

### Overview

The **HIV Test** is a 4<sup>th</sup> generation test used to detect the presence of HIV antigen and antibodies in a blood sample.

Human immunodeficiency virus (HIV) is a sexually transmitted disease, which is transmitted by contact or transfer of blood, semen, pre-ejaculate, and vaginal fluids. HIV can also be transmitted from an infected mother to her infant during pregnancy, childbirth, or through breastmilk.

When HIV infects an individual, the p24 antigen (a viral core protein from HIV) is usually detectable within 2–3 weeks of exposure. The body's immune system also produces antibodies in response to the HIV infection, but these can take longer to reach detectable levels. This 4<sup>th</sup> generation test detects both the p24 antigen and antibodies to HIV.

HIV infects immune system cells, and in the absence of effective treatment, eventually leads to a loss of cell-mediated immunity, and the development of acquired immunodeficiency syndrome (AIDS).

Antiretroviral therapy (ART) is a very effective treatment to prevent the transmission of HIV and the progression to AIDS. Post-exposure prophylaxis (PEP) is also available as an emergency medication to reduce the risk of HIV infection.

### What are the symptoms of HIV?

Many individuals are unaware that they have HIV in the first few months, as they do not display any symptoms, or only experience mild symptoms (e.g., headache, sore throat, fatigue) that can easily be confused with other illnesses. Despite the lack of symptoms, this initial phase of acute HIV infection is when HIV is most infectious. As the viral load increases, other symptoms appear, including swollen lymph nodes, weight loss, high fever, diarrhea, mouth ulcers, muscle aches, and persistent coughing.

The second stage of HIV infection is known as clinical latency (or chronic HIV infection). The virus is still multiplying during this stage, but only at very low levels, and many individuals do not show any symptoms. However, without HIV treatment, individuals in this stage can still transmit HIV.

HIV targets cells of the immune system reducing the ability to fight other infections and eventually progressing to AIDS (stage 3 of HIV infection) in untreated individuals. The symptoms of AIDS can include rapid weight loss, extreme fatigue, pneumonia, skin discoloration, memory loss, depression, and increased susceptibility to other infections such as tuberculosis, severe bacterial infections, and certain cancers.

### Who should consider the HIV Test?

- The CDC recommends that everyone between 13 and 64 years of age should get tested at least once for HIV as part of routine health care.
- Individuals in higher risk populations (e.g., men who have sex with men, injecting drug users, sex workers) should be tested at least annually for HIV.
- HIV screening is recommended in the routine panel of prenatal screening tests for all pregnant women.
- This 4<sup>th</sup> generation HIV test is a laboratory test that can detect HIV with more accuracy and at an earlier stage than 2<sup>nd</sup> generation rapid HIV tests.

### Understanding your HIV Test results

This section includes general interpretation guidelines for understanding your **HIV Test** report. These guidelines may not apply to everyone. Ask your healthcare provider what your results mean for you.

**Table 1. HIV Test Results and Interpretation**

Result	Interpretation
<b>Nonreactive</b>	HIV antigen and antibodies <u>were not</u> detected in the specimen tested. Additional specimens should be collected for testing if clinical symptoms strongly suggest an HIV infection. If recent HIV exposure is suspected or reported, repeat testing is recommended after the “window period” of 45–90 days when HIV antigen and antibodies may not be detected in laboratory assays.
<b>Reactive</b>	HIV antigen and/or antibodies <u>were</u> detected in the specimen tested and supports an HIV diagnosis. However, reactive results must be confirmed by additional testing (the HIV testing algorithm) to be considered indicative of a true HIV infection.
<b>Indeterminate</b>	A new specimen should be collected for retesting.

### What can affect HIV Test results?

A nonreactive (negative) result does not exclude the possibility of infection. False negative test results may occur due to sample collection during the “window period” post-exposure when p24 antigen and HIV antibody levels are below detectable limits.

A reactive (positive) result does not confirm an HIV diagnosis. Confirmatory follow-up testing through a health-care provider is required to be sure of an accurate HIV diagnosis.

### What are the next steps if I receive a reactive test result?

Contact your healthcare provider as soon as possible. Additional analyses are required to confirm a reactive result from this assay. In addition, if a reactive result is confirmed, other tests will be required to determine the stage of HIV infection. These include a CD4+ count and a viral load measurement.

Although there is no cure for HIV, antiretroviral therapy (ART) is a very effective treatment to prevent the progression of HIV and to prevent the transmission of HIV to others. This is a daily medication that must be taken for life. Ongoing tests (e.g., viral load measurement) will be required to ensure that the ART is working.

Talk to your healthcare provider if you have any questions about your test results.

### How can I reduce my risk of HIV?

- Abstinence
- Reduce number of sex partners
- Mutual monogamy (with a tested partner)
- Use condoms correctly and consistently
- Pre-exposure prophylaxis (PrEP) – a daily medication for individuals at high risk of HIV (e.g., partner of an HIV-positive person)
- Post-exposure prophylaxis (PEP) – emergency medication taken within 72 hours of exposure to reduce the risk of infection

### References

1. HIV/AIDS. *World Health Organization*.
2. Symptoms of HIV. *Clinical Info HIV.gov*.