

HIV

HIV stands for human immunodeficiency virus. HIV infects and destroys cells of your immune system, making it hard to fight off other diseases. When HIV has severely weakened your immune system, it can lead to acquired immunodeficiency syndrome (AIDS).

Because HIV works backward to insert its instructions into your DNA, it is called a retrovirus.

AIDS

AIDS is the final and most serious stage of an HIV infection. People with AIDS have very low counts of certain white blood cells and severely damaged immune systems. They may have additional illnesses that indicate that they have progressed to AIDS.

Without treatment, HIV infections progress to AIDS in about 10 years.

Difference between HIV and AIDS

The difference between HIV and AIDS is that HIV is a virus that weakens your immune system. AIDS is a condition that can happen as a result of an HIV infection when your immune system is severely weakened.

You can't get AIDS if you aren't infected with HIV. Thanks to treatment that slows down the effects of the virus, not everyone with HIV progresses to AIDS. But without treatment, almost all people living with HIV will advance to AIDS.

What does HIV do to a person?

HIV infects white blood cells of your immune system called CD4 cells, or helper T cells. It destroys CD4 cells, causing your white blood cell count to drop. This leaves you with an immune system that can't fight off infections, even those that wouldn't normally make you sick.

HIV initially makes you feel sick with flu-like symptoms. Then it can hide in your body for a long time without causing noticeable symptoms. During that time, it slowly destroys your T-cells. When your T-cells get very low or you begin to get certain illnesses that people with healthy immune systems don't get, HIV has progressed to AIDS.

AIDS can cause rapid weight loss, extreme tiredness, mouth or genital ulcers, fevers, night sweats and skin discolorations. Other illnesses and cancers often happen in people living with AIDS and can cause additional symptoms.

Retrovirus

A retrovirus is a virus that works backward from the way human cells do. Human cells have instructions (DNA) that send a message (RNA) to make building blocks for your body (proteins).

Retroviruses have their instructions written on RNA. When a retrovirus invades your cells, it changes its RNA to look like your cells' instructions (DNA). Then it cuts your cells' DNA and inserts its instructions into them. Your cell then acts as though the virus' instructions are its own.

HIV is a retrovirus. All viruses invade your cells and then use your cells' "machinery" to make more copies of themselves. HIV not only uses your cells to make more of itself, but it also inserts its instructions into your DNA.

HIV affect

It's a myth that HIV only infects certain people. Anyone can get HIV if they're exposed to the virus. Having sex without a condom or sharing needles to inject drugs are the most common ways that HIV spreads.

Some populations are statistically more affected by HIV than others. Groups disproportionately affected by HIV include:

- People who identify as gay, bisexual and men who have sex with men (MSM).
- Certain races such as people who are Black or Hispanic.
- Those who exchange sex for money or other items are also at high risk for HIV infection.

While these aren't the only populations impacted by HIV, it's important to consider that they face unique barriers to accessing preventative care, getting tested, and receiving comprehensive

treatment. Homophobia, racism, poverty, and social stigmas around HIV continue to drive inequities and keep people from accessing high-quality healthcare.

How common is HIV?

The number of new HIV infections has declined. In 2019, 1.2 million people in the US were living with HIV. About 13% of those don't know they have it, which is why routine testing for HIV is important.

Symptoms and Causes

You can have HIV without having any symptoms. This is why it's important to get tested even if you don't feel sick.

Sometimes you'll have flu-like symptoms when you first get infected with HIV. These can include:

- Fever.
- Chills.
- Fatigue.
- Sore throat.
- Muscle aches.
- Night sweats.
- Rash.
- Swollen lymph nodes.
- Mouth sores.

The stages of HIV

HIV has three stages:

Stage 1: Acute HIV

Some people get flu-like symptoms a month or two after they've been infected with HIV. These symptoms often go away within a week to a month.

Stage 2: Chronic stage/clinical latency

After the acute stage, you can have HIV for many years without feeling sick. It's important to know that you can still spread HIV to others even if you feel well.

