

Treatment for HIV-Related Illnesses and AIDS

Following the initial outbreak of AIDS cases in the early 1980s, researchers set to work developing tests that would indicate infection with HIV. This lesson will describe the testing process. It will also examine what happens to an individual who tests **HIV-reactive**, or "positive"—that is, *infected with HIV*.

HEALTH TERMS

HIV-reactive

ELISA (EIA)

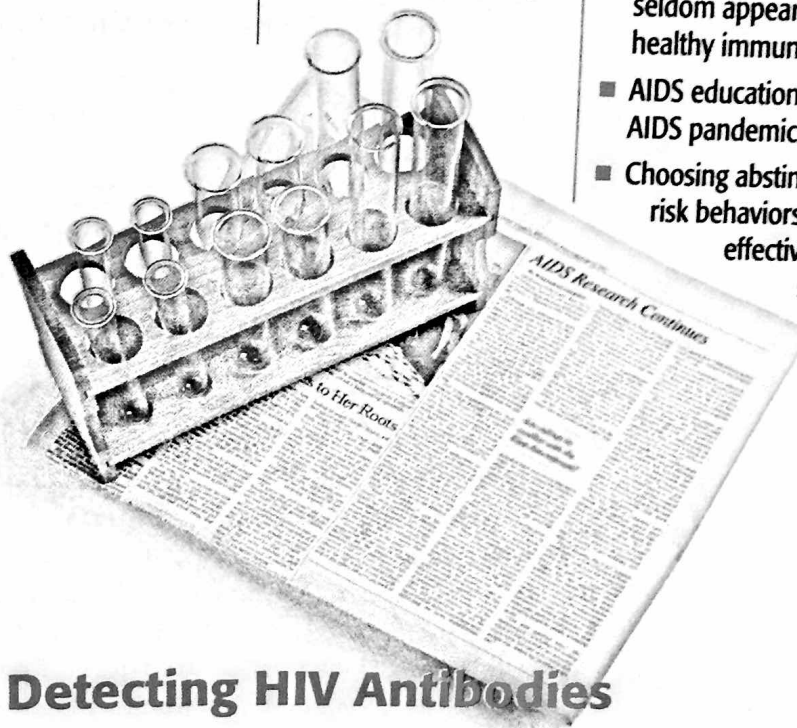
confirmatory test

asymptomatic stage

AIDS-opportunistic illnesses (AIDS-OIs)

HEALTH CONCEPTS

- A number of tests are used to detect the presence of HIV antibodies.
- AIDS interferes with the normal functioning of the immune system, making patients prey to a host of AIDS-opportunistic illnesses that seldom appear in people with healthy immune systems.
- AIDS education can help stem the AIDS pandemic.
- Choosing abstinence from high-risk behaviors is the 100 percent effective way to limit the spread of HIV infection.



Detecting HIV Antibodies

Just as there are misconceptions about how HIV is spread, there are also misunderstandings about the tests used to indicate whether a person is HIV-reactive. There are two phases of testing that may be done in suspected cases of HIV infection. Together, the tests have an accuracy level of greater than 99 percent.

HIV Testing

Persons who suspect they are infected with HIV due to high-risk behaviors are urged to seek testing. It takes anywhere from two weeks to six months for the body to produce antibodies following infection. Individuals are advised to see a health professional right away and to

avoid all behaviors known to transmit HIV. After six months, testing should indicate accurately whether infection is present in the body.

The first test performed, **ELISA**—or **EIA**—*is a test that screens for the presence of HIV antibodies in the blood*, not a test for HIV infection or AIDS. The ELISA (EIA) is very sensitive and will be reactive even if there are only one or two antibodies in the blood sample. Because certain health conditions such as hemophilia, hepatitis, and pregnancy can cause “false” reactive readings, the ELISA (EIA) may be repeated if the first test proves reactive. A reactive ELISA (EIA) will be followed up by a second **confirmatory test**, *a highly accurate test used to confirm the results of a reactive ELISA (EIA)*. One of three different tests—the Western blot test, the IFA, or the RIA—will be administered for this purpose. A reactive confirmatory test result means that the person has HIV antibodies in his or her blood. This person is infected with HIV, although he or she may show no signs of infection at the time of the test. A non-reactive test means that there were no HIV antibodies in the sample of blood and that the person is not infected. If, however, a person subsequently becomes exposed to HIV through a risk behavior—or if the test was done within six months of the suspected risk incident—he or she will need to be retested.

