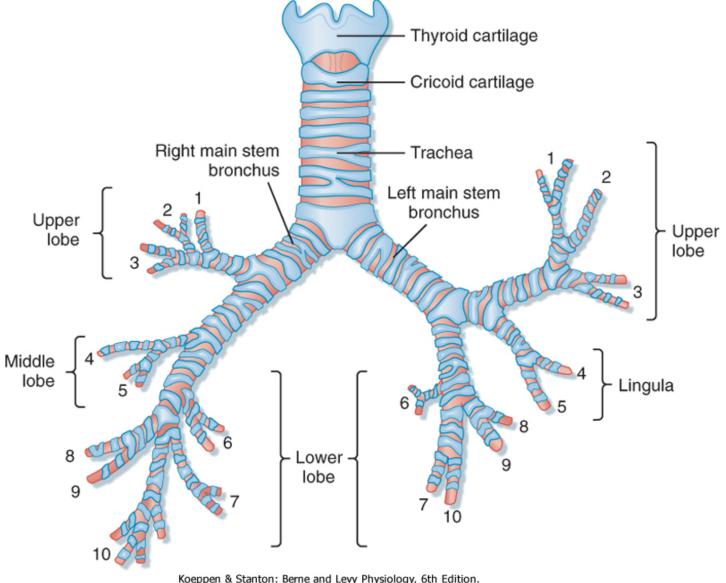


Apical Apical Posterior Upper Upper lobe Posterior lobe Superior Superior Lower Lower Anterior Lateral Posteriori lobe lobe basal basal basal Posterior Lateral 10 basal basal Right Left

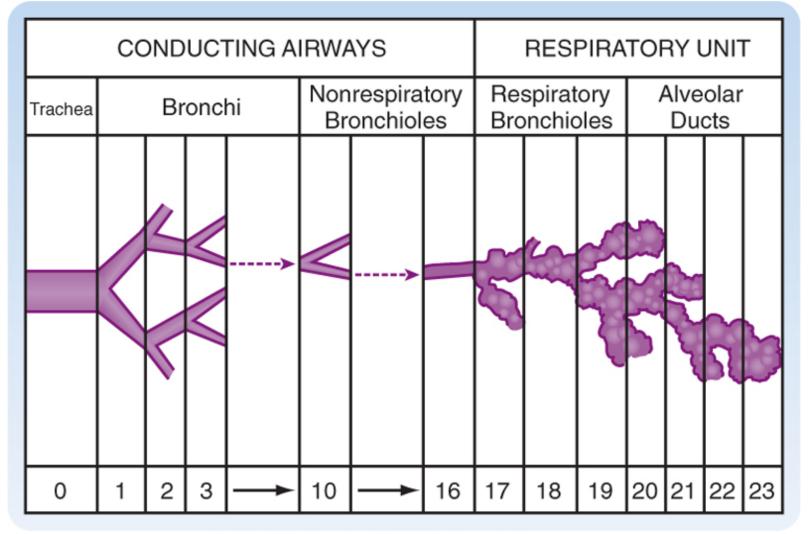
POSTERIOR VIEW
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Figure 20-2 Topography of the lung demonstrating the lobes, segments, and fissures. The fissures (or chasms) demarcate the lobes in each lung. Numbers refer to specific bronchopulmonary segments, as presented in Figure 20-3. SVC, superior vena cava.



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Figure 20-3 Bronchopulmonary segments, anterior view: 1, apical; 2, posterior; 3, anterior; 4, lateral (superior); 5, medial (inferior); 6, superior; 7, medial basal; 8, anterior basal; 9, lateral basal; 10, posterior basal. The numbers are the same as in Figure 20-2.



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Figure 20-4 Conducting airways and alveolar units of the lung. The relative size of the alveolar unit is greatly enlarged. Numbers at the bottom indicate the approximate number of generations from trachea to alveoli, which may vary from as few as 10 to as many as 27. (From Weibel ER: Morphometry of the Human Lung. Heidelberg, Germany, Springer-Verlag, 1963.)

The trachea and the bronchial 'tree' conduct air down to the respiratory surfaces.

