Lesson 6

HIV/AIDS

Guide to Reading

- **Building Vocabulary**
  Explain the relationship between the two vocabulary terms below.
  - HIV (human immunodeficiency virus) (p. 427)
  - AIDS (acquired immunodeficiency syndrome) (p. 427)

- **Focusing on the Main Ideas**
  In this lesson, you will be able to
  - explain how people become infected with HIV and develop AIDS.
  - explain what is being done to fight AIDS.
  - analyze how media messages about sexual activity might influence teens.
  - describe how to protect yourself from HIV/AIDS.

- **Reading Strategy**
  **Identifying Problems and Solutions**
  After reading this lesson, identify how HIV is transmitted and what can be done to prevent the spread of HIV.

What Are HIV and AIDS?

**HIV (human immunodeficiency virus)** is the virus that causes AIDS. **AIDS (acquired immunodeficiency syndrome)** is a disease that interferes with the body’s ability to fight infection. In Lesson 2, you learned how the immune system fights disease. You learned that T cells coordinate the body’s response to infections. HIV is especially dangerous because it attacks and kills T cells. As a result, the immune system cannot fight HIV or any other infection. HIV does not kill all the T cells immediately. An infected person can have the virus for years without showing any signs or symptoms. Nevertheless, once a person is infected with HIV, the virus begins damaging the person’s immune system. Infected people can also spread the disease to others. **Figure 13.6** details how HIV attacks the immune system.

The Spread of HIV

HIV is not transmitted through casual contact. It is transmitted in one of the following ways:

- **Having any form of sexual intercourse with an infected person.** The most common way that HIV spreads from one person to another is through sexual intercourse. HIV circulates in the bloodstream and in other body fluids, such as semen and vaginal fluid. When people have sexual
**FIGURE 13.6**

**HOW HIV ATTACKS THE BODY**

HIV cripples the immune system by killing the T cells that control immune responses. *What kinds of diseases eventually harm people who have AIDS?*

1. The virus enters the body through the mucous membranes or a break in the skin. HIV invades a host cell, a T cell, using the cell's resources to make copies of itself. When that T cell is activated, it will start producing more of the virus instead of performing T cell functions. Eventually, the host cells are destroyed.

2. These viruses infect other T cells and multiply. These infected T cells are destroyed, and more copies of the virus are released.

3. More and more T cells are infected and destroyed. Without T cells to control the immune response, the body loses its ability to fight diseases and infections.

Intercourse, the virus can be transmitted from one person to the other. The virus circulates in a person's body even before it destroys the immune system. Many people who are infected with HIV do not know they have the virus. Even so, they can still infect other people. *Abstinence from sexual activity is the only sure way to protect yourself against this method of transmission.*

- **Using a contaminated needle.** A single drop of blood left on a needle can contain enough HIV to infect someone. Never handle needles or inject yourself with any illegal drugs. Contaminated needles used for tattooing and body piercing can also transmit the virus. People with diabetes and others who need to use needles should do so strictly under the care of a medical professional.

- **Other modes of transmission.** A pregnant female can transmit HIV to her child during delivery or through breast milk. Expectant mothers with HIV can take medicine to help reduce the chances of transmission during pregnancy and delivery. Before HIV was known to be the cause of AIDS, people sometimes became infected with HIV during blood transfusions. Since 1985, all blood is carefully screened for HIV. The United States blood supply is considered to be extremely safe.
How HIV Is NOT Spread

HIV is a very dangerous virus, but it is NOT spread through casual contact. You cannot get HIV or AIDS in any of the following ways.

- swimming in a pool with an infected person
- sharing utensils with an infected person
- breathing the air near an infected person
- donating blood
- being bitten by a mosquito that has bitten an infected person
- hugging or shaking hands with an infected person
- using the same shower, bathtub, or toilet as an infected person
- sharing sports equipment with an infected person

You don't have to avoid people with HIV and AIDS. In fact, people with HIV and AIDS deserve the same respect, kindness, and consideration you give to everyone you meet.