Symptoms of HIV Infection

A person infected with HIV may or may not experience illness. In fact, a person infected with HIV can feel and look healthy. However, this individual can still infect others when practicing behaviors known to transmit HIV. A person can be infected with HIV for years before showing signs of infection. The earliest phase of HIV infection is the **asymptomatic** (AY-sim-tuh-MAT-ik) **stage**. *This is a period of months or years during which the virus is present in the blood but there are no symptoms or signs of disease.*

Although symptoms of HIV infection may not appear for six months to 10–12 years, a person infected with HIV will almost always develop AIDS. During that period, a person infected with HIV will go through a number of stages, each accompanied by different signs and symptoms. In the symptomatic stage, symptoms—which include fever, rash, headache, body aches, and swollen glands—may be mistaken for those of flu. Although these symptoms may pass over time, the person’s ability to fight pathogens decreases, along with his or her T-helper cell count.

Diagnosis of AIDS

Yet another misconception is that AIDS itself is a disease. In point of fact, AIDS is a disorder associated with the last stage in the course of HIV infection. Once the immune system fails, the person’s body is open to a host of infections that can attack other systems and create serious illness.



keeping
Fit

Good News, Bad News

It is true that some people with HIV/AIDS are living healthier and longer lives than a few years ago. This is in large part due to new potent medicines and combinations of medicines. However, the news about HIV/AIDS is definitely not all good. No one should be fooled into thinking HIV/AIDS is no longer a terrible and deadly threat. Consider these facts:

- Potent new medicines and combinations of medicines do not work for everyone.
- Many of these cause terrible side effects—so terrible that some infected people stop using them.
- Many of these new medicines are too expensive for some people.
- Medicine therapies often involve complex schedules of pill-taking, including large numbers of pills to take throughout the day and night and at exact times.

AIDS-opportunistic illnesses (AIDS-OIs) are infections and other diseases caused by organisms that do not usually produce illness in healthy people with unimpaired immune systems. Several infectious diseases, as well as a number of cancers and diseases that damage the heart and nervous system, are typically associated with AIDS. In addition to a reactive test result for HIV antibodies and a T-helper cell count of under 200, diagnosis of AIDS is based on the presence of one or more AIDS-OIs. AIDS-OIs are the eventual cause of death in AIDS patients.

Common AIDS-OIs

Some of the more common AIDS-OIs are diseases that have been discussed in other chapters, or variations of such diseases. These include tuberculosis as well as the following:

- **Mycobacterium Avium Complex (MAC or MAI).** MAC is a bacterial infection. Its symptoms include persistent fever, night sweats, fatigue, weight loss, chronic diarrhea, anemia, abdominal pain, weakness, dizziness, and nausea.
- **Cryptococcosis (Cryptoccal Disease).** Cryptococcosis (krip-tuh-kaw-KOK-sis) is a fungal infection that may cause meningitis—inflammation of the coverings of the brain—or a form of pneumonia. The symptoms of meningitis include headache, stiffness in the neck, fever, blurred vision, a staggering gait, and fatigue. Untreated, the infection may end in coma and death.
- **Pneumocystis Carinii Pneumonia (PCP).** PCP is a protozoal infection that causes a form of pneumonia. Its symptoms include difficulty in breathing, fever, and persistent cough.
- **Toxoplasmosis Gondii (Toxo).** Toxo is a protozoal infection that can cause encephalitis. It is characterized by an altered mental state—confusion, lethargy, and delusional behavior—as well as paralysis on one side of the body, seizures, severe headaches, fever, and coma.
- **Cytomegalovirus (CMV).** CMV is a viral infection with symptoms that include blurry vision, blindness, pain and difficulty swallowing, lesions in the esophagus, fever, diarrhea, abdominal pain, wasting, and eventual blindness.
- **AIDS-Related Cognitive Motor Dysfunction.** Formerly known as AIDS dementia complex, this condition is a progressive disorder in which brain tissue is destroyed. Symptoms range from mild confusion to inability to control one's muscular movement.
- **Peripheral Nerve/Spinal Cord Dysfunction.** This is an inflammation of the nerves connecting the central nervous system to the sensory organs, muscles, glands, and internal organs. Symptoms include numbness, tingling, pain, and muscle weakness.

