What is AIDS? [1]

Dear Alice,

What is AIDS?

? Wondering

Answer

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AIDS stands for Acquired Immunodeficiency Syndrome and is caused by the Human Immunodeficiency Virus (HIV). HIV infects certain types of white blood cells, mainly CD4 cells (also called helper cells or T4 cells), which are the cells in the immune system that normally protect us from disease. By damaging and killing the protective CD4 cells, HIV weakens the immune system. The term "AIDS" refers to the most advanced stage of the course of HIV infection (and can also be called "advanced HIV disease") that damages a person's ability to fight disease, leaving the body susceptible to infections and illnesses that can become fatal.

The U.S. Centers for Disease Control and Prevention (CDC) develops the official definition for AIDS. A clinical diagnosis of AIDS is given if someone has tested positive for HIV and meets at least one of the following criteria:

- Has experienced one or more infections or illnesses [2] associated with the severe immunodeficiency caused by HIV
- Has a CD4 cell count below 200 per cubic millimeter of blood (in healthy people, the CD4 count is usually between 500 and 1200 cells per cubic millimeter)
- Has a certain type of cancer ? Kaposi ?s sarcoma, anal cancer, invasive cervical cancer, or primary central nervous system lymphoma

For most HIV-infected people, the number of CD4 cells decreases gradually. Though for some individuals, the drop may be sudden and dramatic. The decreasing CD4 count may result in symptoms and illnesses months or years before the actual progression to AIDS. Without treatment, most people will meet the criteria for an AIDS diagnosis within about ten years after being infected with HIV. However, this period can be shorter, depending on the individual.

A person with a damaged immune system is susceptible to various infections and illnesses, such as recurrent pneumonia, lymphoma (cancer of the immune system), and Kaposi's sarcoma (a malignant tumor of the connective tissue). These conditions are known as
opportunistic infections, which are caused by microbes that take advantage of a weakened immune system (but are typically not as harmful to healthy people). For people with AIDS, these conditions may lead to death. The virus can also infect and damage other types of cells, which can lead to additional problems. For example, damage to intestinal cells can lead to wasting (severe weight loss), and damage to nerve cells can cause neurological problems such as dementia and blindness.

The good news regarding this devastating disease is that with effective treatment, people with HIV are living longer and healthier lives. However, globally, the majority of people living with HIV or AIDS are in low- and middle-income countries, where access to treatment is limited or unavailable. It is estimated that over 35 million people are living with HIV or AIDS worldwide. About 71 percent of people living with HIV or AIDS are in Sub-Saharan Africa. In the United States, approximately 1.2 million people are living with HIV and another 430,000 are living with AIDS. Some encouraging news is that the number of new infections worldwide each year seems to be decreasing since the late 1990s. However, HIV is still the top-killing infectious disease in the world, and the global community is still long way from extinguishing this destructive disease. In 2013 alone, about 1.5 million people living with AIDS died, and there were approximately 2.1 million new cases of HIV. It’s estimated that since 1981, 39 million people have died from AIDS-related causes.

Unfortunately, many people who are infected with HIV have not been tested and are not aware of their infection. Public health officials estimate that in the United States, 14 percent of people infected with HIV do not know they are infected. This creates a situation where HIV can spread more readily because people do not know they are able to transmit the infection to others and do not take precautions to prevent transmission.

To prevent HIV, people can:

- Get tested so you know your HIV status and be honest with your sexual partners.
- Use a latex condom during anal, vaginal, and oral sex (other options to consider are female condoms for vaginal or anal sex and dental dams during vaginal oral sex).
- Avoid sharing or reusing needles — use a sterile needle and keep needles to yourself.
- If you are pregnant and HIV positive, receiving the proper treatment[^3] can greatly reduce the risk of passing HIV along to the baby.
- Ask your health care provider whether you might be a good candidate for prophylaxis medication to help prevent HIV. Practicing the other recommendations on this list such as using condoms and clean needles are still critical even when taking this type of medication (For more information, read HIV prevention with PEP, PrEP, and ART medications[^4]).

List adapted from the article HIV/AIDS Prevention[^5] from Mayo Clinic.

Many pharmaceutical companies, universities, and research institutions are looking into medications to treat HIV and AIDS-related conditions, vaccines that may prevent infection, and of course a cure for the infection. Current recommendations are for everyone living with HIV to receive antiviral medicine, regardless of CD4 count. Treatment usually consists of a combination of medications that interfere with the virus’s ability to multiply. Although at this time there is no known cure for AIDS, effective treatment can slow the progression of HIV to AIDS, and help people with the infection live significantly longer, healthier lives.

Alice!

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