



Patient education: Testing for HIV (Beyond the Basics)

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HIV TESTING OVERVIEW

Human immunodeficiency virus (HIV) testing is used to determine if you have HIV. Some individuals who are at the highest risk for HIV have not been tested, usually because they do not realize that they are at risk. Others avoid testing because they are worried about the possibility of a positive test result.

However, testing is encouraged because treatment for HIV is highly effective and early diagnosis can improve your chances of living longer and being healthier. Furthermore, knowing your HIV status can greatly reduce your risk of passing HIV to others if you take precautions. Antiretroviral medications, which are used to treat HIV, have become simpler and much better tolerated and, if you have HIV, taking these medications regularly leads to a near-normal life expectancy and reduces the risk of transmitting HIV to someone else to virtually zero.

Additionally, if you have risk of acquiring HIV and test negative, you can consider taking pre-exposure prophylaxis (PrEP) medications, which are highly effective at preventing HIV.

WHAT IS HIV?

HIV is a virus that weakens your body's immune system, making it difficult to fight infections and certain cancers. People who have HIV may have no signs or symptoms of their illness, but they can still pass the infection to others through sex or through exposure to contaminated

needles. If HIV is not treated, you will eventually become very ill and may die. The advanced stage of HIV infection is called AIDS (acquired immune deficiency syndrome).

RISK FACTORS FOR HIV INFECTION

Nearly all HIV infections are acquired through sex or exposure to contaminated needles.

You are at increased risk for getting HIV from sex if you:

- Had a sexually transmitted infection
- Had a sexual partner with HIV
- Were a victim of sexual assault (see "[Patient education: Care after sexual assault \(Beyond the Basics\)](#)")
- Are a man or transgender women and had condomless anal sex with a man
- Had condomless sex with multiple partners
- Exchanged sex for money or drugs or have sex partners who do

You are at risk for exposure to HIV through contaminated needles if you have:

- Injected drugs with shared needles or "works"
- Been accidentally stuck with a needle or sharp in a health care facility

Who should be tested for HIV — People should be tested for HIV if they may have been exposed to HIV or have symptoms of HIV infection. Testing and treatment are important for your health and for reducing the risk of passing HIV to other people.

In addition, everyone between the ages of 15 and 65 years old should also complete a test for HIV at least once, regardless of specific risk factors for having HIV. Individuals who are younger than 15 or older than 65 may also benefit from screening if they have risk factors for HIV.

After the initial HIV test, repeat testing at regular intervals is recommended for individuals who are at high risk for infection. (See '[Risk factors for HIV infection](#)' above and '[Frequency of testing](#)' below.)

Reasons for routine HIV screening include:

- The treatment for HIV is highly effective. People with HIV can live a nearly normal lifetime on available drugs. This treatment is most effective when it is started early in the course of HIV infection, before symptoms develop.

- Treating HIV can help prevent spread of infection to others. If you know you have HIV, you can change your behavior so you are less likely to put other people at risk.

Also, taking medications to control the virus reduces the likelihood of transmitting the infection to others (often referred to as "undetectable equals untransmittable," or "U=U"). People with HIV who take medications regularly and keep the virus at a suppressed or undetectable level do not pass the infection to sex partners and can also have children without passing on the infection.

If you request the test from a healthcare provider, they may ask questions about your risk factors and whether or not you have symptoms, which helps the provider select the best test options. For example, if you may have been exposed to HIV very recently or if you have symptoms of acute HIV (such as fever, sore throat, rash, swollen lymph nodes), the optimal test will be one that reveals early infection.

TYPES OF HIV TESTS

Several tests can be used to diagnose HIV infection. Most involve testing your blood. The preferred tests are usually antigen-antibody tests. Antigens are foreign substances in the body (eg, a viral protein) that cause a response from the immune system. Antibodies are the proteins that the body produces to counteract antigens.

Antibody-only tests — These tests detect the presence of antibodies that your body makes against HIV. If the antibody test is positive, the result is confirmed using another test. The second test determines whether the first test was accurate and, if so, whether the infection is from HIV-1 or HIV-2.

Combination antigen-antibody tests — These tests detect both the presence of virus (viral antigens) and the antibodies your body makes against the virus. The combination antigen-antibody tests are better able to identify early HIV infection compared with antibody-only tests. A positive test is followed by a second test to confirm the result.

Tests that measure HIV RNA — Certain tests detect HIV in your blood by measuring HIV RNA (a part of the virus). When the test measures the level of viral RNA in the blood, the result is referred to as the "viral load." In most situations, viral load testing is not better than routine antibody or antigen-antibody testing. The exception is if you believe you acquired HIV very recently, or have symptoms of acute HIV infection, in which case you should notify your provider so they can order a viral load test.

