Chapter 19 Fighting Disease

Study Guide

1. **Infectious Disease**
    a. Disease and **Pathogens**
        i. **Pasteurization**
    b. How Diseases Are Spread
        i. Person-to-Person Transfer
        ii. Contaminated Objects
        iii. Animal Bites
        iv. Pathogens for the Environment
2. The Body's Defenses
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        iii. The Mouth and Stomach
    b. General Defenses
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    c. The Immune System
        i. **Immune Response**
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        iii. **T Cells**
            1. **Antigens**
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    d. **AIDS**, a Disease of the Immune System
        i. How HIV Affects the Body
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3. Preventing Infectious Disease
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        i. How **Active Immunity** Is Produced
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1. **Vaccine**

b. **Passive Immunity**

c. Staying Healthy

i. **Antibiotic**

4. **Noninfectious Disease**

a. **Allergies**

i. **Allergens**

ii. Reaction to Allergens

1. **Histamine**

iii. **Asthma**

b. **Diabetes**

i. **Insulin**

ii. Effects of Diabetes

iii. Forms of Diabetes

c. Cancer

i. **Tumor** Formation

ii. Causes of Cancer

1. **Carcinogens**

iii. Cancer Treatment

iv. Cancer Prevention

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SECTION 19-1 REVIEW AND REINFORCE

Infectious Disease

◆ Understanding Main Ideas

Complete the following table.

How Infectious Diseases are Spread		
Source	**Example of Method of Transfer**	**Examples of Diseases Spread in this Way**
Another person	direct contact: shaking hands indirect contact: **1.**	**2.** **3.**
Contaminated object or food	**4.**	colds, flu
5.	animal bite	rabies **6.**
The environment	Contact with pathogen that lives naturally in the soil or water	**7.**

Answer the following question.

8. What are the four major groups of human pathogens?

_____

◆ Building Vocabulary

Write a definition for each of the following in the spaces provided.

9. infectious disease

_____

_____

10. pathogen

_____

_____

11. pasteurization

_____

_____

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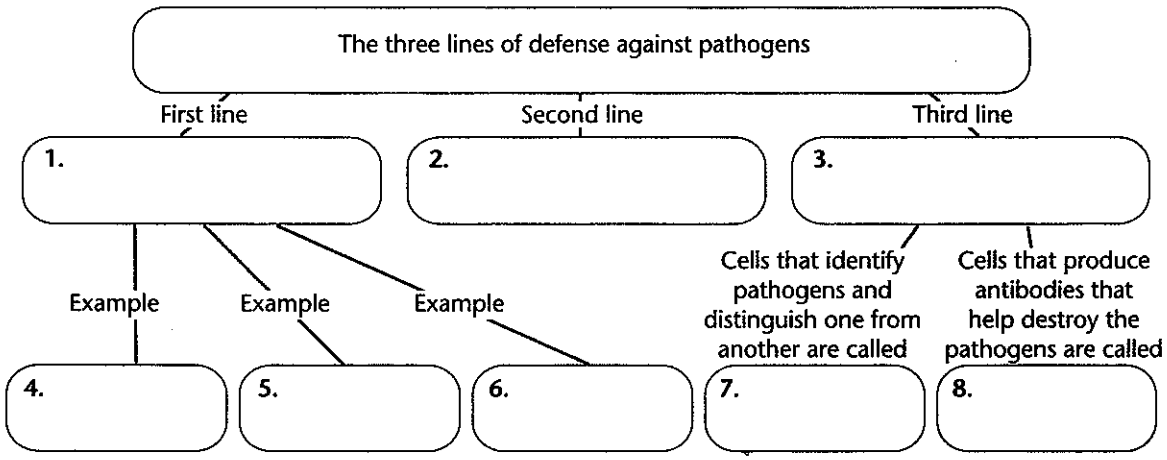
SECTION 19-2 REVIEW AND REINFORCE

The Body's Defenses

◆ Understanding Main Ideas

Complete the following concept map.



