

# Epidemiology of HIV/AIDS: A Comprehensive Guide

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HIV is a virus that damages the immune system. Untreated HIV affects and kills CD4 cells, which are a type of immune cell called T cell. Over time, as HIV kills more CD4 cells, the body is more likely to get various types of conditions and cancers.

The virus isn't transferred in air or water, or through casual contact. Because HIV inserts itself into the DNA of cells, it's a lifelong condition and currently there's no drug that eliminates HIV from the body, although many scientists are working to find one.

However, with medical care, including treatment called antiretroviral therapy, it's possible to manage HIV and live with the virus for many years. Without treatment, a person with HIV is likely to develop a serious condition called the Acquired Immunodeficiency Syndrome, known as AIDS. At that point, the immune system is too weak to successfully respond against other diseases, infections, and conditions.

Untreated, life expectancy with end stage AIDS is about 3 years<sup>Trusted Source</sup>. With antiretroviral therapy, HIV can be well-managed, and life expectancy can be nearly the same as someone who has not contracted HIV. It's estimated that 1.2 million Americans are currently living with HIV. Of those people, 1 in 7 doesn't know they have the virus. HIV can cause changes throughout the body. Learn about the effects of HIV on the different systems in the body.

## AIDS

AIDS is a disease that can develop in people with HIV. It's the most advanced stage of HIV. But just because a person has HIV doesn't mean AIDS will develop.

HIV kills CD4 cells. Healthy adults generally have a CD4 count of 500 to 1,600 per cubic millimeter. A person with HIV whose CD4 count falls below 200 per cubic millimeter will be diagnosed with AIDS. A person can also be diagnosed with AIDS if they have HIV and develop an opportunistic infection or cancer that's rare in people who don't have HIV.

An opportunistic infection such as *Pneumocystis jirovecii* pneumonia is one that only occurs in a severely immunocompromised person, such as someone with advanced HIV infection (AIDS). Untreated, HIV can progress to AIDS within a decade. There's currently no cure for AIDS, and without treatment, life expectancy after diagnosis is about 3 years<sup>Trusted Source</sup>. This may be shorter if the person develops a severe opportunistic illness. However, treatment with antiretroviral drugs can prevent AIDS from developing.

If AIDS does develop, it means that the immune system is severely compromised, that is, weakened to the point where it can no

longer successfully respond against most diseases and infections. That makes the person living with AIDS vulnerable to a wide range of illnesses, including: pneumonia, tuberculosis, oral thrush, a fungal condition in the mouth or throat cytomegalovirus (CMV), a type of herpes virus cryptococcal meningitis, a fungal condition in the brain toxoplasmosis, a brain condition caused by a parasite cryptosporidiosis, a condition caused by an intestinal parasite cancer, including Kaposi sarcoma (KS) and lymphoma.

The shortened life expectancy linked with untreated AIDS isn't a direct result of the syndrome itself. Rather, it's a result of the diseases and complications that arise from having an immune system weakened by AIDS.

As HIV lowers the CD4 cell count, the immune system weakens. A typical adult's CD4 count is 500 to 1,500 per cubic millimeter. A person with a count below 200 is considered to have AIDS.

How quickly a case of HIV progresses through the chronic stage varies significantly from person to person. Without treatment, it can last up to a decade before advancing to AIDS. With treatment, it can last indefinitely.

There's currently no cure for HIV, but it can be managed. People with HIV often have a near-normal lifespan with early treatment with antiretroviral therapy. Along those same lines, there's technically no cure for AIDS currently. However, treatment can increase a person's CD4 count to the point where they're considered to no longer have AIDS. (This point is a count of 200 or higher.) Also, treatment can typically help manage opportunistic infections. HIV and AIDS are related, but they're not the same thing.