

## HIV Propagation and its Stages

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### INTRODUCTION

The virus that causes HIV infection is known as the Human Immunodeficiency Virus, or HIV. The term "HIV" can refer to both the virus and HIV infection. The acronym AIDS refers to Acquired Immunodeficiency Syndrome. The most advanced stage of HIV infection is AIDS.

HIV attacks and destroys the immune system's CD4 cells (CD4 T lymphocytes). CD4 cells are a type of white blood cell that helps to defend the body against infection. HIV multiplies and spreads throughout the body via the machinery of CD4 cells. HIV infection progresses in phases without therapy, growing worse over time. HIV damages the immune system over time, leading to Acquired Immunodeficiency Syndrome (AIDS).

Although there is no cure for HIV, treatment with HIV drugs (also known as Antiretroviral Therapy or ART) can reduce or stop the disease from progressing to the next stage. HIV medications allow HIV patients to enjoy longer, healthier lives. The reduction of a person's viral load to undetectable levels is one of the key aims of ART. A viral load that is undetectable suggests that the quantity of HIV in the blood is too low for a viral load test to detect. People with HIV who keep their viral load undetectable have virtually no risk of transmitting HIV to their HIV-negative partner through sex.

### THREE STAGES OF HIV INFECTION

**1. HIV Infection in Its Early Stages:** Acute HIV infection is the most severe form of HIV infection, and it usually appears 2 to 4 weeks after HIV infection. Some patients experience flu-like symptoms such as fever, headache, and rash during this period. HIV multiplies quickly and spreads throughout the body during the acute stage of infection. The virus assaults and kills the immune system's infection-fighting CD4 cells (CD4 T lymphocytes). The amount of HIV in the blood is quite high during the acute stage of HIV infection, which dramatically increases the risk of HIV transmission. If a person begins ART during this time, they may see considerable health advantages.

**2. Infection with HIV for a Long Time:** Chronic HIV infection

is the second stage of HIV infection (also called asymptomatic HIV infection or clinical latency). HIV continues to proliferate in the body at this stage, albeit at a very low level.

People who have been infected with HIV for a long time may not experience any HIV-related symptoms. Chronic HIV infection without Antiretroviral Therapy (ART) normally progresses to AIDS in 10 years or longer, while it might progress faster in certain persons. People who are undergoing ART treatment might be at this stage for decades.

While it is still possible to transmit HIV to others at this stage, those who follow ART instructions to the letter and maintain an undetectable viral load have almost minimal chance of spreading HIV through intercourse to an HIV-negative partner.

**3. AIDS:** AIDS is the most advanced and dangerous stage of HIV infection. The body is unable to fend against opportunistic infections since HIV has severely impaired the immune system. (Infections and infection-related malignancies that develop more frequently or are more severe in persons with impaired immune systems than in those with healthy immune systems are known as opportunistic infections.) If a person's CD4 count is fewer than 200 cells/mm<sup>3</sup> or if they have specific opportunistic diseases, they are diagnosed with AIDS. Once a person has been diagnosed with AIDS, they may have a high viral load and be readily infected with HIV. People with AIDS have a three-year survival rate if they do not receive therapy.

### TREATMENT

The treatment of HIV/AIDS with medicines is called Antiretroviral Therapy (ART). It is recommended for everyone who has HIV. The medicines do not cure HIV infection, but they do make it a manageable chronic condition. They also reduce the risk of spreading the virus to others. Relation to tumor extension. The degree of major vascular involvement by pancreatic cancer is useful in predicting which patients will have surgically resectable tumors. Major vessels with less than one-fourth of their circumference involved by tumors are almost always resectable; tumors that surround more than three-fourths of the circumference are almost always unresectable.

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