Basic Information about HIV and AIDS

What are HIV and AIDS?

HIV is the human immunodeficiency virus. It is the virus that can lead to acquired immune deficiency syndrome, or AIDS. CDC estimates that about 56,000 people in the United States contracted HIV in 2006. There are two types of HIV, HIV-1 and HIV-2. In the United States, unless otherwise noted, the term “HIV” primarily refers to HIV-1.

Both types of HIV damage a person’s body by destroying specific blood cells, called CD4+ T cells, which are crucial to helping the body fight diseases.

Within a few weeks of being infected with HIV, some people develop flu-like symptoms that last for a week or two, but others have no symptoms at all. People living with HIV may appear and feel healthy for several years. However, even if they feel healthy, HIV is still affecting their bodies. All people with HIV should be seen on a regular basis by a health care provider experienced with treating HIV infection. Many people with HIV, including those who feel healthy, can benefit greatly from current medications used to treat HIV infection. These medications can limit or slow down the destruction of the immune system, improve the health of people living with HIV, and may reduce their ability to transmit HIV. Untreated early HIV infection is also associated with many diseases including cardiovascular disease, kidney disease, liver disease, and cancer. Support services are also available to many people with HIV. These services can help people cope with their diagnosis, reduce risk behavior, and find needed services.

AIDS is the late stage of HIV infection, when a person’s immune system is severely damaged and has difficulty fighting diseases and certain cancers. Before the development of certain medications, most people with AIDS would die within a few years. Support and services are available to help people cope with an AIDS diagnosis, reduce risk behavior, and find needed services.
and certain cancers. Before the development of certain medications, people with HIV could progress to AIDS in just a few years. Currently, people can live much longer - even decades - with HIV before they develop AIDS. This is because of “highly active” combinations of medications that were introduced in the mid 1990s.

No one should become complacent about HIV and AIDS. While current medications can dramatically improve the health of people living with HIV and slow progression from HIV infection to AIDS, existing treatments need to be taken daily for the rest of a person’s life, need to be carefully monitored, and come with costs and potential side effects. At this time, there is no cure for HIV infection. Despite major advances in diagnosing and treating HIV infection, in 2007, 35,962 cases of AIDS were diagnosed and 14,110 deaths among people living with HIV were reported in the United States.

Read our Questions and Answers about HIV and AIDS science.

Where did HIV come from?

Scientists identified a type of chimpanzee in West Africa as the source of HIV infection in humans. They believe that the chimpanzee version of the immunodeficiency virus (called simian immunodeficiency virus or SIV) most likely was transmitted to humans and mutated into HIV when humans hunted these chimpanzees for meat and came into contact with their infected blood. Over decades, the virus slowly spread across Africa and later into other parts of the world.

For more information, read our Question and Answer about where HIV came from.

HIV-2

In 1986, a second type of HIV, called HIV-2, was isolated from AIDS patients in West Africa. HIV-2 has the same modes of transmission as HIV-1 and is associated with similar opportunistic infections and AIDS. In persons infected with HIV-2, immunodeficiency seems to develop more slowly and to be milder, and those with HIV-2 are comparatively less infectious early in the course of infection. As the disease advances, HIV-2 infectiousness seems to increase; however, compared with HIV-1, the duration of this increased infectiousness is shorter.

HIV-2 infections are predominantly found in Africa. West African nations with a prevalence of HIV-2 of more than 1% in the general population are Cape Verde, Côte d'Ivoire (Ivory Coast), Gambia, Guinea-Bissau, Mali, Mauritania, Nigeria, and Sierra Leone. Other West African countries reporting HIV-2 are Benin, Burkina Faso, Ghana, Guinea, Liberia, Niger, São Tomé, Senegal, and Togo. Angola and Mozambique are other African nations where the prevalence of HIV-2 is more than 1%.

The first case of HIV-2 infection in the United States was diagnosed in 1987. Since then, the Centers for Disease Control and Prevention (CDC) has worked with state and local health departments to collect demographic, clinical, and laboratory data on persons with HIV-2 infection.
How is HIV spread?

You may have heard rumors or myths about how HIV is transmitted. Learn the facts by reading our questions and answers about **HIV Transmission**.

HIV is spread primarily by:

- Not using a condom when having sex with a person who has HIV. All unprotected sex with someone who has HIV contains some risk. However:
  - Unprotected anal sex is riskier than unprotected vaginal sex.
  - Among men who have sex with other men, unprotected receptive anal sex is riskier than unprotected insertive anal sex.
- Having multiple sex partners or the presence of other sexually transmitted diseases (STDs) can increase the risk of infection during sex. Unprotected oral sex can also be a risk for HIV transmission, but it is a much lower risk than anal or vaginal sex.
- Sharing needles, syringes, rinse water, or other equipment used to prepare illicit drugs for injection.
- Being born to an infected mother—HIV can be passed from mother to child during pregnancy, birth, or breast-feeding.

