

LESSON GUIDE

GRADE 6

How Does the Immune System React When a Virus Enters the Body?

Performance Objectives

Students will:

- Identify how the immune system fights disease.
- Explain the difference between how HIV and measles affect the immune system.
- Develop a class bulletin board that includes facts and resources about HIV and AIDS.

Motivation

Say, “Imagine a castle. An intruder manages to sneak in. But an alarm system in the castle lets the soldiers know what the intruder looks like and where the intruder is hiding. This information lets the soldiers know exactly what kinds of weapons are capable of hurting the intruder and which ones are not. The soldiers create the right weapons, rush to the intruder, and surround it before it has time to cause too much damage. The intruder surrenders. If any other intruders of that same type enter the castle, the soldiers already have the right weapons to prevent them from doing any damage at all.”

Distribute, read aloud, and discuss the poem, “Through the Human Wall.”

Procedure/Development

- Say, “Our bodies are like the castle. Germs, such as viruses, are intruder-like substances called antigens. When they enter our bodies, our immune system (our soldiers) gears up for action. Germs sneak into our bodies just like the intruder sneaks into the castle. This is called ‘Mode of Transmission.’”
- Ask students if they remember how germs enter the body.
Answers: breathing in germs when someone has sneezed or coughed, through cuts on the skin, through touching, through contact with blood or bodily fluids. Be sure to remind them, though, that not all germs enter the body in all these different ways.
- Say, “Antibodies created by the immune system are the weapons that fight disease. When antigens (for example, viruses) first enter our bodies, they sometimes have time to cause disease before the antibodies are created and deployed. But the antibodies that the healthy immune system can create are ‘custom-made’ for that specific type of virus, a perfect match to destroy the virus.”

GRADE 6 Lesson 1

NEW YORK STATE LEARNING STANDARDS 1

SKILLS

Self-Management

MATERIALS

Activity Sheet 1:

Through the Human Wall

Newsprint

VOCABULARY

AIDS

Antibody

Antigen

HIV

Immune System

Immunity

Incubation

Intruder

Mode of Transmission

T-Cells

Virus

- Say, “Sometimes antibodies create lifelong immunity to a virus so that if other viruses of the same type enter the body, they will not cause disease..”

Teacher Note: Students may inquire as to why people may get sick with the flu or a cold more than once, even if they have been vaccinated. Explain that sometimes viruses develop different strains, which are like close relatives. They belong to the same family, and so they cause the same illness. Antibodies, though, are created for specific family members, in this case specific viruses, so the antibodies that were created for the virus that caused the flu last year might not work on the one you get this year.

- Remind students that what happens to a flu virus when it enters the body is not the same as what happens to HIV, the virus that causes AIDS.
- Say, “A flu (influenza) virus is airborne. A person who is infected has symptoms of the flu (headaches, body aches, fever, fatigue). The immune system creates antibodies, which eventually destroy the virus. The person becomes well. The immune system stays strong. Antibodies create immunity to that particular flu virus.”
- Say, “HIV is very different. HIV stands for Human (affects only people) Immunodeficiency (impairs the immune system) Virus. HIV is bloodborne. It is transmitted through blood or other body fluids. (A later lesson will address transmission.) The infected person may have flu-like symptoms after being infected; those symptoms go away. The person may not show any further visible symptoms for as long as ten years or more. But during that time the virus is damaging the immune system and the person can still transmit the virus to others.”
- Say, “The immune system creates antibodies, but unlike the flu virus, HIV is not destroyed. Instead, HIV attacks T-cells, takes over the cells, and begins reproducing. The immune system breaks down. Certain medications can help slow down this process by preventing HIV from attacking the immune system and protecting against opportunistic infections (diseases that people with intact immune systems are unlikely to get).”
- Say, “Some people with HIV are able to fight off infections longer, while others become less and less able to fight off infections and eventually develop AIDS, or Acquired Immune Deficiency Syndrome, which is a group of related diseases that people with advanced HIV infection sometimes get. Sometimes these diseases are fatal, and sometimes the person who has AIDS recovers, even though his or her immune system is still quite weak.”
- Say, “Another difference between flu viruses and HIV is that flu vaccines help keep people from getting the flu, but there is no HIV vaccine.”

