



The Facts About HIV and AIDS

Human Immunodeficiency Virus (HIV)

What is HIV infection?

HIV infection is caused by the human immunodeficiency virus (HIV). HIV is a special kind of virus, called a retrovirus.

If a person with an HIV infection does not receive any treatment, HIV will progressively destroy that person's immune system and cause the disease AIDS (acquired immune deficiency syndrome).

How common is HIV infection?

In 2014, the United Nations estimated that 36.9 million people worldwide are living with human immunodeficiency virus infection and 2 million people had become newly infected, and that 1.2 million people died from this infection.¹

In the US, 1 million people are living with HIV infection. Over 47,000 people in the United States become newly infected with HIV each year. The total number of cases of HIV infection in the US have doubled between 1996 and 2012.²

The CDC estimates that of all of the people in the US living with HIV, 16% do not know that they are infected.³

How is HIV infection spread?

There are different transmission routes for HIV. It can be spread through vaginal, anal, and oral sex.

HIV can also be spread from a pregnant mother to her baby, in the womb or during delivery. It can also be spread through breast feeding from an infected mother to her baby.

The easiest way to spread HIV is through blood. Many people were infected with HIV through blood transfusions in the early 1980's. Because of screening programs, this is exceedingly rare now. However, IV drug users who share needles are still at risk of getting an HIV infection this way.

HIV infection is not spread through casual contact, like shaking hands and hugging.

Does HIV infection cause symptoms?

Within several weeks of being infected with HIV, a person may develop early symptoms of HIV; however, up to 45% of infected people have no symptoms of early HIV infection.⁴

What are the symptoms of HIV infection?

When early symptoms do develop, they are not specific for HIV. Such symptoms include fever, decreased appetite, sore throat, and fatigue.⁴

Early symptoms only last a few weeks, even though the virus continues to live and reproduce throughout the body.⁴

In order to reproduce, HIV invades certain cells of the immune system called helper T cells or CD4 cells. HIV uses the internal machinery of these cells to make copies of itself. It then



destroys the cell, releasing new viruses. These new HIV copies then invade other CD4 cells and start the multiplication process over again.⁴

Over a period of about 3-12 years, the continued invasion and destruction of CD4 cells critically weakens a person's defenses against a variety of other infections and cancers.³

Once this happens, an infected person will have symptoms related to many different infections and cancers.

Are there any treatments for HIV infection available?

Many new medications have been developed over the last 30 years to treat HIV. These medicines are able to greatly extend the lives of people with HIV. Unfortunately, there is no cure for HIV.

Once a person is infected, they are infected for life. Most infected people will need to take multiple HIV medications every day for the rest of their lives to avoid suffering the life-threatening complications of AIDS.

What complications can result from HIV infection?

If a person does not receive HIV therapy, or if they become resistant to the medication, they will progress to the last stage of HIV infection – AIDS. Because HIV gradually destroys the immune system, people with AIDS are very susceptible to infections and cancers. Without effective HIV therapy, most people with AIDS die within 1-2 years.⁴

HIV-infected mothers can pass the infection on to their baby during pregnancy, delivery, or breastfeeding. Without HIV medicine and other available interventions, infected mothers pass HIV to their babies 30% of the time. With medicines and other medical interventions, the risk of passing HIV from a mother to a baby is significantly reduced to less than 2%.³

Can HIV infection be prevented?

Yes. By refraining from sexual activity until a person is in a lifelong, mutually monogamous relationship with an uninfected partner, they can prevent the sexual transmission of HIV infection.

Pregnant women should be screened for HIV to prevent the spread of HIV infection to babies. Exposure to infected blood should also be avoided to prevent the transmission of HIV infection. Post-exposure medication is now offered to partners of HIV infected individuals who were exposed within the preceding 72 hours through sex or needle sharing with the hope of preventing infection.³

References:

1. UNAIDS. United Nations Global AIDS report 2015. Available at http://www.unaids.org/sites/default/files/media_asset/20150714_FS_MDG6_Report_en.pdf Accessed July, 2015.
2. Centers for Disease Control and Prevention. HIV Surveillance Report, 2013; vol. 25. <http://www.cdc.gov/hiv/library/reports/surveillance/>. Published February 2015. Accessed July, 2015.
3. Centers for Disease Control and Prevention, "Sexually Transmitted Diseases Treatment Guidelines, 2015," MMWR Reomm Rep 2015; 64(no. RR) p 21-25
4. Sterling TR, Chaisson RE. H. General clinical manifestations of human immunodeficiency virus infection (including the acute retroviral syndrome and oral, cutaneous, renal, ocular, and cardiac diseases). In: Mandell GL, Bennett JE, Dolin R, eds. *Principles and Practice of Infectious Diseases*. 6th ed. Philadelphia:Elsevier; 2005:1546-1566.