

BMD 330 and 335: Human Physiology
Chapter 17 Objectives

The Respiratory System: Pulmonary Ventilation

1. Compare internal respiration to external respiration, and describe the processes occurring in each.
2. Describe the major structures of the respiratory system, and list the functions of each.
 - a. Compare the conducting and respiratory zones.
 - b. Describe the thoracic cavity.
3. Describe the anatomy of the respiratory membrane, and explain how the structure facilitates the diffusion of gases.
4. Describe the anatomy of the alveoli. Explain the roles of type I cells, type II cells, and alveolar macrophages in respiratory function.
5. Explain the function of pulmonary surfactant.
6. Describe the mechanics of breathing.
 - a. Name the muscles of respiration.
 - b. List the different pulmonary pressures and explain their roles in ventilation.
 - c. Explain how Boyle's Law applies to ventilation.
7. Describe the roles of lung compliance and airway resistance in ventilation.
8. Describe the use of spirometry to measure lung volumes/capacities.
9. List the different lung volumes and capacities. Explain the clinical applications of lung volumes, forced vital capacity, and forced expiratory volume.
 - a. Define the anatomical dead space
 - b. Compare minute ventilation to alveolar ventilation