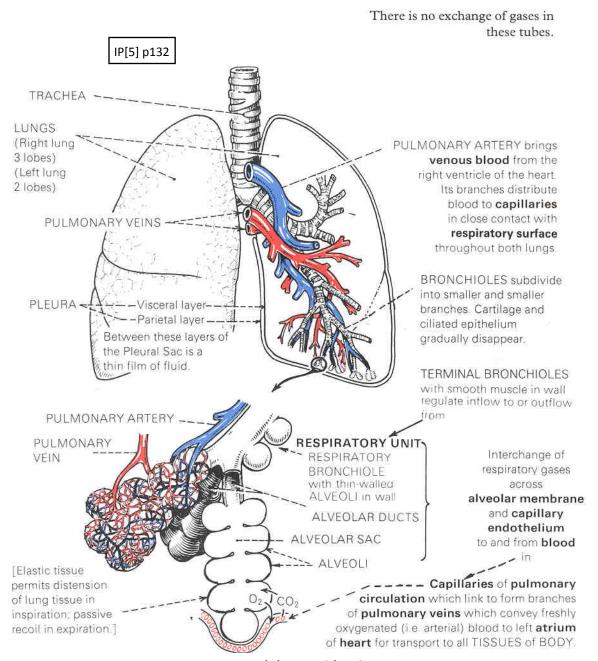


Figure 18.4 Branching of airways from the trachea and lobes of the lungs. Tortor The bronchial tree consists of airways that begin at the trachea and end at the terminal bronchioles. BRANCHING OF BRONCHIAL TREE: Larynx Trachea Trachea Primary bronchi Apex of lung Pleural membrane: Parietal pleura Secondary bronchi Visceral pleura Pleural cavity -Tertiary bronchi Bronchioles Terminal bronchioles Right primary bronchus Left primary bronchus Right superior lobe Left superior lobe Horizontal fissure Secondary bronchus Right middle lobe Tertiary bronchus Bronchiole Right oblique fissure Terminal bronchiole Right inferior lobe Left oblique fissure Left inferior lobe Cardiac notch Diaphragm Base of lung

Anterior view

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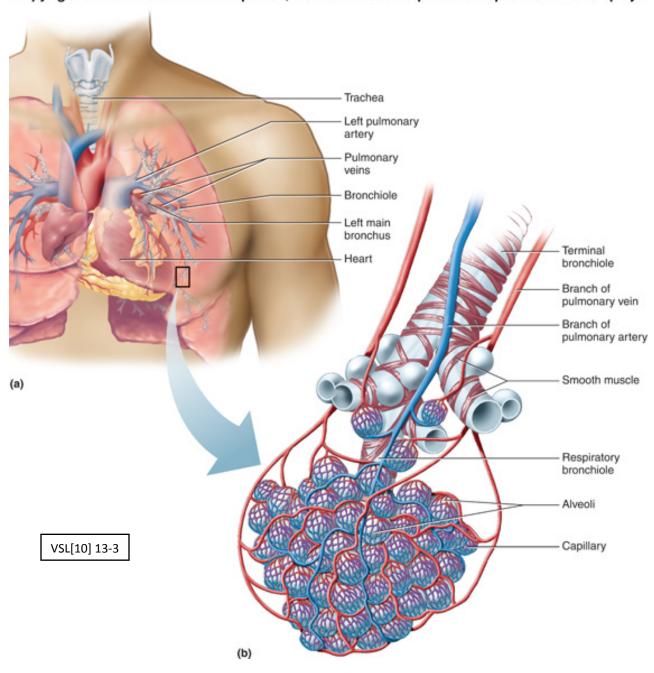


Figure 18.6 Structure of an alveolus. The exchange of respiratory gases occurs by diffusion across the respiratory membrane. Tortor Surfactant-secreting cell Respiratory membrane Alveolus Diffusion of O2 Diffusion of CO2 Alveolar cell Blood plasma Capillary endothelial cell Alveolar Capillary basement macrophage membrane Connective tissue Alveolus Epithelial basement Red blood cell membrane in pulmonary Alveolar cell capillary Alveolar fluid

EN 585.405 '13 Respiration I 8

(a) Section through an alveolus

showing its cellular components

with surfactant

(b) Details of respiratory membrane

END

Video 2, Module 11