Stage 3: AIDS

AIDS is the most serious stage of HIV infection. In this stage, HIV has severely weakened your immune system and opportunistic infections are much more likely to make you sick.

Opportunistic infections are ones that someone with a healthy immune system could typically fight off. When HIV has advanced to AIDS, these illnesses take advantage of your weakened immune system.

You're more likely to get certain cancers when you have AIDS. These cancers and opportunistic infections together are called AIDS-defining illnesses.

To be diagnosed with AIDS, you must be infected with HIV and have at least one of the following:

- Fewer than 200 CD4 cells per cubic millimeter of blood (200 cells/mm³).
- An AIDS-defining illness.

AIDS-defining illnesses

AIDS-defining illnesses are opportunistic infections, certain cancers (usually caused by viruses) and some neurological conditions. They include:

- Burkitt lymphoma.
- Candidiasis of bronchi, esophagus, trachea or lungs.
- Chronic intestinal isosporiasis (cystoisosporiasis) that lasts more than a month.
- Coccidioidomycosis, spread outside of your lungs (disseminated/extrapulmonary).
- Chronic intestinal cryptosporidiosis (lasting more than a month).
- Cytomegalovirus disease (other than liver, spleen or lymph nodes), onset at age older than one month.
- Cytomegalovirus retinitis (with loss of vision).
- Encephalopathy attributed to HIV.

- Extrapulmonary cryptococcosis.
- Herpes simplex ulcers (lasting more than a month).
- Herpes simplex bronchitis, pneumonitis or esophagitis (onset at age older than one month).
- Histoplasmosis spread outside the lungs (disseminated/extrapulmonary).
- HIV wasting syndrome.
- Invasive cervical cancer.
- Immunoblastic Lymphoma.
- Kaposi sarcoma.
- Multiple or recurrent bacterial infections.
- Mycobacterium avium complex (MAC), spread outside the lungs (disseminated/extrapulmonary).
- Mycobacterium kansasii, spread outside the lungs (disseminated/extrapulmonary).
- Mycobacterium tuberculosis of any site.
- Mycobacterium, other species or unidentified species, spread outside the lungs (disseminated/extrapulmonary).
- Pneumocystis jirovecii pneumonia.
- Primary lymphoma of the brain.
- Progressive multifocal leukoencephalopathy.
- Recurrent pneumonia.
- Recurrent Salmonella septicemia (nontyphoid).
- Toxoplasmosis of the brain (onset at age older than one month).

Symptoms of AIDS

Symptoms of AIDS can be caused by HIV infection, but many are from illnesses that take advantage of your weakened immune system.

HIV/AIDS caused

HIV is caused by the human immunodeficiency virus. The virus attacks the helper T-cells of your immune system, leaving it weakened.

AIDS is caused by having too few immune cells to fight off other illnesses.

How does HIV spread?

You can get HIV through the blood, semen, vaginal fluids, breast milk and rectal fluids of an infected person. People of all sexes and sexual orientations can get infected with and spread HIV.

The virus can enter your body through your mouth, anus, penis, vagina or broken skin. It can't get through your skin unless you have a cut or wound. Pregnant people with HIV can also give it to their babies.

Having sex without a condom and sharing needles to take drugs are the most common ways that HIV spreads. Even if you feel fine, you can still give HIV to others.

Can you get HIV from kissing?

Since HIV is not spread through spit, kissing is not a common way to get infected. In certain situations where other body fluids are shared, such as if both people have open sores in their mouths or bleeding gums, there is a chance you could get HIV from deep, open-mouthed kissing.

You also don't get HIV from:

- Touching or hugging someone who has HIV/AIDS.
- Public bathrooms or swimming pools.
- Sharing cups, utensils or telephones with someone who has HIV/AIDS.
- Bug bites.
- Donating blood.

How can I know if I have HIV?

You can't tell if someone has HIV just by looking at them, and you may not have any symptoms if you're infected by HIV. The only way to know if you have HIV is to take an [HIV test](#).

