

Unit Objectives:

- Describe the structure and function of the cardiovascular system
- Describe the structure and function of the lymphatic system and immunity
- Describe the structure and function of the respiratory system

Relevant Topics in Textbook:

Chapter 12 Blood

Chapter 13 Cardiovascular System

Chapter 14 Lymphatic System and Immunity

Chapter 16 Respiratory System

Lecture Exam Review Questions: Lectures 19 and 20

Defenses & Disease

1. What is the name of the virus that causes the seasonal flu?
2. Why do we repeatedly get the flu? (i.e. why do we need to get a flu shot annually?)
 - a. We often describe Influenza A as H1N1 or H3N2, what do the H's and N's represent?
 - H =
 - N =
3. Describe the mechanism of disease/illness prevention using a vaccine. (i.e. what cells are vaccines attempting to stimulate??)
4. How are traditional vaccines produced? Describe the basic process.
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5. What is the difference between an epidemic and a pandemic?

- Epidemic =
- Pandemic =

6. Explain how HIV infection disrupts the immune system leading to AIDS.

- - a. What is the normal role of our T Helper cells?

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7. Describe the potential cause and consequence of autoimmune disease.

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- a. Is our immune system supposed to target “self” cells?

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8. What are HLA's?

- HLA =
 - a. Explain tissue matching for organ transplantation and what the mechanism of rejection by our immune system would be.
 - Organ transplantation matching –
 - Mechanism of rejection –

9. What is an allergy?

- Allegy =

Many people experience seasonal allergies that cause runny noses, sneezing, itching etc. but others can have severe allergic reactions.

- a. How can allergic reactions become life threatening?

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Ventilation and Control of Breathing

1. What structures are associated with the following parts of the respiratory system?

- Upper respiratory system –
- Lower respiratory system –
- Respiratory muscles –
 - a. What is the site of gas exchange?

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2. Describe the function of the various types of alveolar cells.

3. What is Minute Ventilation?

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4. Ventilation is continually adjusted to maintain constant arterial O₂, CO₂ and pH...

- a. Where are the sensors for these parameters?
- b. Where is the respiratory control center?
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- c. What is the most important parameter (O₂, CO₂ or pH) impacting respiratory rate/depth (under normal conditions)?
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5. Explain the process of inspiration and expiration. List the FULL sequence of events for each, including the volume and pressure changes, as well as the muscles involved.

- Inspiration process:

- Expiration process:
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6. What can a pulmonary function test (spirometry) tell about a person's respiratory system?

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7. What is COPD?

- COPD =
 - a. How do conditions such as emphysema and chronic bronchitis impair ventilation of the lung and therefore gas exchange?
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 - b. What is asthma? How can asthma be treated?
 - Asthma =
 - Treatment:

8. What role does surfactant play in the lungs?

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- a. Why do babies born prematurely often suffer from respiratory distress syndrome (RDS)?