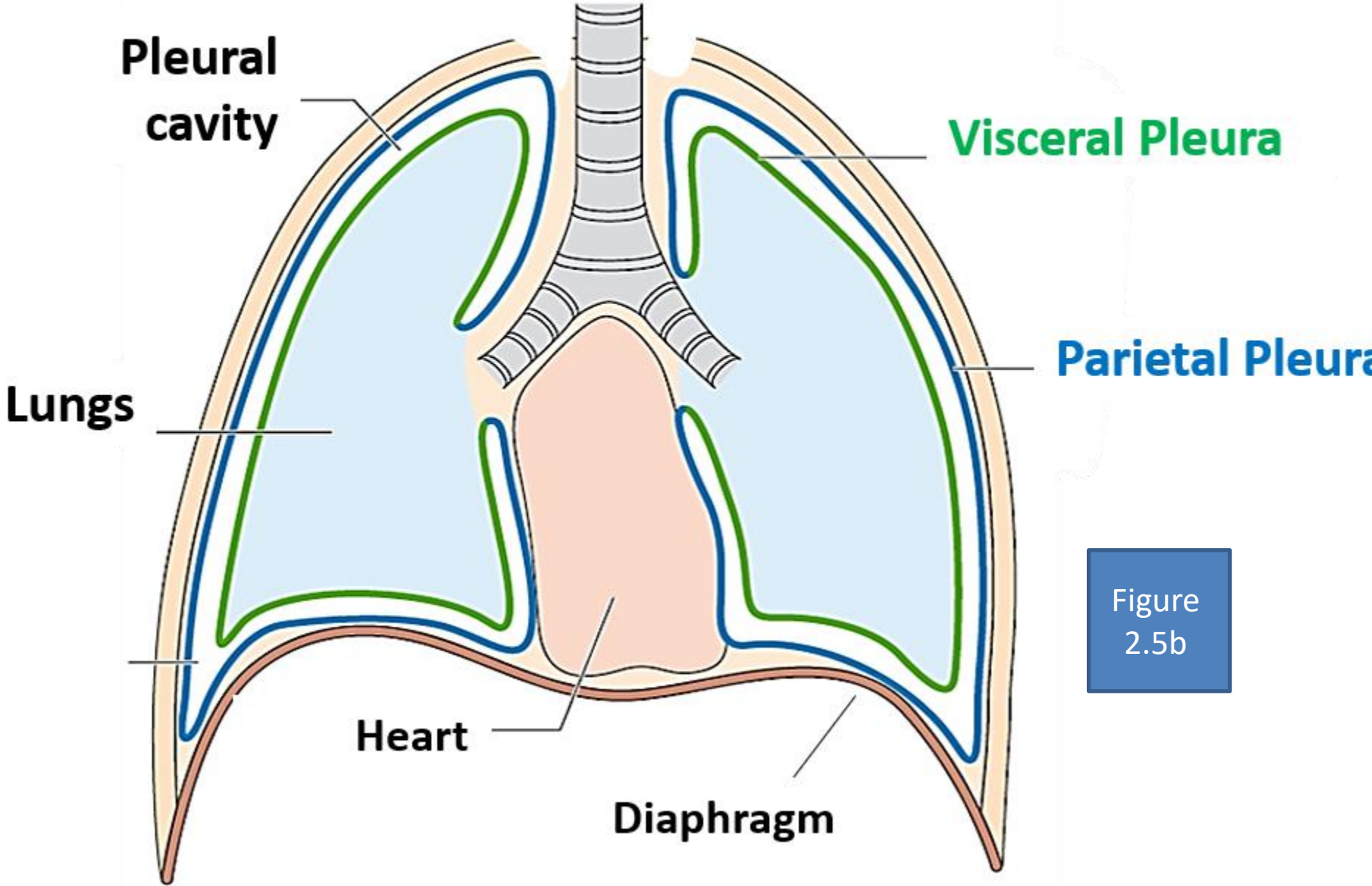


Figure 2.5b

The Thoracic Cavity

Trachea

The trachea is a cartilaginous tube. It begins in the neck as a continuation of the larynx, It descends in the midline of the neck. In the thorax, the trachea ends below at the **carina** by dividing into **right and left principal (main) bronchi** at the level of the sternal angle. (Figure 2.6b).