Since nearly 1 out of 7 people with HIV don't know it, the U.S. Centers for Disease Control & Prevention recommends screening people between the ages of 13 to 64 at least once as part of routine healthcare. This test is voluntary and confidential.

Diagnosis and Tests

How is HIV diagnosed?

HIV is diagnosed with either a test of your blood or your spit (saliva). You can take a test at home, in a healthcare provider's office or at a location that provides testing in your community.

If your test comes back negative, no further testing is required if:

- You haven't had a possible exposure in the previous three months before testing with any kind of test.
- You haven't had a possible exposure within the window period for a test done with a blood draw. (Ask your healthcare provider if you are unsure what the window period is for a test you took.)

If you have had a possible exposure within three months of testing, you should consider retesting to confirm the negative result.

If your test comes back positive, the lab may do follow-up tests to confirm the result.

What tests diagnose HIV?

There are three types of [HIV tests](#): antigen/antibody tests, antibody tests and nucleic acid tests (NATs):

Antigen/antibody tests

Antigen tests look for markers on the surface of HIV called p24. Antibody tests look for chemicals your body makes when it reacts to those markers. HIV antigen/antibody tests look for both.

A healthcare provider will take a small sample of blood from your arm with a needle. The blood is sent to a lab and tested for p24 and antibodies to it. An antigen/antibody test is usually able to detect HIV in 18 to 45 days after exposure.

A rapid antigen/antibody test may also be done with a finger prick to draw blood. You'll need to wait at least 18 days after exposure for this type of test to be able to detect HIV. You may

need to take the test up to 90 days after exposure for accurate results. (“Rapid” refers to the amount of time it takes to get test results, not the amount of time after exposure it takes to detect the virus.)

Antibody tests

These tests look for antibodies to HIV in your blood or saliva. This can be done with a blood draw from your arm, a finger prick or with a stick that you rub on your gums to collect saliva.

An antibody test can take 23 to 90 days after exposure to detect HIV. Antibody tests done with a blood draw can detect HIV sooner than those done with saliva or blood from a finger prick.

Nucleic acid tests (NATs)

NATs look for the HIV virus in your blood. A healthcare provider will take a small sample of blood from your arm with a needle. The blood then is sent to a lab and tested for HIV.

A NAT can typically detect HIV 10 to 33 days after exposure. Note that this test isn’t often used unless you have had a high-risk exposure.

If your test comes back positive, your healthcare provider is likely to recommend other tests to assess your health. These may include a complete blood count (CBC), along with:

- Viral hepatitis screening.
- Chest X-ray.
- Pap smear.
- CD4 count.
- Tuberculosis.

Are there at-home tests for HIV?

Yes, there are at-home HIV test kits. Some are rapid tests, where you use a stick with a soft, flexible tip to rub your gums. Then you put the stick in a tube with a special solution to get your results. Results show up in 15 to 20 minutes.

Other at-home tests use a device to prick your finger with a small needle. You put a drop of blood on a card and send the test kit through the mail to a lab to get your results.

If your at-home test result is positive, you should contact your healthcare provider for additional testing to confirm your result.

Management and Treatment

Is there a cure for HIV?

There is currently no cure for HIV, but there are many treatment options that can slow the progression of HIV significantly.

How is HIV treated?

HIV is treated with a combination of medicines (pills) taken by mouth every day. This combination of pills is called antiretroviral therapy (ART).

Taking a combination of types of pills, rather than just one, is the most effective way to keep HIV from multiplying and destroying your cells. There are also combination pills that have several medications in a single pill. Your healthcare provider will carefully select a combination specifically for you.

The goal of ART is to reduce HIV in the blood (viral load) to an amount that's not detectable by an HIV test and to slow HIV's weakening of your immune system.

Medications used to treat HIV

Each type of pill used in ART has a different way of keeping HIV from making more copies of itself or from infecting your cells. There can be many different brand names of the same type of ART drug.