◆ Building Vocabulary

From the list below, choose the term that best completes each sentence.

antibody	AIDS	antigen
immune response	inflammatory response	phagocyte
lymphocyte		

9. A marker molecule on a cell that the immune system uses to recognize a pathogen is called a(n) _____.

10. _____ is a disease caused by a virus that attacks the immune system.

11. A(n) _____ is a white blood cell that engulfs and destroys pathogens.

12. During the _____, blood vessels widen in the area affected by pathogens.

13. In the _____, the body reacts to each kind of pathogen with a defense targeted specifically for that pathogen.

14. A chemical that helps destroy a specific kind of pathogen by locking on to a specific marker molecule is called a(n) _____.

15. The type of white blood cell involved in the immune response is a(n) _____.

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SECTION 19-3 REVIEW AND REINFORCE

Preventing Infectious Disease

◆ Understanding Main Ideas

Complete the table below by stating whether each characteristic applies to passive or active immunity.

Characteristic	Type of Immunity
Only lasts a few months	**1.**
Can last for a lifetime	**2.**
May be gained by coming down with a disease	**3.**
Passed from a pregnant mother to her unborn child	**4.**
Can be produced by vaccination	**5.**

Answer the following on a separate sheet of paper.

6. Describe two ways in which active immunity is produced.

7. Explain why you might treat a bacterial infection but not a viral disease with an antibiotic.

◆ Building Vocabulary

Match each term with its definition by writing the letter of the correct definition on the line beside the term.

_____ **8.** active immunity

_____ **9.** antibiotic

_____ **10.** passive immunity

_____ **11.** vaccination

_____ **12.** vaccine

a. the immunity gained when a person's own immune system produces antibodies in response to a pathogen

b. a substance consisting of pathogens that have been weakened or killed

c. a chemical that kills or slows the growth of bacteria

d. the deliberate introduction of harmless pathogens into a person's body

e. the temporary immunity gained from introducing antibodies from another source into a person's own body

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SECTION 19-4 REVIEW AND REINFORCE

Noninfectious Disease

◆ Understanding Main Ideas

Answer the following questions on a separate sheet of paper.

1. What is an allergy?
2. What is the difference between Type I and Type II diabetes?
3. What is cancer? Why is it dangerous?
4. What are two factors that make a person more likely to develop cancer?
5. What are three methods used to treat cancer?
6. Should you be worried about getting diabetes or cancer from a friend who has one of those diseases? Explain.

◆ Building Vocabulary

From the list below, choose the term that best completes each sentence.

allergen	asthma	carcinogen
histamine	insulin	tumor

7. The chemical _____ enables body cells to take in and use glucose for energy.
8. A(n) _____ is any foreign substance that causes an allergy.
9. _____ is the chemical that cells release in reaction to an allergen.
10. A(n) _____ is an abnormal tissue mass caused by cancer.
11. _____ is a condition in which the respiratory passages narrow significantly.
12. A(n) _____ is any substance or factor that can cause cancer.

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Choose the letter of the correct answer.

1. In which disease do a person's body cells multiply uncontrollably?
   [A] asthma [B] AIDS [C] diabetes [D] cancer

2. The inflammatory response is called a general defense because
   [A] it is more effective than any of the body's other responses to disease.
   [B] it kills every pathogen that gets into the body.
   [C] all the organ systems of the body are involved in it.
   [D] it responds in the same way to any kind of pathogen.

3. How are colds and flu usually spread?
   [A] through an animal bite or by person-to-person transfer
   [B] by cold weather or contact with contaminated objects
   [C] by person-to-person transfer or contact with contaminated objects
   [D] by coming into contact with pathogens that live naturally in soil

4. Newborn babies have passive immunity to many diseases because
   [A] babies are given antibiotics immediately after birth.
   [B] babies' T cells are more active than those of adults.
   [C] babies are vaccinated immediately after birth.
   [D] babies have antibodies that were produced by their mothers' bodies.

5. Which of the following is NOT part of the inflammatory response?
   [A] White blood cells destroy pathogens.
   [B] Swelling increases blood flow to the infected area.
   [C] Chemicals may cause a fever.
   [D] Antibodies are produced.