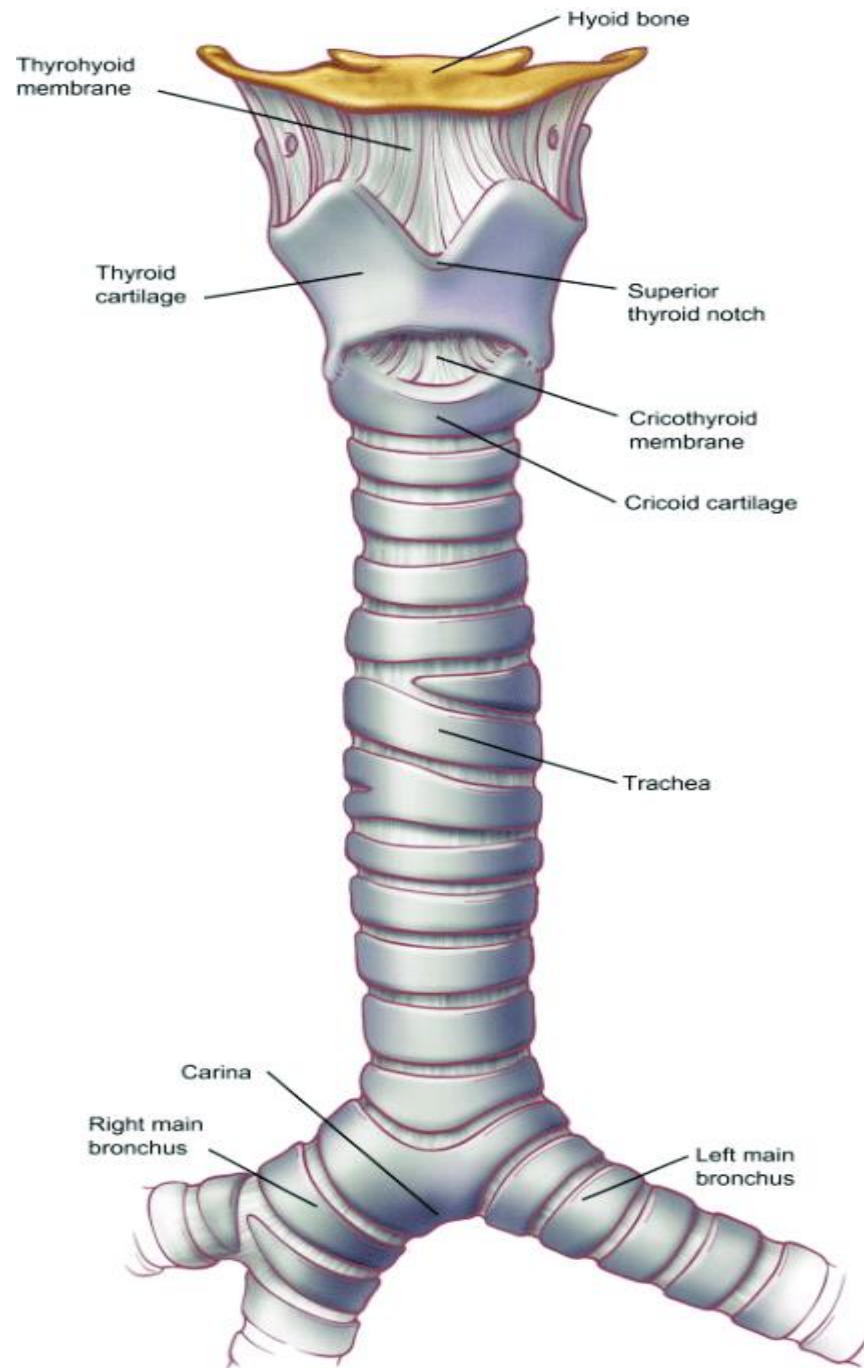


Figure 2.6b

The Thoracic Cavity

In adults, the trachea is about 11.25 cm long and 2.5 cm in diameter. The trachea is kept open by the presence of U-shaped bars (rings) of hyaline cartilage embedded in its wall. The posterior free ends of the cartilage are connected by smooth muscle, called the **trachealis muscle.(figure 2.7b)**



Sobotta Fig. 229

- ✓ Composed of C-shaped hyaline cartilages
 - Keep the lumen patent
- ✓ **Trachealis muscle** (posteriorly, between the ends of the tracheal cartilages) alters tracheal diameter

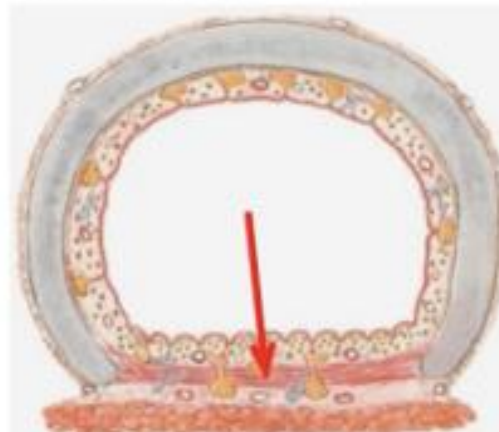


Figure 2.7b

The Thoracic Cavity

Principal (main) Bronchi

The right principal (main) bronchus is shorter, and more vertical than the left and is about 2.5 cm diameter, the principal bronchus gives off the **superior lobar bronchus before entering the hilum of the lung**. On entering the hilum, it divides into a **middle** and an **inferior lobar bronchus**.(figure 2.9b)

The Thoracic Cavity

The left principal (main) bronchus is narrower, longer, and more horizontal than the right and is about 2 in.(5 cm) long. On entering the hilum of the left lung, the principal bronchus divides into a **superior** and an **inferior lobar bronchus**.

