

**SECTION 48-1 REVIEW**

# NONSPECIFIC DEFENSES

**VOCABULARY REVIEW** Define the following terms.

1. Koch's postulates \_\_\_\_\_  
\_\_\_\_\_
2. interferon \_\_\_\_\_  
\_\_\_\_\_
3. histamine \_\_\_\_\_  
\_\_\_\_\_
4. natural killer cell \_\_\_\_\_  
\_\_\_\_\_

**MULTIPLE CHOICE** Write the correct letter in the blank.

- \_\_\_\_\_ 1. Mucus serves as a nonspecific defense to pathogens by
- |                                |                         |
|--------------------------------|-------------------------|
| a. being secreted by the skin. | c. digesting pathogens. |
| b. capturing pathogens.        | d. secreting cytokines. |
- \_\_\_\_\_ 2. Which of the following statements is *false*?
- a. Fever stimulates the body's defense mechanisms.
  - b. Fever suppresses the growth of certain bacteria.
  - c. Fever activates cellular enzymes.
  - d. Fever promotes the action of white blood cells.
- \_\_\_\_\_ 3. Macrophages
- |                              |  |
|------------------------------|--|
| a. are white blood cells.    | c. engulf and destroy large pathogens. |
| b. cross blood-vessel walls. | d. All of the above                    |
- \_\_\_\_\_ 4. Natural killer cells are
- |                                 |                      |
|---------------------------------|----------------------|
| a. specialized red blood cells. | c. phagocytes.       |
| b. infected cells.              | d. None of the above |
- \_\_\_\_\_ 5. An inflammatory response is initiated by
- |                           |                                |
|---------------------------|--------------------------------|
| a. release of histamines. | c. fever.                      |
| b. pathogens.             | d. drying of mucous membranes. |

**SHORT ANSWER** Answer the questions in the space provided.

1. How are neutrophils involved in the body’s defense against pathogens? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
  
2. How does interferon inhibit viruses? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
  
3. How do antihistamine drugs affect the inflammatory immune response? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
  
4. **Critical Thinking** Why might taking aspirin to reduce fever slow rather than hasten your recovery from a bacterial infection? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**STRUCTURES AND FUNCTIONS** Use the table below to answer the following questions.

1. The table lists the steps that occur in the inflammatory response. Put the steps in the correct order by writing in the numbers 1–5 in the table under the column labeled “Order.”

Order	Events of inflammatory response
_____	Damaged cells secrete histamine.
_____	White blood cells attack and destroy the pathogens.
_____	Pathogens enter the body by penetrating the skin.
_____	White blood cells move to the infected area.
_____	Flow of blood to the infected area increases.

2. Why is an increase in the permeability of capillaries essential to the inflammatory response?  
 \_\_\_\_\_  
 \_\_\_\_\_
  
3. How would applying ice to a wounded area to reduce blood flow to the area affect the inflammatory response? \_\_\_\_\_  
 \_\_\_\_\_

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**SECTION 48-2 REVIEW**

# SPECIFIC DEFENSES: THE IMMUNE SYSTEM

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**VOCABULARY REVIEW** Define the following terms.

1. plasma cell \_\_\_\_\_  
\_\_\_\_\_
2. antigen \_\_\_\_\_  
\_\_\_\_\_
3. memory cell \_\_\_\_\_  
\_\_\_\_\_
4. antibody \_\_\_\_\_  
\_\_\_\_\_
5. allergy \_\_\_\_\_  
\_\_\_\_\_

**MULTIPLE CHOICE** Write the correct letter in the blank.

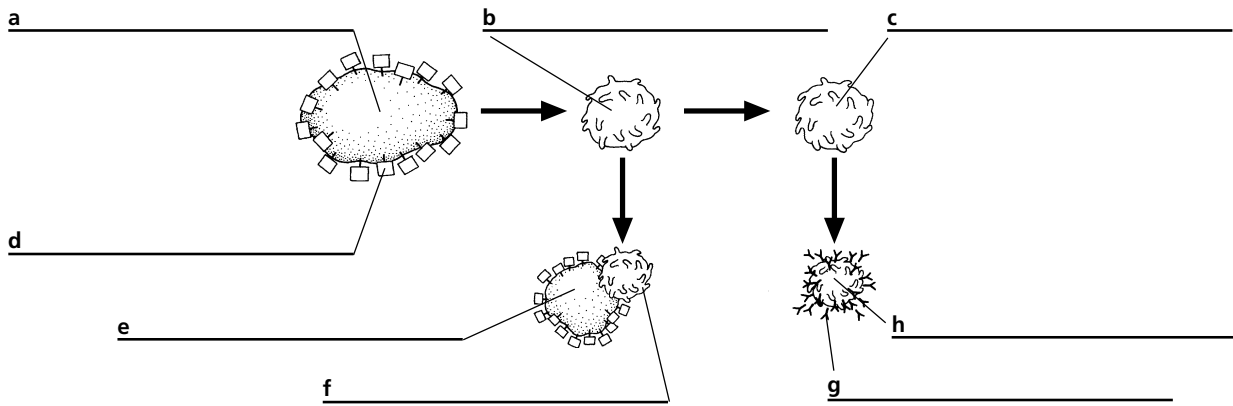
- \_\_\_\_\_ 1. Which of the following are *not* lymphocytes?  
a. memory cells      b. helper T cells      c. macrophages      d. B cells
- \_\_\_\_\_ 2. Bone marrow is considered part of the immune system because it  
a. filters pathogens from blood.      c. produces white blood cells.  
b. drains into the lymphatic system.      d. produces plasma cells.
- \_\_\_\_\_ 3. B cells  
a. are involved with the humoral immune response.  
b. kill infected cells.  
c. mature within the thymus.  
d. are derived from plasma cells.
- \_\_\_\_\_ 4. Interleukins are secreted by  
a. cytotoxic T cells.      b. helper T cells.      c. plasma cells.      d. All of the above
- \_\_\_\_\_ 5. Cell-mediated immune responses require  
a. production of antibodies.      c. B cells.  
b. helper T cells.      d. a secondary immune response.

**SHORT ANSWER** Answer the questions in the space provided.

1. What signals does a T cell require in order to divide? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
2. How do vaccinations produce immunity? \_\_\_\_\_  
 \_\_\_\_\_
3. How do antibodies provide defense from viruses? \_\_\_\_\_  
 \_\_\_\_\_
4. **Critical Thinking** Would you expect defective T cells or defective B cells to be the primary cause of autoimmune diseases? Explain your answer. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**STRUCTURES AND FUNCTIONS** Use the figure of the immune response below to answer the following questions.

1. Label each part of the figure in the spaces provided.



2. What event triggers the chain of events shown in the figure? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
3. How would an enzyme that destroys cytokines affect both the cell-mediated and humoral immune responses? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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