Less common modes of transmission include:

- Being "stuck" with an HIV-contaminated needle or other sharp object. This risk pertains mainly to healthcare workers.
- Receiving blood transfusions, blood products, or organ/tissue transplants that are contaminated with HIV. This risk is extremely remote due to the rigorous testing of the U.S. blood supply and donated organs/tissue.
- HIV may also be transmitted through unsafe or unsanitary injections or other medical or dental practices. However, the risk is also remote with current safety standards in the U.S.
- Eating food that has been pre-chewed by an HIV-infected person. The contamination occurs when infected blood from a caregiver’s mouth mixes with food while chewing. This appears to be a rare occurrence and has only been documented among infants whose caregiver gave them pre-chewed food.
- Being bitten by a person with HIV. Each of the very small number of cases has included severe trauma with extensive tissue damage and the presence of blood. There is no risk of transmission if the skin is not broken.
- Contact between broken skin, wounds, or mucous membranes and HIV-infected blood or blood-contaminated body fluids. These reports have also been extremely rare.
- There is an extremely remote chance that HIV could be transmitted during "French" or deep, open-mouth kissing with an HIV-infected person if the HIV-infected person’s
mouth or gums are bleeding.

- Tattooing or body piercing present a potential risk of HIV transmission, but no cases of HIV transmission from these activities have been documented. Only sterile equipment should be used for tattooing or body piercing.

- There have been a few documented cases in Europe and North Africa where infants have been infected by unsafe injections and then transmitted HIV to their mothers through breastfeeding. There have been no documented cases of this mode of transmission in the U.S.

HIV cannot reproduce outside the human body. It is not spread by:

- Air or water.
- Insects, including mosquitoes. Studies conducted by CDC researchers and others have shown no evidence of HIV transmission from insects.
- Saliva, tears, or sweat. There is no documented case of HIV being transmitted by spitting.
- Casual contact like shaking hands or sharing dishes.
- Closed-mouth or “social” kissing.

All reported cases suggesting new or potentially unknown routes of transmission are thoroughly investigated by state and local health departments with assistance, guidance, and laboratory support from CDC.

**How do HIV tests work?**

The most commonly used HIV tests detect HIV antibodies – the substances the body creates in response to becoming infected with HIV. There are tests that look for HIV’s genetic material or proteins directly; these may also be used to find out if someone has been infected with HIV.

It can take some time for the immune system to produce enough antibodies for the antibody test to detect, and this “window period” between infection with HIV and the ability to detect it with antibody tests can vary from person to person. During this time, HIV viral load and the likelihood of transmitting the virus to sex or needle-sharing partners may be very high. Most people will develop detectable antibodies that can be detected by the most commonly used tests in the United States within 2 to 8 weeks (the average is 25 days) of their infection. Ninety-seven percent (97%) of persons will develop detectable antibodies in the first 3 months. Even so, there is a small chance that some individuals will take longer to develop detectable antibodies. Therefore, a person should consider a follow-up test more than three months after their last potential exposure to HIV. In extremely rare cases, it can take up to 6 months to develop antibodies to HIV.

Conventional HIV tests are sent to a laboratory for testing, and it can take a week or two before the test results are available. There are also rapid HIV tests available that can give results in as little as 20 minutes. A positive HIV test result means that a person may have been infected with HIV. All positive HIV test results, regardless of whether they are from rapid or conventional tests, must be verified by a second “confirmatory” HIV test.

Read our Questions and Answers about HIV testing.
How can HIV be prevented?

Because the most common ways HIV is transmitted is through anal or vaginal sex or sharing drug injection equipment with a person infected with HIV, it is important to take steps to reduce the risks associated with these. They include:

- Know your HIV status. Everyone between the ages of 13 and 64 should be tested for HIV at least once. If you are at increased risk for HIV, you should be tested for HIV at least once a year.
  - If you have HIV, you can get medical care, treatment, and supportive services to help you stay healthy and reduce your ability to transmit the virus to others.
  - If you are pregnant and find that you have HIV, treatments are available to reduce the chance that your baby will have HIV.

  Locate an HIV testing site.

- Abstain from sexual activity or be in a long-term mutually monogamous relationship with an uninfected partner.

- Limit your number of sex partners. The fewer partners you have, the less likely you are to encounter someone who is infected with HIV or another STD.

- Correct and consistent condom use. Latex condoms are highly effective at preventing transmission of HIV and some other sexually transmitted diseases. "Natural" or lambskin condoms do not provide sufficient protection against HIV infection.

- Get tested and treated for STDs and insist that your partners do too.

  Locate an STD testing site.

- Male circumcision has also been shown to reduce the risk of HIV transmission from women to men during vaginal sex.

- Do not inject drugs. If you inject drugs, you should get counseling and treatment to stop or reduce your drug use. If you cannot stop injecting drugs, use clean needles and works when injecting.

  Locate resources on substance abuse treatment.

- Obtain medical treatment immediately if you think you were exposed to HIV. Sometimes, HIV medications can prevent infection if they are started quickly. This is called post-exposure prophylaxis.

- Participate in risk reduction programs. Programs exist to help people make healthy decisions, such as negotiating condom use or discussing HIV status. Your health department can refer you to programs in your area.

  Read our Questions and Answers about HIV Prevention.
If you would like more information or have personal concerns, call CDC-INFO 8A-8P (EST) M-F. Closed weekends and major federal holidays at 1-800-CDC-INFO (232-4636), 1-888-232-6348 (TTY), in English, en Español.

Many of the facts explained above come from studies published in scientific journals. Some of those studies are listed below.


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