Trachea and major bronchi of the lungs

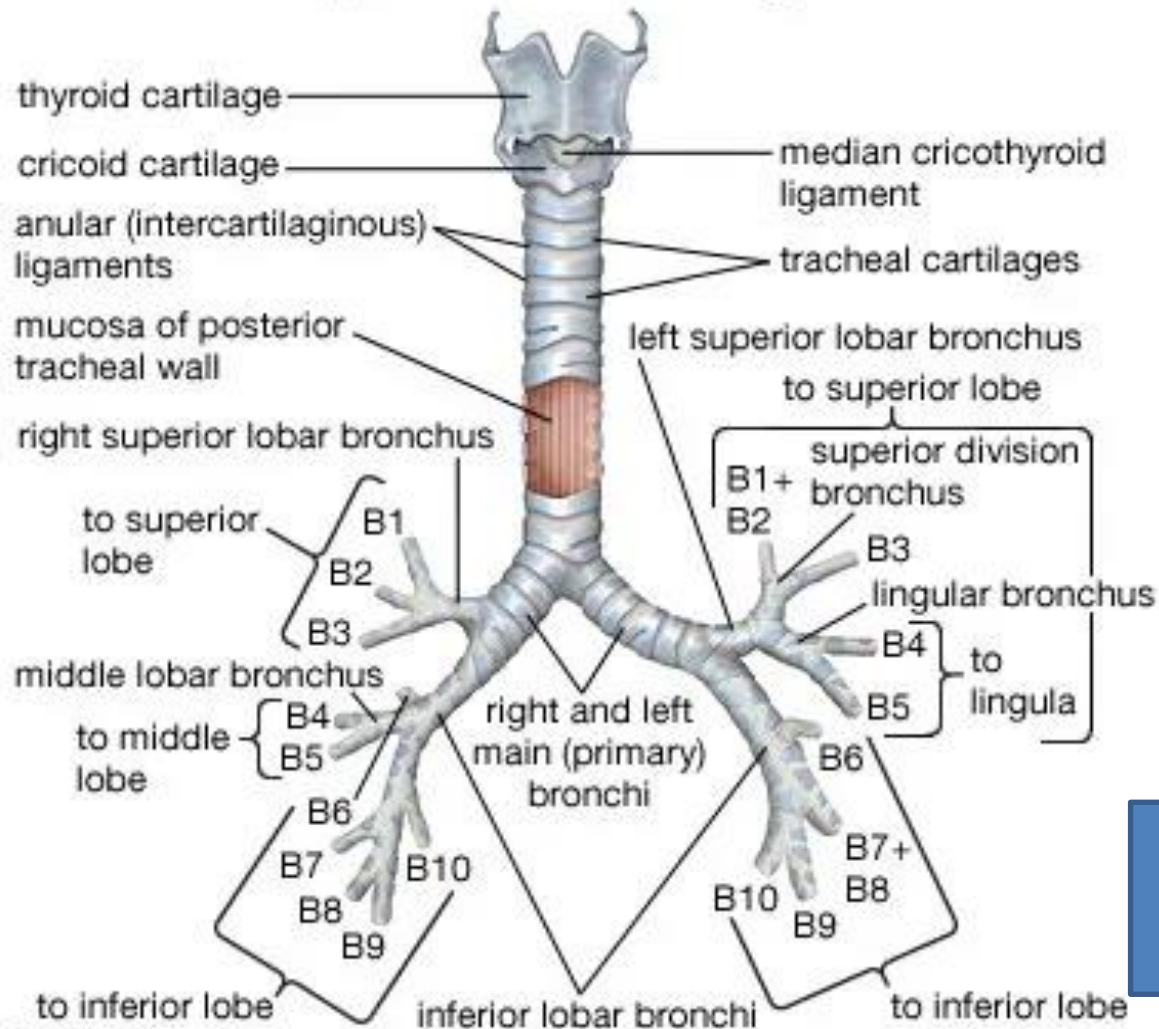


Figure 2.9b

The Thoracic Cavity

The Bronchi

The bronchi divide **dichotomously**, giving rise to several million terminal bronchioles that terminate in one or more respiratory bronchioles.

Each respiratory bronchiole divides into 2 to 11 alveolar ducts that enter the alveolar sacs. The alveoli arise from the walls of the sacs as diverticula (figure 2.10b).