Assessment

Say, “You have been chosen to write a short PSA (explain what a Public Service Announcement is) that explains how the immune system works to fight HIV. It will be aired during a commercial break for your favorite show. Be sure to include how HIV is different from other viruses.”

Homework

As a class project, make a bulletin board entitled “HIV and AIDS: Facts and Resources.”

Have students bring in:

- Pictures, headlines, and articles from newspapers and magazines.
- Creative writing.
- Factual pamphlets.
- Resource lists of people, places, and telephone hotlines that can provide information about HIV and AIDS.
- Other information, poems, stories, or drawings students wish to contribute.

Through the Human Wall

by Betty Rothbart

Skin keeps insides in
so blood won't spill.
It keeps germs out
so you won't get ill.

But skin can get cut
and germs can sneak in,
infecting the body,
causing havoc within.

White blood cells are the soldiers in blood.
With antibodies, custom-made,
soldiers stop dangerous
germs that invade.

But soldiers can fail
to halt an attack
if germs are fierce
and fight them back.

Germs can wrestle soldiers
and sap their strength,
then spread disease
through the body's length.

Yet medical advances
limit germs' chances.
Antibiotics banish bacteria.
Virile vaccines zap virulent viruses.
Both of these surprise and protect.
They're the secret weapons
That germs don't expect.

SKILLS

Decision Making
Relationship Management
Self-Management

MATERIALS

Newsprint

VOCABULARY

Abstinence
Condom
Infectious
Injection Drug Use

How Is HIV Transmitted?

Performance Objectives

Students will be able to:

- Identify ways HIV can be transmitted.
- Identify ways HIV cannot be transmitted.
- Develop class health guidelines.

Motivation

Read the following letter to the students. Ask them to imagine that this letter is from a friend.

My best friend just returned from the clinic. She just found out she is HIV-positive. She invited me to dinner. What should I do? Should I go? What do I say to her and her family? Can I eat food that she cooks or has touched? Will she be all right?

Have students write a response to the above letter. Have them include the reasons for their advice.

Procedure/Development

- List selected student responses on newsprint and evaluate the suggestions:
 - Ask, “What kinds of feelings might the person with HIV/AIDS be having?”

Answers should include: fear, sadness, and worry. Then ask students to elaborate as to what the person might be afraid/sad/worried about. Answers should include: being sick, managing a complicated illness, money, their future, rejection, isolation, dying.
 - Ask, “What kinds of things could the loved ones, friends, and family of someone with HIV/AIDS be worried about?”

Answers should include: the health of their loved one, financial concerns, concerns about their own risk/safety, concerns about discrimination, etc.
 - Ask, “How can we help someone we know who has HIV/AIDS?”

A person with HIV/AIDS needs continued emotional support, acceptance, and often help with errands, if already sick. We should continue to be a good friend, etc.
 - Ask, “How can we help people we know who are close to someone with HIV/AIDS?”

Let them talk; ask them if they need any help; be their friend.

Teacher Note: Be aware and sensitive to the fact that some of your students may have a friend or family member with HIV/AIDS, or may have HIV or AIDS themselves; emphasize the importance of a continued close relationship with a loved one who has HIV/AIDS and with those whose loved ones have HIV/AIDS.

- Using newsprint, develop a list of how HIV can and cannot be transmitted according to the students' responses. Be sure to include these:

WAYS HIV CAN BE TRANSMITTED

- By unprotected sexual intercourse with an infected partner. Unprotected intercourse means intercourse without any use of a barrier, such as a latex or a polyurethane condom. Protected intercourse refers to intercourse in which an appropriate barrier method (latex or polyurethane condom) is used correctly and successfully.
- By sharing unclean needles, syringes, other injection drug-use equipment, and sharp objects that can transfer blood from one person to another. Some people need to inject medicine, such as insulin for diabetics. They always need to use sterile needles and never share them.
- Avoid all alcohol and other drug use because drugs can impair judgment and decision making, and can lead to risk behaviors.
- From an infected pregnant woman to the child she is carrying, and through breastfeeding.
- By transfusion of HIV-infected blood. Since 1985 the blood supply in the U.S. has been carefully tested for HIV. This mode of transmission is highly unlikely now, but not impossible.