HIV TESTING METHODS

HIV testing can be performed in different ways (eg, rapid versus standard), and in different settings (eg, in a doctor's office or clinic or mobile testing service versus at home). All positive screening tests should be confirmed with another test.

Rapid tests — Rapid tests for HIV use blood from a finger prick or oral fluids. These tests provide results within 5 to 40 minutes and are useful because they do not require that you go back on another day for your results. A positive result must be confirmed with additional testing. A negative test does not have to be confirmed.

Standard tests — The standard HIV test uses a sample of blood taken from a vein. These tests are performed in a laboratory, and the results are usually available in a few days.

Point-of-care tests — These tests give results at the same location where they are conducted, as opposed to waiting for a result from the laboratory. They may test oral fluids or whole blood (via a fingerstick), and often are rapid tests. Positive tests should be confirmed by laboratory-based tests.

Anonymous testing — Anonymous testing allows you to be tested without disclosing your identity and is offered in some areas.

Home testing — Home test kits provide anonymous results and are available in most pharmacies. One type of test requires a small sample of blood, which is obtained by pricking the finger. The blood is blotted on a filter strip and mailed to a lab. The lab performs the test and calls you with the result. The results of the test are confidential and are not reported to anyone but you.

Another home-based test, called "OraQuick," uses oral fluids instead of blood. These are done at home. All positive test results should be confirmed by tests your health care provider can order. In addition, if you believe you acquired HIV very recently, the home tests are not as accurate, and you should have regular lab-based testing.

HIV TESTING PROCEDURE

Frequency of testing — Guidelines recommend an HIV test for all people age 15 to 65. A repeat test should be performed if you have new risk factors, such as a new sex partner who is known to be at risk for HIV. People who are at high risk for HIV, such as men who have sex with men,

injection drug users, and those with multiple sex partners or a partner known to have HIV, should be tested every 6 to 12 months. (See '[Risk factors for HIV infection](#)' above.)

If you think you were recently exposed to HIV and the initial test is negative or indeterminate, it should be repeated. A discussion of HIV testing in individuals who were recently exposed to HIV is found below. (See '[Negative result](#)' below and '[Indeterminate result](#)' below.)

HIV TEST RESULTS

Test results are reported as being positive, negative, or indeterminate. The chances of having an inaccurate result are very small.

Negative result — If you have a negative blood test, you are unlikely to have HIV.

However, if you were exposed to HIV recently (ie, within a few weeks), you should be retested. This is because there is always a time, referred to as the "window period," after a person acquires HIV before the tests turn positive.

For the antigen-antibody tests, this is usually about two to three weeks and for the antibody-only tests it is longer, especially for the oral fluid swab tests. Even the viral load tests take one to two weeks after infection to turn positive.

If your potential exposure to HIV was very recent and the blood testing is negative, your healthcare provider may recommend repeating it after a certain time interval. If you performed a home test (blood or oral fluid), a negative test may also need to be repeated. Diagnosing recently acquired HIV infection is important because that is the time when a person is most likely to transmit HIV to someone else since virus levels are high.

Positive result — If your first HIV test is positive, the result needs to be confirmed with further tests. Most of the time, if your test was done in a doctor's office, the confirmatory testing will be done automatically. Sometimes an additional sample of blood will be required. Once you have any positive HIV test, it is important to follow up on all the results. Patients with untreated HIV infection can have serious complications and are at risk of transmitting infection to others.

False-positive HIV test results are uncommon but do occur. For every 1000 screening tests performed, approximately four will return a false-positive result; however, that frequency varies depending on the type of test and the number of people with HIV in the community. If the screening test is positive and the confirmatory result is negative, you have an indeterminate result. This is discussed below.

If you are a person who has low or zero risk for HIV infection and a routine screening test returned positive but the confirmatory test is negative, it is important to speak with your provider about the result. False-positive results may occur due to laboratory reasons, and may be more likely if you are pregnant, have certain conditions (such as an autoimmune condition), recently received certain types of vaccinations, or recently had a separate infection, such as SARS-CoV-2 (COVID-19) infection. If a test result is positive and you are unlikely to have HIV, repeat blood testing is performed to confirm whether you have HIV or not.

Indeterminate result — An indeterminate result occurs when your result is not clearly positive or negative.