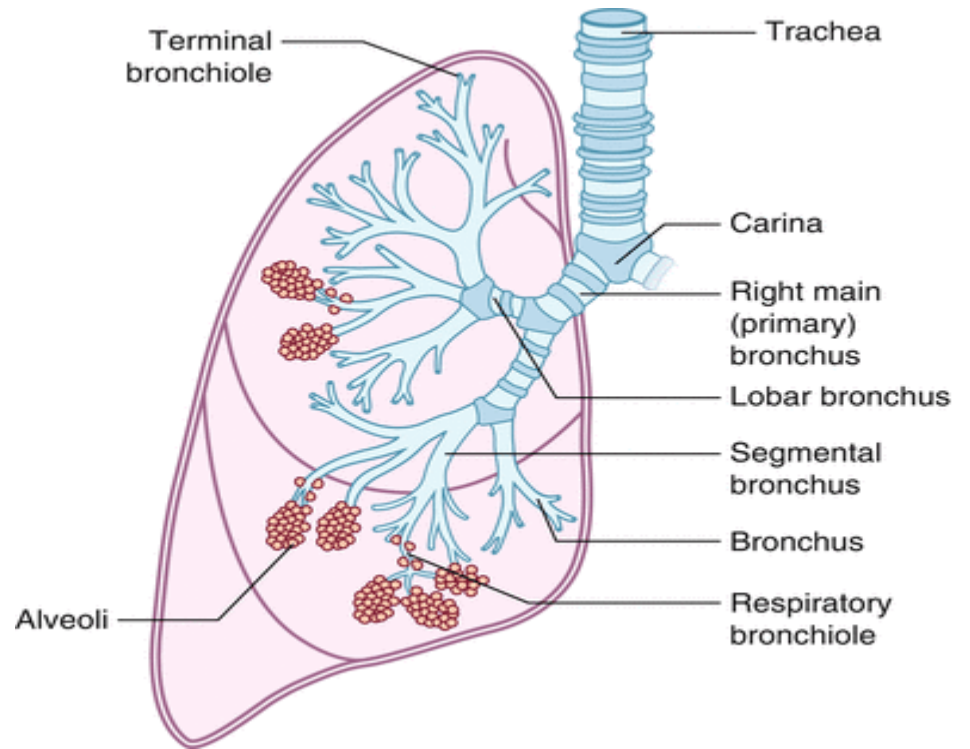
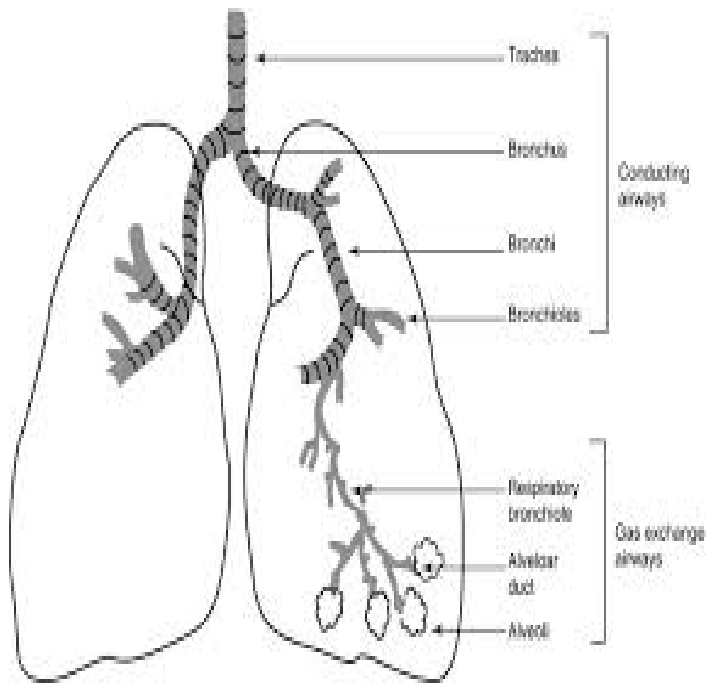


Figure 2.10b

The Thoracic Cavity

The lungs figure (2.11b)

Each lung is conical, covered with visceral pleura, and suspended free in its own pleural cavity, being attached to the mediastinum only by its root.

