

Chapter 25 Respiratory System

Anatomy and Physiology Text and Laboratory Workbook; Davenport, Stephen

Functions of the Respiratory System

1. What are five functions of the respiratory system?

Organization

2. What are the two divisions of the respiratory system?
3. What are the components of the upper respiratory system? What is their general function?
4. What are the components of the lower respiratory system?
5. What can the respiratory tract be divided into? What does each division consist of?

Respiratory Mucosa

6. What is the respiratory mucosa consist of?

Respiratory Epithelium

7. Where is pseudostratified ciliated columnar epithelium found?
8. Where is stratified squamous epithelium found?
9. Where is cuboidal (ciliated) epithelium found?
10. Where is simple squamous epithelium found?

Respiratory Defense System

11. What is the respiratory defense system? What is the function of goblet cells and cilia? What is the mucus escalator? What happens to the goblet cells and the ciliated epithelium at the alveolar level? How are the alveoli defended?

Respiratory Physiology

12. What are the two divisions of respiratory system? What does external respiration include? What does internal respiration include?
13. What are four integrated steps of external respiration? What are hypoxia and anoxia?

Pulmonary Ventilation

14. Define pulmonary ventilation. What is its primary function?

Boyle's Law

15. What happens to a gas when its volume is decreased or increased?

Pressure and Airflow

16. What two events make up a single respiratory cycle? What mechanism allows the visceral and parietal pleurae to "stick" together?

17. What happens to the pressure in the thorax when the diaphragm contracts? What happens to the thoracic pressure when the diaphragm relaxes?

Intrapulmonary Pressure

18. Define intrapulmonary pressure. What happens when intrapulmonary pressure is less than atmospheric pressure? What happens when intrapulmonary pressure is equal to atmospheric pressure?

Respiratory Cycle

19. What is a respiratory cycle? When does inhalation begin? When does expiration begin?

Respiratory Muscles

20. What is the most important muscle of inhalation? What muscle elevates the ribs?
21. How is a passive exhalation accomplished? How is an active exhalation accomplished?

Respiratory Rates and Minute Volume

22. What is the normal respiratory range?
23. How is the respiratory minute volume calculated? What is the significance of the FEV1?

Gas Exchange at the Respiratory Membrane

24. What is Dalton's law? What is the partial pressure of a gas?

Henry's Law

25. What is Henry's law? What determines the actual amount of a gas in solution at a given partial pressure and temperature?

Diffusion at the Respiratory Membrane

26. What are five features which make diffusion efficient at the respiratory membrane?
27. Describe the differences in the partial pressures of oxygen and carbon dioxide between the alveoli and cells.

Gas Pickup and Delivery

28. Do carbon dioxide and oxygen dissolve well in blood plasma? What is the function of the red blood cells? What are two thing important about the reactions?

Oxygen Transport

29. How is oxygen transported?

Hemoglobin Saturation

30. What does saturation of hemoglobin mean? What are four factors which affect saturation?