WAYS HIV CANNOT BE TRANSMITTED

- Sneezing, coughing, kissing.
 - Sharing towels and utensils.
 - Using public toilets.
 - Using public telephones.
 - Being in the same room as someone with HIV.
 - Eating with someone who has HIV.
 - Holding hands or having other forms of “casual contact” with someone who has HIV.
 - Mosquito bites.
- Say, “Abstinence is the most effective way to avoid the sexual transmission of HIV and other sexually transmitted infections (STIs) as well as to protect against unintended pregnancy. Abstinence is the safest choice young people can make to prevent HIV infection.
“Activities like kissing, hugging, and touching that entail no contact with semen, vaginal fluids, or blood are not ways that HIV can be transmitted.”

Teacher Note: To initiate discussion of what casual contact is, ask:

- Can HIV be transmitted by shaking hands?
- Can HIV be transmitted by sharing a meal?
- Can HIV be passed from one person to another during a hug?
- Can HIV be transmitted by using the same bathroom as a person who has the virus?
- Can one get HIV from swimming with infected people?

Make sure students understand that the answer to each question is no. Ask students what other things they have heard about ways that you can become infected with HIV and correct any myths or misconceptions.

- Have students develop a list of behaviors the class can adopt that will promote good physical and emotional health. These should include:
 - Avoiding use of alcohol, tobacco, and other drugs.
 - Practicing personal safety.
 - Practicing responsible decision making and abstaining from sexual intercourse.
 - Adopting infection control practices.
 - Practicing good nutrition.
 - Getting enough sleep.
 - Expressing feelings.
 - Fostering supportive relationships with family and friends and others to whom they are close.
 - Choosing friends who also cultivate good health habits.
- Post these lists on a class HIV/AIDS information bulletin board.

Assessment

Ask students to write down everything they did since they awakened in the morning. Ask them to evaluate the health aspect of their behaviors, giving an “A” rating to good health practices; “F” to totally unhealthy behaviors; and “B,” “C,” and “D” for behavior in between.

How Do Our Peers Affect the Way We Choose to Live?

Performance Objectives

Students will be able to:

- Define peer pressure.
- Identify ways peers can be supportive of one another.

Motivation

- Discuss TV and print ads for sneakers. Some people believe that such ads irresponsibly encourage teenagers to purchase expensive shoes to attain status. Ask the class to define peer pressure (influencing or being influenced by people of similar ages, e.g., pressure to wear certain clothes or wear hair a certain way or to engage in certain activities that “everyone else seems to be doing.” Sometimes people fear being left out or thought “uncool” if they don’t do what peers are doing).

Teacher Note: Throughout this lesson distinguish between positive and negative peer pressure. Positive peer pressure influences students to do meaningful, constructive things, like striving to do well in school, trying out for a team, or raising money for a school trip. Negative peer pressure influences students to do things that may be harmful to themselves or others, such as bullying, smoking cigarettes or using alcohol or other drugs.

- Have the students give examples of the types of peer pressure they’ve encountered. Ask them to be as specific as possible about situations in which they or someone they know did not want to go along with the crowd. What happened to that person? Write the examples on newsprint.

Procedure/Development

- Ask the class: “During the last couple of lessons, we have discussed HIV and AIDS. What does peer pressure have to do with that?”
- If the class does not come up with the following explanation, say, “Two primary ways in which HIV is transmitted are through unprotected sexual intercourse and through sharing injection drug use equipment. These are two activities that some people may engage in due to peer pressure. Young people your age are best off if they abstain from sexual relationships. Young people are sometimes pressured to have sex by peers, or especially older adolescents or teens. It is not right for a person to persuade, pressure, or coerce someone to have sex. If this happens, say no and tell a parent, guardian, teacher, counselor, or other trusted adult.”

GRADE 6 Lesson 3

NEW YORK STATE LEARNING STANDARDS 1

SKILLS

Communication
Decision Making
Relationship Management
Self-Management

MATERIALS

Activity Sheet 1:
Complete the Story
Newsprint

VOCABULARY

Aggressive
Assertive
Nonverbal
Peer
Peer Pressure
Verbal

“However, some young people begin sexual relationships because they believe everyone else is sexually active and they should be, too. In fact, there is often more talk than action, and the impression that ‘everyone else is having sex’ is mistaken. Most young people your age abstain from sexual relationships. People also sometimes begin to drink alcohol or to take drugs because friends pressure them to try them. Alcohol and other drugs impair judgment and lead to risk behaviors, (e.g., unsafe sex).”