Right Lung

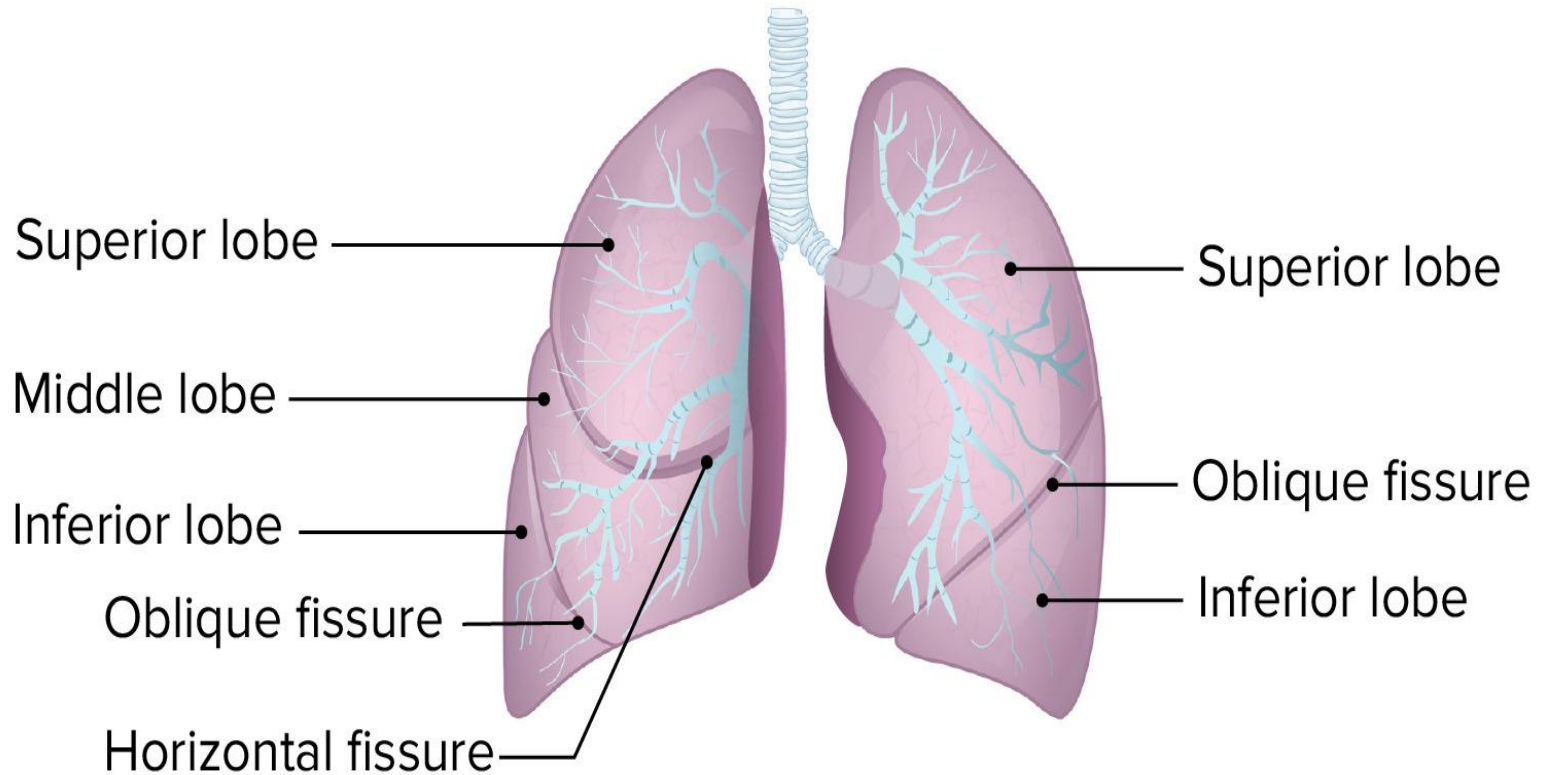
The right lung is slightly larger than the left and is divided by the **oblique and horizontal fissures** into three lobes: the **upper, middle, and lower lobes**.

The Thoracic Cavity

Left Lung

The left lung is divided by a similar oblique fissure into two lobes: the **upper** and **lower lobes** . There is no horizontal fissure in the left lung, thus a **small triangular lobe (lingula)** bounded by the horizontal and oblique fissures.

Figure 2.11b the lungs



The Thoracic Cavity

Blood Supply of the Lungs

The lungs receive their blood supply from the **bronchial arteries**, which are branches of the descending aorta. The alveoli receive deoxygenated blood from the terminal branches of the **pulmonary arteries**. The oxygenated blood leaving the alveolar capillaries drains into the tributaries of the **pulmonary veins**. Two pulmonary veins leave each lung root (Fig. 2.12b) to empty into the left atrium of the heart.