Types of ART medications include:

- Nucleoside reverse transcriptase inhibitors (NRTIs).
- Non-nucleoside reverse transcriptase inhibitors (NNRTIs).
- Protease inhibitors (PIs).
- Fusion inhibitors.
- CCR5 antagonists.

- Integrase strand transfer inhibitors (INSTIs).
- Attachment inhibitors.
- Post-attachment inhibitors.
- Pharmacokinetic enhancers.
- Combination of HIV medicines.

How can I take care of myself while living with HIV?

It's very important to take your medications as prescribed and to make sure you don't miss appointments. This is called treatment adherence.

If you miss medications, even by accident, HIV can change how it infects your cells (mutate), potentially causing your medications to stop working. If your schedule prevents you from taking medications on time or making it to appointments, talk to your healthcare provider.

Prevention

How can I reduce my risk of getting HIV?

The best way to reduce your risk of HIV is to be aware of how it spreads and protect yourself during certain activities. Having sex without a condom and sharing needles to take drugs are the most common ways that HIV spreads.

These are some ways to reduce your risk:

- Use latex condoms (rubbers) whenever you have any type of sex (vaginal, anal or oral).
- Don't use condoms made from animal products (like lambskin).
- Use water-based lubricants (lotion).
- Never share needles to take drugs.
- Get tested and treated for other STIs. Other STIs can put you at higher risk for an HIV infection.
- Avoid getting drunk or high. Intoxicated people might be less likely to protect themselves.
- If you are at high risk of HIV exposure, ask your healthcare provider if you should be taking pre-exposure prophylaxis (PrEP).

- If you think you've been exposed to HIV, contact your healthcare provider as soon as possible to see if you should take post-exposure prophylaxis (PEP).
- Consider getting tested to know if you can pass HIV to others.

It's important to use a condom correctly to protect yourself against HIV. Use a male condom for any sex act that involves your penis.

You can also protect the vagina or anus with dental dams or internal condoms. Dental dams are flat pieces of polyurethane or latex that you can put over your vagina or anus if you are having oral sex. An internal condom (also called a female condom) can be used by insertion into your vagina or anus.

You should only use one type of condom at a time. Do not use both a male condom and an internal condom.

Can medications prevent HIV?

There are medications that can help prevent HIV in people who have been exposed or are at high risk for exposure. These include pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP).

Pre-exposure prophylaxis (PrEP)

PrEP is a pill you take every day if you don't have HIV but are at high risk of getting infected.

Specifically, it's recommended that you take PrEP if you don't have HIV, if you have had anal or vaginal sex in the past six months and at least one of the following is true:

- You have a sexual partner with HIV.
- You haven't consistently used a condom.
- In the past six months, you've been diagnosed with a sexually transmitted infection (STI).

PrEP is also recommended if you don't have HIV, you inject drugs and at least one of the following is true:

- You inject drugs with a partner who has HIV.

- You share needles or other equipment to inject drugs.

PrEP is not a replacement for other preventative measures. You should still use condoms and avoid sharing needles to inject drugs while taking PrEP.

Post-exposure prophylaxis (PEP)

PEP uses HIV medicines to try to prevent an HIV infection soon after you are exposed. PEP is for those who don't have HIV or don't know if they have HIV and think they've been exposed through consensual sex, sexual assault, shared needles (or other equipment), or work.

You must start PEP within 72 hours of exposure and take it every day for 28 days. PEP is only for emergency use and does not replace other precautions, like condom use.

Outlook / Prognosis

What can I expect if I have HIV?

If you're diagnosed with HIV, it's important to know that those living with HIV who follow treatment guidelines can live full lives for nearly as long as those without HIV.

If you have a high CD4 count and an undetectable viral load within a year of starting treatment, research suggests you'll have the best outcomes, as long as you continue your treatment plan.

You can improve your outlook by:

- Getting tested as part of routine healthcare or if you think you've been exposed.
- Starting ART soon after being diagnosed.
- Taking your medicine every day.
- Keeping your appointments with your healthcare team.

ART can keep blood levels undetectable but can't entirely rid your body of the virus (which remains inactive in your cells). If you don't take your medication every day, the virus can start multiplying again and mutate, which may cause your medications to stop working.