- Say, “Peer pressure can be either verbal or nonverbal.” Ask class for examples of verbal and nonverbal peer pressure. (Verbal pressure is spoken: “Come on, try it, everybody else is.” Nonverbal pressure is conveyed through expressions, gestures, or actions, e.g., rolling eyes, turning away, laughing at someone.)
- Say, “With that said, peer pressure can be a powerful influence on how people behave. So far, we’ve only discussed how it can be a negative influence for people to act in unhealthy ways and we’re going to talk more in a minute about that. But, because it’s so powerful, it’s important to know that peer pressure can also be used positively to encourage people to act in healthy ways.” Ask for examples of positive peer pressure (encouraging a friend to exercise and eat healthfully; encouraging a friend to do well in school).
- Now write the word “assertiveness” on newsprint and ask the class to define it.
Possible Answers: To assert or stand up for one’s right to make one’s own choices, without putting someone down who makes different choices. Assertiveness means speaking in “I” statements, and being calm and clear about one’s choices (for example, “I don’t want to do that”; “I don’t think that’s healthy”) even if it means repeating them over and over or walking away from the situation if the other person keeps pushing.
- Choose one of the examples of peer pressure situations from newsprint and plan out with the class how it can be dramatized. Have students volunteer for roles and act it out for the class.
- Divide the class into four or five small groups. Have each group develop a role-play, illustrating a student responding with assertive behavior to one of the peer pressure examples on newsprint. Give the groups five to ten minutes to develop the role-plays, and then have them perform them in front of the class. Follow each role-play with a discussion, clarifying what verbal and nonverbal negative peer pressure and assertiveness behaviors were illustrated in the role-play.

Teacher Note: Role-playing risk-related scenarios is also an effective strategy and helps build important coping and decision-making skills. (See Appendix B, “Classroom Guides.”)

Assessment/Homework

Distribute Activity Sheets 1-A, 1-B, and 1-C. Have students complete the stories “The Power to Persuade,” “Love Show,” and “Drugs That Divide” in class. Have students share their completed stories with the class and give their own story ideas.

Complete the Story

Directions:

Following are the beginnings of three stories, "The Power to Persuade," "Love Show," and "Drugs That Divide." Complete the stories by showing how Enrico, Yolanda, and Michael can resist negative peer pressure by acting assertively, not aggressively.

Marijuana is an illegal drug that can be smoked or eaten.

The Power to Persuade

Enrico admired Sam and his friends. He liked the way they dressed, the way they spoke, the way they seemed so confident. Sam, especially, was a real leader. He was popular and always seemed to know about parties that were going on during the weekend. One Saturday evening Enrico was on his way home from a movie when he saw Sam and his friends in the park. He walked over to say hello and noticed that they were smoking marijuana. Sam greeted Enrico and offered him a joint. Enrico had never smoked marijuana and didn't want to try it.

Enrico said: " _____."

Sam replied: " _____."

Enrico said: " _____."

Sam said: " _____."

Then Enrico said: " _____"

_____."

Activity Sheet 1-B

Love Show

Yolanda had looked forward to Brenda's party all week because she knew Mario would be there. He was several years older, good-looking, and a terrific dancer. Brenda's party would be a great opportunity to get to know him better.

Sure enough, they hit it off right away. Yolanda and Mario laughed and danced together all evening. After the party, Mario walked her home. Near her building was a park. He kissed Yolanda and asked her to go into the park with him. She liked Mario, but did not want to do anything more than kiss. She thought that Mario wanted to be sexually involved. Going into the park did not feel safe. She would feel vulnerable if he pressured her.

Yolanda said: " _____."

Mario replied: " _____."

Yolanda said: " _____."

Mario said: " _____."

Then Yolanda said: " _____

_____."

Drugs That Divide

Michael and Bill are close friends. Bill has started to use crack. Michael cares for Bill and is worried about him. Bill has been pressuring Michael to smoke crack with him.

Michael said: " _____."

Bill replied: " _____."

Michael said: " _____."

Bill said: " _____."

Then Michael said: " _____"

_____."

SKILLS

Advocacy

Self-Management

MATERIALS

Markers

Newsprint

VOCABULARY

People Living with HIV/AIDS
(PLWHA)

Society

Timeline

How Has HIV/AIDS Changed Our Society?