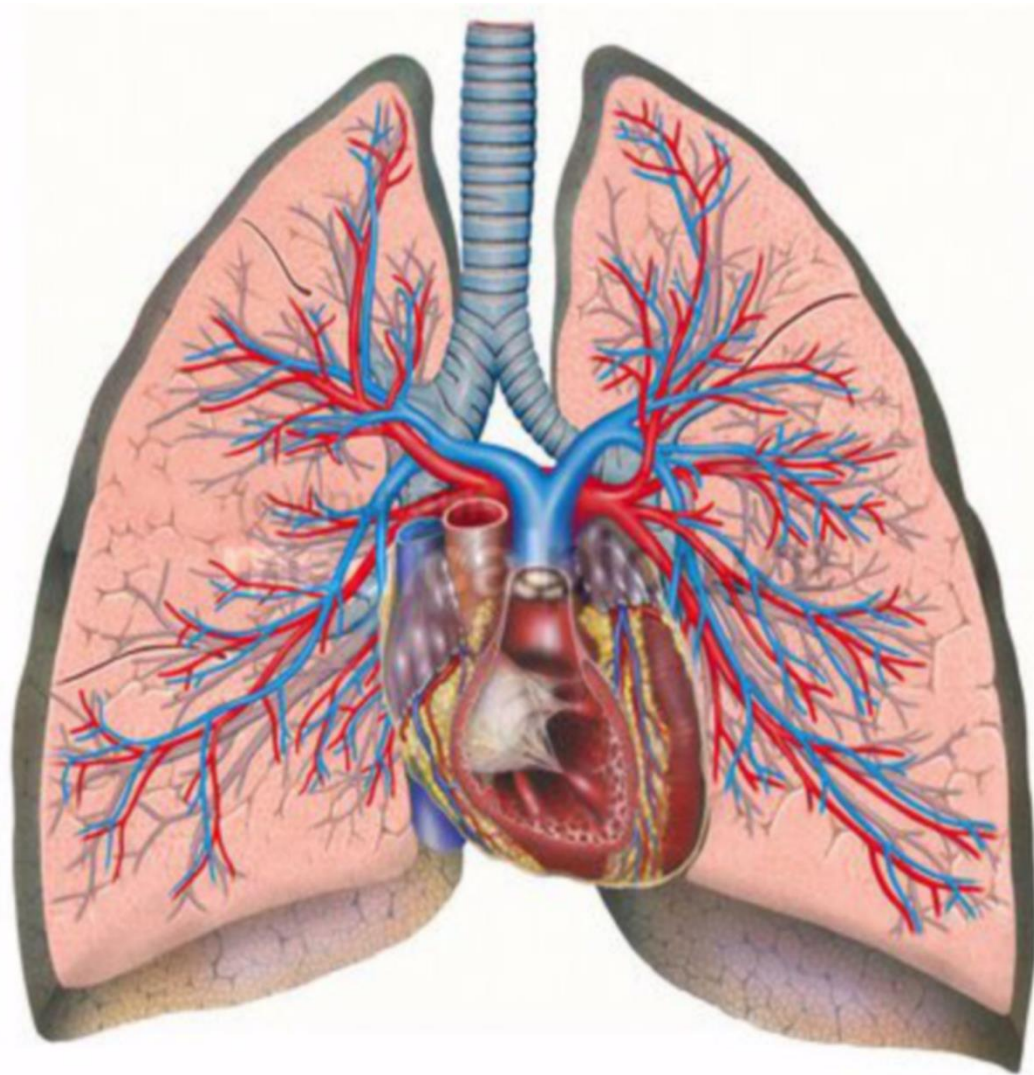



Figure
2.12b

A spiral-bound notebook with a light brown cover. The spiral binding is visible at the top. The text is printed in a bold, black, sans-serif font, centered on the page.

**THANK YOU
FOR YOUR
ATTENTION**