Left untreated, it can take about 10 years for HIV to advance to AIDS. If you progress to AIDS and it goes untreated, you can expect to live about three years more.

For those on treatment, if you have a high CD4 count and undetectable viral load within a year of starting treatment, you can expect to live about as long as someone without HIV. If you have a low CD4 count or a detectable viral load within a year of starting treatment, you may live 10 to 20 years less than someone without HIV.

Does HIV go away?

HIV doesn't go away on its own. It inserts itself into your DNA so your cells think that it's a part of you. There can be many years without symptoms after initial infection, but HIV can still be damaging your immune system even if you don't feel sick.

There may be periods while on medication where the virus is not detectable by an HIV test. In these cases, HIV can be hiding in your body, undetected. It can "wake up" and start destroying your cells again in the future.

This is why continuing to take HIV medication, even if you don't feel sick or the virus is undetectable, is extremely important. Without treatment, HIV will weaken your immune system until you can't fight off other serious illnesses.

Living With

How do I take care of myself with HIV?

The best way to take care of yourself while living with HIV is to follow your treatment plan.

- Make sure to take your medications as prescribed and on time.
- Show up to all appointments so your healthcare team can monitor how you're feeling and know if there's a need to adjust your treatment.
- Follow your healthcare provider's recommendations on how to avoid additional illnesses.

If I have HIV, how can I keep from spreading it to others?

The best ways to keep from spreading HIV to others are many of the same ways you use to protect yourself:

- Let sexual partners and anyone you inject drugs with know that you have HIV.
- Follow your treatment plan and don't miss medications. If you have an undetectable viral load, you greatly reduce the risk of transmitting HIV through sex.
- Talk to your sexual partner about taking PrEP.
- Wear condoms for vaginal, anal and oral sex — even if you have an undetectable viral load.
- Don't share needles or other equipment to inject drugs.
- Limit the number of sexual partners you have.
- If you're pregnant and have HIV, following your treatment plan, including ART medications, can reduce your risk of transmitting the virus to your child.

Can I get pregnant if I have HIV?

Some people think that HIV hurts your chances of getting pregnant, but this isn't true. If you have HIV and want to become pregnant, talk to your healthcare provider. Together you can make a plan before you try to get pregnant to keep you, your partner and any future children healthy.

HIV can spread to your partner during unprotected sex and to your baby during pregnancy, childbirth and breastfeeding. Taking ART medications can greatly reduce your risk of transmitting HIV to your baby, especially if you have an undetectable viral load. Your provider may recommend that you don't breastfeed your baby and use formula instead.

When should I see my healthcare provider?

Call your healthcare provider immediately if you think you've been exposed to HIV. It is important to begin treatment as soon as possible if you do have HIV.

If you already know you have HIV, you should follow your healthcare provider's instructions on when to call. It is important to treat any type of infection, so call if you have new symptoms like fever, night sweats, diarrhea or anything else that concerns you.

What questions should I ask my doctor?

- Am I at high risk for HIV?
- What can I do to reduce my risk of HIV?

- How can I make sure I take my medications correctly?
- What can I do to protect myself from other illnesses?
- How can prevent the spread of HIV?
- What do my test results mean?
- What do my blood counts mean?
- What vaccinations should I get?

A note from Cleveland Clinic

Treatments have come a long way since the height of the AIDS epidemic. You have the best chance of living a long life if you're diagnosed early and are able to get on and stick with ART medications. People living with HIV today are able to work, have active social lives and families, and pursue fulfilling relationships. In fact, this can have a positive impact on your well-being.

While we've come a long way with treatments, unfortunately, social stigmas around HIV still persist. In addition to the feelings of fear and uncertainty a new diagnosis can bring, you may wonder how those around you will respond. If you're hesitant to get tested or get treatment, or if you just aren't sure what your next steps are, you can reach out to a community organization that specializes in HIV. Remember that you are deserving of support, compassion and high-quality healthcare.