The final result usually depends upon your risk of having HIV and the results of repeat or additional testing. In people at low risk for HIV infection, approximately 1 in 5000 results (0.02 percent) are indeterminate. Persons at high risk for HIV who have an indeterminate result may be in the early stages of HIV infection, and subsequent tests will be positive. Sometimes, a person who is healthy can have an indeterminate result for unknown reasons, and subsequent tests will be negative.

If you have an indeterminate result, you will need further testing, as determined by an HIV specialist; a viral load test may give an answer in just a couple of days (see '[Types of HIV tests](#)' above).

While awaiting the results of further testing, you should take precautions to avoid transmitting your potential infection to others. This includes discussing the possibility of infection with any sex partners and use of a condom with every sexual encounter. You should also avoid sharing razors and toothbrushes (since these may transmit blood) and any injection drug equipment (needles, syringes).

PREVENT HIV

In addition to testing, you should learn how to prevent HIV. This includes:

- Encouraging your sex partners to be tested for HIV
- Using a latex or polyurethane condom with every sexual encounter
- Avoiding drugs or alcohol that can affect your judgment about sexual activities
- Avoiding sharing needles and syringes that have been used by other IV drug users

To help prevent infection after a possible exposure to HIV, your provider may prescribe antiviral medications (ie, medications used to treat HIV). If you had sex without a condom, experienced a

condom breakage or sexual assault, or shared needles or injection works with someone who has (or is at risk for) HIV, these medications may reduce your risk of getting HIV. However, you must contact your doctor or nurse right away so you can start the medications as early as possible, preferably within three days of being exposed to the virus.

In addition, if you are at risk of getting HIV (eg, if you have sex without condoms, especially rectal sex or sex with partners whose HIV status is unknown, have been diagnosed with a bacterial sexually transmitted infection like syphilis or gonorrhea, or if you inject drugs), you can ask your provider about pre-exposure prophylaxis (PrEP) which means you take antiviral medications regularly and not just after a possible exposure.

WHERE TO GET MORE INFORMATION

Your healthcare provider is the best source of information for questions and concerns related to your medical problem.

This article will be updated as needed on our web site (www.uptodate.com/patients). Related topics for patients, as well as selected articles written for healthcare professionals, are also available. Some of the most relevant are listed below.

Patient level information — UpToDate offers two types of patient education materials.

The Basics — The Basics patient education pieces answer the four or five key questions a patient might have about a given condition. These articles are best for patients who want a general overview and who prefer short, easy-to-read materials.

[Patient education: HIV and AIDS \(The Basics\)](#)

[Patient education: Preventing HIV after a possible exposure \(The Basics\)](#)

[Patient education: Tests to monitor HIV \(The Basics\)](#)

[Patient education: Taking medicines to prevent HIV before exposure \(The Basics\)](#)

[Patient education: Blood or body fluid exposure \(The Basics\)](#)

Beyond the Basics — Beyond the Basics patient education pieces are longer, more sophisticated, and more detailed. These articles are best for patients who want in-depth information and are comfortable with some medical jargon.

[Patient education: Care after sexual assault \(Beyond the Basics\)](#)

[Patient education: Symptoms of HIV \(Beyond the Basics\)](#)

Professional level information — Professional level articles are designed to keep doctors and other health professionals up-to-date on the latest medical findings. These articles are thorough, long, and complex, and they contain multiple references to the research on which they are based. Professional level articles are best for people who are comfortable with a lot of medical terminology and who want to read the same materials their doctors are reading.

Professional Level Information:

[Acute and early HIV infection: Treatment](#)

[Acute and early HIV infection: Pathogenesis and epidemiology](#)

[Initial evaluation of adults with HIV](#)

[Screening and diagnostic testing for HIV infection in adults](#)

[Techniques and interpretation of HIV-1 RNA quantitation](#)

[Management of nonoccupational exposures to HIV and hepatitis B and C in adults](#)

[HIV pre-exposure prophylaxis](#)

The following organizations also provide reliable health information.

- Centers for Disease Control and Prevention (CDC)

Toll-free: (800) 311-3435

(www.cdc.gov and www.gettested.cdc.gov)

- CDC (Centers for Disease Control and Prevention) National AIDS Hotline

Toll-free (English): (800) 342-2437

Toll-free (Spanish): (800) 344-7432

- National Institute of Allergy and Infectious Diseases (NIAID)

(www.niaid.nih.gov)

- HIV/AIDS Treatment Information Service

Toll-free: (800) 448-0440

(<https://hivinfo.nih.gov/hiv-source/basic-hiv-and-aids-information>)

- AIDS Clinical Trials Information Service (ACTIS)

Toll-free: (800) 874-2572

(www.actis.org)

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