Many of these illnesses are accompanied by wasting syndrome, an infection of the cells lining the intestine. The symptoms include

extreme weight loss, weakness, fever, diarrhea, nausea, and inability to absorb food.

Research and Treatment

The search for a vaccine to prevent HIV infection is ongoing. Research is also being done on medical treatments to prolong the life of persons infected with HIV and even reverse symptoms of HIV-related illnesses and AIDS. Scientists have isolated chemicals that need to be present in a person's body in order for HIV to infect that person's cells. Understanding how the virus works is a key to finding out how to stop it from reproducing.

Once HIV enters the body, it begins producing copies of itself at a rate of about one billion a day. Every day the body produces new immune cells to fight the virus, and eventually the immune system becomes exhausted and overwhelmed by the virus. To prevent this from occurring, researchers have geared their treatment efforts toward attacking the virus as soon as possible after the initial infection.

The U.S. Food and Drug Administration has approved several new medications that interfere with HIV's ability to reproduce. A new class of medications, *protease inhibitors* (PROH-tee-ayz in-HIB-uh-tuhrs), when used in combination with other antiviral medications such as zidovudine (zih-DOH-vyoo-deen) (AZT) and 3TC, has considerably reduced the amount of HIV in infected individuals. A recently completed clinical trial has determined that giving AZT to a pregnant woman significantly reduces the rate of maternal-fetal transmission of HIV. Effective treatments for AIDS-OIs are prolonging the lives—and improving the quality of life—of people with HIV.

Obstacles to Research and Treatment

Despite the supposed promise of cutting-edge research and treatment, a number of obstacles remain in the fight against HIV and AIDS. One is the nature of the virus itself. HIV belongs to a family of viruses called *retroviruses*, which reproduce in a manner that makes them difficult to combat. Since HIV was first detected, moreover, several new strains of the virus have emerged, further complicating the already enormous difficulties of developing an effective vaccine. Another obstacle to research is lack of appropriate animal models. Still another roadblock is the issue of affordability of treatment. The combination therapies cost tens of thousands of dollars a year, putting them out of the financial reach of many patients.

Preventing the Spread of HIV

Although the hopes of ever finding a cure or vaccine for HIV infection are uncertain at this point, there is some cause for optimism. HIV is, for the most part, preventable. By avoiding high-risk behaviors, staying informed, and making responsible decisions, you can protect yourself and others from infection.

AIDS Education

As opposed to a mere epidemic, AIDS is a *pandemic*—an outbreak of infectious disease of global proportions. The first step toward altering the picture is educating the public. As Dr. C. Everett Koop, former U.S. Surgeon General, has said, “It is important that we all understand this disease, but it is particularly important for young people who are more often involved in behaviors that put them at risk for getting AIDS.”

Abstinence and HIV/AIDS

As noted earlier, a person infected with HIV can look and feel healthy for months or years. As a result, a person can be lured into a false sense of security regarding physical intimacy. The only solution is **abstinence**. You need to say no not only to sexual activity but also to drugs. The following tips can help you practice abstinence from sexual activity and drugs:

- Avoid situations and events where drug use or the pressure to have sexual activity is likely to occur. If you are at a party where things are getting out of control, leave immediately.
- Choose your relationships carefully. Avoid forming a dating relationship with someone whom you know to be sexually active. Avoid known drug users or people who approve of drug use.
- Learn and practice **refusal skills**. Information on strategies for saying no may be found in Chapter 13.

