

HIV/AIDS

Patient Information Fact Sheet

›What is HIV/AIDS?

Human immunodeficiency virus (HIV) is a type of infection that can cause acquired immune deficiency syndrome (AIDS). HIV can remain “silent” for years after exposure to it. Left untreated, the virus can destroy disease-fighting cells known as CD4+ T cells. This in turn weakens the immune system and makes it difficult for the body to fight life-threatening infections and cancers.

While greater awareness of HIV, combined with earlier initiation of treatment, has helped to contain the spread of the virus, HIV/AIDS is still considered an epidemic. According to statistics from the World Health Organization, 1.7 million people died from AIDS worldwide in 2011 and 2.5 million became newly infected with the virus. The number of people living with HIV totaled 34 million, including 16.7 million women and 3.3 million children under the age of 15.

According to the Centers for Disease Control and Prevention, 19,300 people in the United States died from AIDS in 2010, the most current statistics available. The highest rates of new infection are predominantly among gay and bisexual men, followed by African Americans and Hispanics/Latinos.

›What are the symptoms of HIV/AIDS?

Within a couple of weeks to a month or two after being exposed to HIV, some people will experience flu-like symptoms (fever, sore throat, diarrhea, etc.) that last for roughly 1–2 weeks. Some of these symptoms, including swelling of the lymph nodes, can persist for 8–10 years as the virus slowly begins to spread. Some people may have no specific symptoms and may feel healthy overall. If the virus isn't treated, however, the symptoms may become chronic and be accompanied by more serious ones—weight loss, fatigue, night sweats, shortness of breath, and blurred vision, among others—as the disease progresses to AIDS, by which time the immune system has been severely compromised.

›What causes HIV/AIDS?

HIV is primarily spread when someone who's already infected with the virus has unprotected vaginal or anal sex with a person who isn't infected. Oral sex can also transmit the disease, but the chance of this is far less than with anal or vaginal contact. Overall, sexual transmission of HIV accounts for the majority of all new infections. The virus can't be spread through casual contact. The virus also cannot be spread through the sharing of toilet seats or food utensils.

In addition to being transmitted through semen or vaginal secretions, HIV can also be contracted through breast-feeding, from mother to child, or from infected blood—tainted needles or syringes shared by IV drug users being the most common route of transmission.

Blood transfusions are another way the virus can be spread, although the odds of being infected this way are extremely slim these days, due to more-thorough testing regimens for blood and donated organs/tissue.



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›What tests confirm a diagnosis of HIV/AIDS?

A conventional HIV test detects antibodies to HIV, using a sample of blood, urine, or saliva. But because it can take weeks for the immune system to produce these antibodies in response to an infection, there's a "window period" between a potential exposure to HIV and test results. According to the CDC, 97% of people develop detectable antibodies to HIV within 3 months, but some may take as long as 6 months.

If there's a strong suspicion of infection, a plasma HIV RNA test can detect HIV within 9 days of contracting the virus. If the result is positive, a second test, called a Western blot test, is ordered to confirm that a person has HIV. (Negative results, too, may need to be confirmed with a second test 3–6 months after suspected exposure.) Further tests—including those for CD4 count, viral load, and drug resistance—are used to determine which combination of drugs is likely to be most effective.

Early detection is crucial to preventing the spread of HIV: Findings released in 2011 from a multi-country study revealed that early testing and treatment can lower patients' risk of transmitting HIV to an uninfected sexual partner by 96%.

›How is HIV/AIDS treated?

There is no vaccine FDA-approved for immunization against HIV infection.

Although no drug will completely cure the virus, there are many anti-HIV medications that aid in preventing the virus from advancing to AIDS. If taken every day, they can allow patients to live long and productive lives. Typically, three or more drugs from at least two different classes are prescribed in combination with one another, to prevent the possibility that a single drug will develop resistance. This is referred to as antiretroviral therapy, or ART. The classes of HIV/AIDS medications are:

- *Non-nucleoside reverse transcriptase inhibitors (NNRTIs)*—**delavirdine** (Rescriptor), **efavirenz** (Sustiva), **etravirine** (Intencele), **nevirapine** (Viramune), **rilpivirine** (Edurant)
- *Nucleoside reverse transcriptase inhibitors (NRTIs)*—**abacavir** (Ziagen), **didanosine** (Videx) **emtricitabine** (Emtriva), **lamivudine** (Epivir), **stavudine** (Zerit), **zidovudine** (Retrovir)
- *Nucleotide reverse transcriptase inhibitors*—**adefovir dipivoxil** (Hepsera), **tenofovir disoproxil** (Viread)
- *Protease inhibitors*—**atazanavir** (Reyataz), **darunavir** (Prezista), **fosamprenavir** (Lexiva), **indinavir** (Crixivan), **lopinavir** (Kaletra), **nelfinavir** (Viracept), **ritonavir** (Norvir), **saquinavir** (Invirase), **tipranavir** (Aptivus)
- *Fusion inhibitors*—**enfuvirtide** (Fuzeon)
- *Integrase inhibitors*—**raltegravir** (Isentress)
- *CCR5 antagonists*—**maraviroc** (Selzentry)

These drugs are designed to disable proteins that HIV needs to replicate, and to prevent the virus from entering and destroying healthy CD4 cells. The choice of which drugs are best for which types of patients is continually evolving. Combination therapies involving two or more of these classes of drugs are also available. The US Department of Health and Human Services develops and publishes updated guidelines on the use of antiretroviral agents in HIV-infected adults and adolescents.

In June 2012, the World Health Organization presented the concept of reducing the spread of HIV by using antiretroviral therapy, Antiretroviral Treatment as Prevention (TasP), before any patients are infected to decrease transmission. The consolidated guidelines are expected to be released in mid-2013.

› **Further information**

Centers for Disease Control and Prevention: www.cdc.gov/hiv/topics/basic

Department of Health and Human Services: www.aidsinfo.nih.gov/

Mayo Clinic: www.mayoclinic.com/health/hiv-aids/DS00005

National Institute of Allergy and Infectious Diseases: www.niaid.nih.gov/topics/hivaids/Pages/Default.aspx

World Health Organization: www.who.int/hiv/en/

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