Reading Check List What are some ways that HIV cannot be transmitted?

Fighting AIDS

Around the world, HIV infection and AIDS remains a huge problem. In Africa, for example, millions of adults have died from AIDS. As a result, millions of children do not have parents. In the United States, more than 14,000 people die every year from AIDS. In many countries around the world, scientists and educators work to prevent HIV infection by teaching as many people as they can about the disease.

The AIDS quilt is a memorial to people who have died of AIDS. Each square represents one person who died from the disease. What can you learn from seeing the AIDS quilt?
Media Messages About Sexual Activity
Teens have many influences in their lives. Families, friends, movies, music, books, magazines, and the Internet all influence what teens think and how they act. Popular cultural messages often glamorize sexual activity. They may lead teens to believe that sexual activity is an acceptable way to express affection. However, sexual activity also exposes teens to STDs, including HIV. Try to recognize the messages aimed at you so that you can make positive health choices for yourself.

In a Group
Review some magazines aimed at teens. Find ads that show teens together. What kinds of behaviors are the ads suggesting? Are the suggested behaviors healthful ones? Do the ads seem to encourage sexual activity for teens? Make a list of the messages you find in ads. Then make a list of messages that would be more positive and healthful for teens.

In laboratories, scientists are working to improve medical treatments. Scientists have already developed powerful new drugs to help manage HIV infections. These treatments are not a cure for HIV. The new drugs work together to slow the progress of the disease. They do so by preventing HIV from reproducing. However, many of these drugs have serious side effects and are very expensive. There is also some evidence that some drugs are losing their ability to treat HIV. As HIV is exposed to the new drugs, the virus is changing in ways that make the drugs ineffective.

Scientists are also working on a vaccine against HIV. However, their progress has been very slow. There are several forms of HIV. Vaccines that work on one form might not work on another. A single vaccine that protects people against HIV is possible, but it will likely take many more years to develop.

 Battling HIV infection is difficult and expensive. That's why scientists and educators work very hard to help people keep from becoming infected in the first place. The best weapon in the fight against HIV and AIDS so far has been knowledge. When people learn how HIV is spread, they can take steps to avoid getting it.

Reading Check
Explain Why has progress on developing an HIV vaccine been slow?
Abstinence and HIV

AIDS is a disease that still has no cure. However, AIDS is 100 percent preventable. You are safe from HIV infection when you abstain from sexual activity and avoid sharing needles.

People who inject illegal drugs face many risks. They risk the dangers of the drugs they inject. Also, they risk exposing themselves to diseases. People who share needles expose themselves to any diseases that the other people who have used that needle may have.

Similarly, when people engage in sexual activity, they are exposing themselves to any STDs that their partner may have. The more sexual partners a person has, the more likely it is that the person will become infected with an STD such as HIV.

The only 100 percent sure way to avoid getting HIV is to avoid contact with sources of this virus. This means abstaining from sexual activity and avoiding injecting drugs and sharing needles. If you are pressured to use injectable drugs or have sexual activity, talk to your parents or guardians right away. Use your refusal skills. Stay away from people who encourage you to make dangerous choices. Abstinence from sexual activity is the responsible choice for teens. It could save your life.

Lesson 6 Review

After You Read

Review this lesson for new terms, major headings, and Reading Checks.

What I Learned
1. Vocabulary Define HIV and AIDS.
2. Identify How is AIDS related to HIV?
3. Give Examples People are often mistaken about how HIV is transmitted. Name four ways HIV is not transmitted.
4. Describe What happens to T cells that are infected with HIV?

Thinking Critically
5. Analyze Why is HIV an especially dangerous virus?
6. Apply Many people who have HIV do not know that they are infected with the virus. How can this be?

Applying Health Skills
7. Advocacy Create a pamphlet that shows teens how refusal skills can help protect them against HIV infection.