Performance Objectives

Students will be able to:

- View HIV/AIDS as both a personal and social issue.
- View HIV/AIDS as a major public health concern.
- View HIV/AIDS from a historical perspective, its current status, and what could happen in the future.

Motivation

Have students sit in a circle.

- Say, “Think for a moment of a person with HIV or AIDS. What picture comes to mind?” Have students discuss their concept of a person with HIV/AIDS.
- Say, “Most people living with HIV or AIDS look no different than anyone else.” Tell the class that you will use the phrase “People Living with HIV/AIDS (PLWHA).”

Procedure/Development

- Say, “One thing that PLWHAs all have in common is that they became infected with HIV, even if they became infected in different ways. Some of them knew how to protect themselves from becoming infected and didn’t do so, and some of them didn’t know how to protect themselves.” (You may want to point out that until doctors identified HIV and how it is acquired, HIV infections occurred in people who had no way of knowing that HIV existed or how to protect themselves.)
- Ask, “What needs to be done in the future so that people no longer become infected?”

Write students’ responses on newsprint (or chalkboard). Student ideas might include:

- People need to remember that HIV transmission is preventable.
- People have to be better educated about the ways HIV can be transmitted so that transmission can be reduced and eventually eliminated.
- People have to be better educated about how they can protect themselves from HIV infection.
- People need to be educated about the differences between HIV and AIDS.
- New treatments for HIV/AIDS must continue to be developed.
- A cure and a vaccine for HIV/AIDS must be found.

- Educate people regarding the importance of HIV testing and knowing their HIV status, so they can protect themselves and others. In 2004, in New York City and the United States, one in four HIV-positive people did not know they were infected and nine out of 10 HIV-positive individuals worldwide were unaware of their HIV status.
- Healthcare for PLWHA needs to be improved.
- PLWHA need to be able to receive proper medications, regardless of their ability to pay for them.
- Drug users need to get into treatment.
- People need to be educated that anyone who practices risk behaviors is susceptible to HIV infection. Prejudice against PLWHA and from communities hit hard by HIV and AIDS needs to be fought.
- People need to understand that HIV infection and AIDS can be chronic illnesses (manageable and not necessarily life-threatening) with treatment and the maintenance of good health practices.

Assessment

- Have students write a description of how they think HIV/AIDS has changed our society. (For example, it has made people more careful about sex and drugs, confirmed that abstinence is a healthy choice at any age, highlighted deficiencies in the healthcare system, and unfairly intensified prejudice against various groups in our society.)
- Have students write a description of how the presence of HIV/AIDS in society has affected their communities.
- Ask for volunteers to read their descriptions.

How Can We Prevent HIV Infection?

Prevention

NEW YORK STATE
LEARNING STANDARDS
1

SKILLS

Advocacy
Communication
Decision Making
Self-Management

MATERIALS

Newsprint

VOCABULARY

Latex Condoms
Polyurethane Condoms

Performance Objectives

Students will:

- Understand how to prevent the spread of HIV.

Motivation

- Ask, "What have you heard about ways to prevent HIV infection?"
Write students' answers on the chalkboard or newsprint.
- Ask, "Do you think these are myths or facts?"

Procedure/Development

- Circle answers that are myths and underline the ones that are facts. Students should identify the following as methods of prevention:
 - Abstain from alcohol and other drug use, which impair decision making and may lead to risk behaviors that can transmit HIV.
 - Abstain from sharing sharp objects, such as needles, razors, pins, or scissors that might be used on someone's skin and lead to exchange of blood if someone else uses them, too. For example, some young people use sharp items to become "blood brothers" or "blood sisters." This may put them at risk of HIV or other infection.
 - Abstaining from sexual intercourse is the healthiest, most appropriate choice for young people. If anyone pressures them to have sexual intercourse, they should say no and tell a parent, guardian, teacher, counselor, or other trusted adult.
 - Young people who do have sexual intercourse should know that correct and consistent use of latex or polyurethane condoms will reduce but not eliminate their risk of infection with HIV and other sexually transmitted infections.
 - Stay informed and make sure you and your friends know the facts about HIV infection and practice good decision making.

Assessment/Homework

Create a poster or write a song, rap, poem, or short story about how to prevent HIV infection.