6. What does the body produce when lymphocytes encounter an allergen?
   [A] tumors [B] insulin [C] histamine [D] carcinogens

Choose the letter of the correct answer.

7. An infectious disease is a disease that

   [A] cannot be cured.
   [B] can pass from one organism to another.
   [C] can be spread only by bacteria.
   [D] is caught because the weather turns cold.

Fill in the word or phrase that best completes the statement(s).

8. The body's ability to destroy pathogens before they can cause disease is called _____.

9. One environmental substance that causes cancer is the brown, sticky _____ found in cigarette smoke.

10. Microorganisms in milk can be killed by a heating process called _____.

11. A(n) _____ is a chemical that kills or slows the growth of bacteria without harming body cells.

12. A chemical called _____ is responsible for the symptoms of an allergy.

13. The _____, in which fluid and white blood cells leave blood vessels, is the body's second line of defense.

14. The pancreas produces _____, a chemical that is necessary for body cells to take in glucose.

15. The stomach contains _____ that destroys pathogens.

16. Colds and tuberculosis are both examples of _____ diseases, because they can pass from one organism to another.

17. Molecules on cells that the immune system recognizes either as part of your body or as coming from outside your body are called _____.

If the statement is true, write true. If it is false, change the underlined word or words to make the statement true.

18. The more serious form of diabetes is Type I.

19. There are no medications that cure illnesses caused by viruses.

If the statement is true, write true. If it is false, change the underlined word or words to make the statement true.

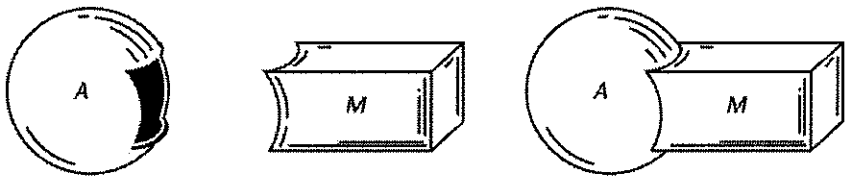
20. The inflammatory response is <u>different</u> each time it is triggered by different pathogens.

21. An allergy is known as a <u>noninfectious</u> disease because it is not spread from person to person.

22. Cancer cells destroy healthy tissue because they multiply at a <u>lower</u> rate than do healthy cells.

23. Antibodies are produced by <u>T cells</u>.

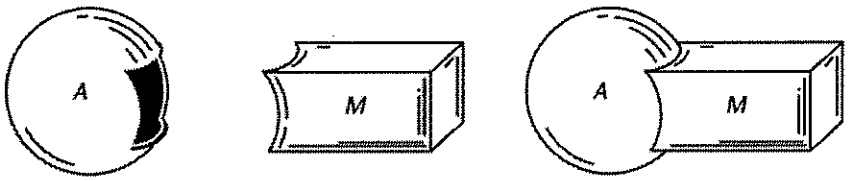
Use the diagram to answer the question(s).



A = antibody *M = measles virus*

24. What kind of cell produced A? What caused that cell to produce A?

Use the diagram to answer the question(s).



A = antibody *M = measles virus*

25. The diagram does not show whether M comes from a vaccine or from having had measles. Explain why the source of the antigen makes no difference in the reaction between A and M.

Use the table to answer the question(s).

Type of Immunity	*Is It Produced by a Person's Own Body?*	*How Does a Person Acquire This Type of Immunity?*	*How Long Does This Type of Immunity Last?*
A	?	?	Usually a long time
B	No	Before birth or from an injection that contains antibodies	?

26. What type of immunity is indicated by B? How can you tell?

27. People who had German measles as children almost never get the disease again. What kind of immunity do they have, A or B? Explain.

Write an answer to the following question(s).

28. Define asthma and describe two symptoms of the disease.

29. Compare and contrast the two forms of diabetes.

30. Explain why people who have AIDS often get diseases that rarely affect other people.