Name Date

Section 3.2 Summary

Factors Affecting the Immune System

Textbook pages 110–117

Before You Read

You probably remember receiving a vaccination at school or in your doctor's office. How does a vaccination help you to stay healthy? Write your ideas on the lines below.

_____

_____

Mark the Text

In Your Own Words
Highlight the main idea in each paragraph. Stop after each paragraph and put what you just read into your own words.

Reading Check

1. Why are people given vaccines?

_____

_____

_____

How does a vaccine help the immune system?

A **vaccine** is a weakened or dead form of a disease pathogen. A vaccine may be given to a person by needle or by mouth.

Once a vaccine is in the body, the immune system starts to respond. The immune system makes antibodies against the antigens in the vaccine. This way, your body has antibodies to defend you if you are exposed to the live form of the pathogen.

Some vaccines are given early in life and once more when you are older. This additional vaccine helps to extend the immune system's memory for that antigen. Grade 9 students in British Columbia receive vaccines for at least three diseases: tetanus, diphtheria, and pertussis. You may also need vaccines later in life, especially if you travel to other parts of the world.

How does an allergy affect the immune system?

If you have an **allergy**, your immune system is very sensitive to a substance, such as dust, mould, or some foods. Any substance that causes an allergic reaction is called an allergen.

The immune system releases a chemical called histamine to combat allergens when they enter the body. Histamine makes the nose run and the eyes water. People can take an antihistamine drug to help reduce the effects of histamine.

In severe cases, an allergic reaction to allergens such as bee-sting venom and peanuts can cause the throat to swell. A person can have great trouble breathing. People who have such extreme reactions keep medicine with them as a precaution.

How does AIDS affect the immune system?

AIDS is a disease that is caused by a type of virus called HIV. HIV stands for human immunodeficiency virus. HIV is a dangerous pathogen that attacks the helper T cells of the immune system. Without helper T cells, the body cannot trigger the action of killer T cells or B cells. As a result, a person can get very sick, and even die, from infections.

HIV can enter the body in semen or in blood. Infection from HIV can happen if a person has sex without a condom. Infection from HIV can also happen if a person shares a needle that has been in contact with infected blood. These unsafe practices are the main way that people acquire HIV.

There is no known cure for AIDS. Developing a vaccine for AIDS is very difficult because HIV keeps changing. New forms of HIV are discovered every year.

How can you take care of your immune system?

A healthy immune system helps to keep all your other body systems healthy. Here are some steps you can follow to take care of your immune system.

Taking Care of Your Immune System
• Eat a well-balanced diet. • Brush your teeth, shower or bathe, and wash your hands often. • Keep your home clean. • Avoid tobacco and other non-prescription drugs. • Get plenty of rest and exercise. • Keep your vaccinations up to date. • Do not engage in activities that involve sharing bodily fluids with others.

Reading Check

2. Why should you keep your immune system healthy?

Name Date

Cloze Activity
Section 3.2

Use with textbook pages 112–114.

Disorders of the immune system

Vocabulary	
AIDS	dead
allergy	helper T cells
allergen	histamine
allergic reaction	HIV
antibodies	killer T cells
antigens	live
antihistamine	memory
B cells	vaccine
bodily fluids	

Use the terms in the vocabulary box to fill in the blanks. Use each term only once. You will not have to use every term.

1. A(n) _____ is a weakened or _____ form of a disease pathogen that is given to a person by needle or by mouth.

2. Once the vaccine is in the body, the immune system makes _____ against the _____ in the vaccine.

3. Antibodies made to fight the dead form of a pathogen will defend you if you are exposed to the _____ form of the pathogen.

4. Sometimes, you are given additional vaccines later in life to help extend the immune system's _____ for that antigen.

5. If your immune system is too sensitive you may have a(n) _____ to a substance, such as dust or mould.

6. In a(n)_____, the immune system releases a chemical called_____ to combat allergens.

7. A(n) _____ drug can help reduce the effects of histamine.

8. Any substance that causes an allergic reaction is called a(n) _____.

9. AIDS is caused by a dangerous pathogen called _____ which attacks the _____.

10. Without the helper T cells, the body cannot trigger the action of the _____ or the _____.

Use with textbook page 114.

True or false?

Read the statements about your immune system given below. If the statement is true, write "T" on the line in front of the statement. If it is false, write "F" and rewrite the statement to make it a true statement.

1. _____ If you have already been vaccinated, you do not need to be vaccinated again.

2. _____ HIV is transmitted only by semen.

3. _____ A vaccine is a live form of a disease pathogen.

4. _____ An antigen causes an allergic reaction.

5. _____ Histamine makes the nose run and the eyes water.

6. _____ AIDS is caused by a bacteria called HIV.

7. _____ There is no known cure for AIDS.

8. _____ HIV attacks the helper T cells.