

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.

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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

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? _____

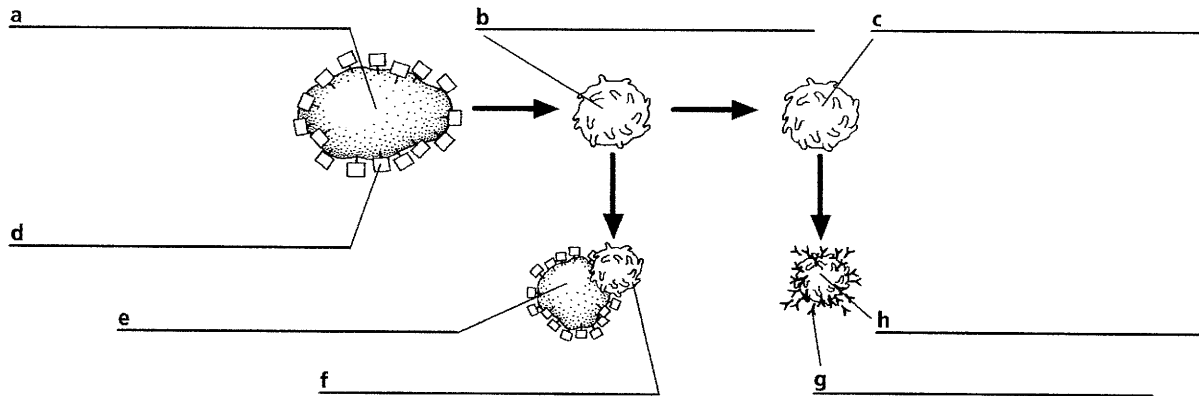
2. How do vaccinations produce immunity? _____

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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SECTION 48-3 REVIEW

AIDS

VOCABULARY REVIEW Explain the relationship between the terms in each of the following pairs of terms.

1. helper T cells, AIDS _____

2. RNA, retrovirus _____

3. AIDS, HIV _____

4. opportunistic infection, helper T cells _____

MULTIPLE CHOICE Write the correct letter in the blank.

- _____ 1. A diagnosis of AIDS is made when a person has
 - a. an HIV infection.
 - b. few B cells.
 - c. few T cells.
 - d. All of the above
- _____ 2. Which of the following is a route of HIV transmission?
 - a. breathing air in a room with a person with AIDS
 - b. touching a person infected with HIV
 - c. sharing of hypodermic needles
 - d. insect bites
- _____ 3. The most common means of HIV transmission is
 - a. sexual intercourse with a person infected with HIV.
 - b. blood transfusion.
 - c. shaking hands with a person with AIDS.
 - d. performing experiments with HIV.
- _____ 4. Vaccines against HIV are difficult to design because HIV
 - a. is a retrovirus.
 - b. is difficult to isolate.
 - c. changes rapidly.
 - d. is not detectable.
- _____ 5. HIV begins to reproduce
 - a. when AIDS occurs.
 - b. shortly after infection.
 - c. months after infection.
 - d. All of the above

SHORT ANSWER Answer the questions in the space provided.

1. Is HIV the primary cause of death in people with AIDS? Explain your answer. _____

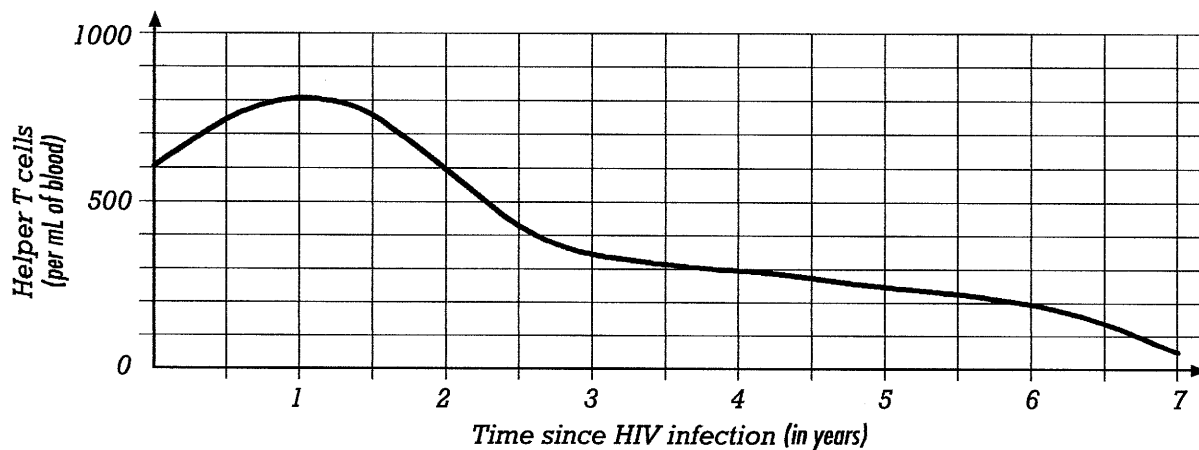
2. Can a person be infected with HIV but not exhibit AIDS? Explain your answer. _____

3. List two ways that HIV can be transmitted. _____

4. **Critical Thinking** Could people become exposed to HIV during an organ transplant or skin graft operation? Explain your answer. _____

STRUCTURES AND FUNCTIONS Use the graph below to answer the following questions.

The graph shows a decrease in the number of helper T cells in a person with HIV over time.



1. In this person, how many years after infection did the onset of AIDS occur? _____

2. The person tested positive for HIV six months after infection but tested negative for HIV six years later. Explain how this might happen. _____

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