



A guide to HIV for community education and advocacy



About ITPC

The International Treatment Preparedness Coalition (ITPC) is a global network of people living with HIV, community activists and their supporters working to achieve universal access to HIV treatment and other life-saving medicines.



Why does this resource matter?

“Health is a fundamental human right indispensable for the exercise of other human rights. Every human being is entitled to the enjoyment of the highest attainable standard of health conducive to living a life in dignity.”

UNITED NATIONS HUMAN RIGHTS OFFICE
OF THE HIGH COMMISSIONER

People living with HIV (PLHIV), activists, civil society and allies have successfully fought for access to life-saving tests, care and treatment for HIV – and they continue to do so. The information in this guide was developed to help people living with HIV and their communities *know* what to monitor, what to fight for, and why it is worth fighting for. Sharing this information builds demand for and improves access to better HIV services – and improved health, quality of life and survival among people living with HIV.

Why are World Health Organization recommendations for HIV services and their delivery important?

Setting the standard: World Health Organization (WHO) guidelines set the worldwide standard for HIV services (prevention, testing, care and treatment). They are based on scientific information, results from research and programs, include the values and preferences of people living with HIV, and created especially for low- and middle-income countries. They are designed to make the most of resources, while delivering evidence-based, quality, people-centered services, and supporting the human rights of all people living with HIV/AIDS.

Including communities: People living with HIV and their values and preferences are included in the development of WHO policies and guidelines – this is known as GIPA, the greater involvement of people living with HIV/AIDS.

Knowing what to fight for: WHO guidelines identify the global standard of care for HIV services (and how they are delivered). People living with HIV, their advocates, and communities can look to these guidelines for evidence-based recommendations on HIV prevention, testing, treatment and service delivery – and use them to advocate for and monitor access to these services.

Planning what to deliver: WHO guidelines help policymakers to plan, implement, and increase access to and quality of HIV services – and measure their impact.



How to use this resource

Click on the level of information you want.

Level 1 is basic or bite-size

Level 2 goes into more detail

Level 3 is in-depth – if you want to know more, or if you are sharing this information with other people, it may answer some of their questions.

Links to information from the World Health Organization (WHO) and other sources are provided in Resources.



The language we use in this guide may be new to some people.

It is intended to be respectful of women, men, transgender and gender non-binary people who are living with or at risk for HIV. For example: we use vertical transmission rather than mother-to-infant transmission; we use cisgender to define people who identify as the sex they were assigned at birth; and we prefer to spell out people living with HIV rather than use PLHIV – so, where space allows, we do not abbreviate.



Abbreviations

3TC	lamivudine	NVP	nevirapine
ABC	abacavir	OI	opportunistic infections
AHD	advanced HIV disease	OST	opioid substitution treatment
ARV	antiretroviral	PI	protease inhibitor
ART	antiretroviral therapy	PLHIV	people living with HIV
ATV/r	atazanavir/ritonavir	PEP	post-exposure prophylaxis
AZT	zidovudine	PrEP	pre-exposure prophylaxis
DR	drug-resistant	r	ritonavir
DR-TB	drug-resistant tuberculosis	RAL	raltegravir
DS	drug-susceptible	RR-TB	rifampicin-resistant tuberculosis
DS-TB	drug-susceptible tuberculosis	RVLT	routine viral load testing
DRV/r	darunavir/ritonavir	STI	sexually transmitted infection
DTG	dolutegravir	TAF	tenofovir alafenamide
EFV	efavirenz	TB	tuberculosis
FTC	emtricitabine	TDF	tenofovir disoproxil fumarate
INSTI	integrase strand transfer inhibitor	TPT	tuberculosis preventive treatment
IP	intellectual property	TRIPS	Trade-Related Aspects of Intellectual Property Rights
LA	long-acting	VL	voluntary license
LPV/r	lopinavir/ritonavir	VMMC	voluntary medical male circumcision
LTBI	latent tuberculosis infection	WHO	World Health Organization
MDR-TB	multi drug resistant tuberculosis	XDR-TB	extensively drug-resistant tuberculosis
NRTI	nucleoside reverse transcriptase inhibitor		
NNRTI	non-nucleoside reverse transcriptase inhibitor		

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Abbreviations

HIV transmission and prevention

Why are people in my community still getting HIV?

HIV natural history and testing

Why do some people fall ill from HIV while others don't?

HIV treatment

How do you get better or keep from getting sick from HIV?

I am living with HIV and I want to get pregnant. Will my baby have HIV, and how will I know?

Are there different kinds of ARVs?

What side effects could I have from HIV treatment?

HIV drug resistance

Why does HIV treatment fail?

Monitoring HIV treatment

How can I tell if my HIV treatment is working?

HIV and COVID-19

People living with HIV and COVID-19 – how can we lower the risk?

HIV and tuberculosis

What is TB and how can I prevent it?

How can I find out if I have TB disease?

How is TB treated?

Access to medicines, vaccines and tests

Why don't we have access to the medicines we need, and what can we do to get them?

Resources

Why are people in my community still getting HIV?

People may not *know* how HIV is passed (from person-to-person by blood, semen, vaginal fluid and breast milk).

This can happen during pregnancy, at birth, from breast-feeding, or during condomless anal or vaginal sex, or from sharing syringes to inject drugs.

Even when people *know* how to prevent HIV, they are not always able to protect themselves, for many reasons.



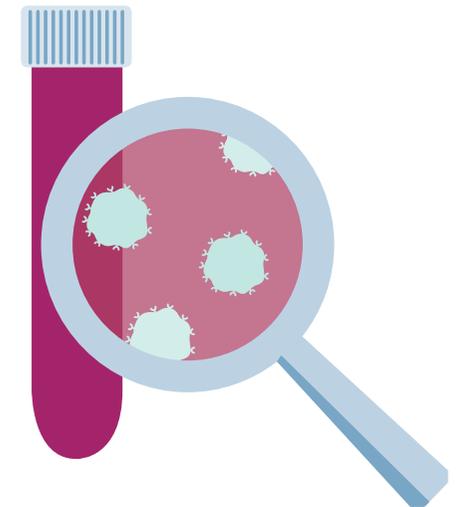
**Why is it difficult for people to always protect themselves from HIV?
What can we do about this in our community?**

Why do some people fall ill from HIV while others don't?

Everyone is different, but most people can live with HIV for years before falling ill.

Some people don't get tested until they have already been living with HIV for years, which gives the virus time to weaken their immune system.

A blood test, called a **CD4 cell count**, can tell people living with HIV how healthy their immune system is.



What are the reasons why some people get tested late?
What can we do to encourage HIV testing in our community?

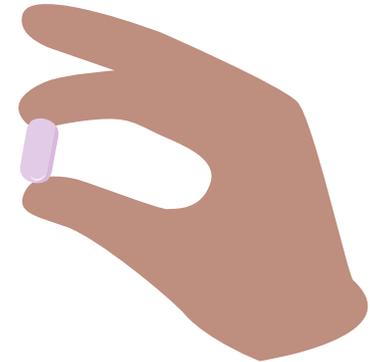


How do you get better or keep from getting sick from HIV?

WHO recommends HIV treatment – called antiretroviral therapy (ART) – for all people living with HIV, regardless of age.

ART is a combination of oral medicines which is taken every day. These medicines work together to stop HIV from reproducing, and they can prevent HIV transmission to sex partners.

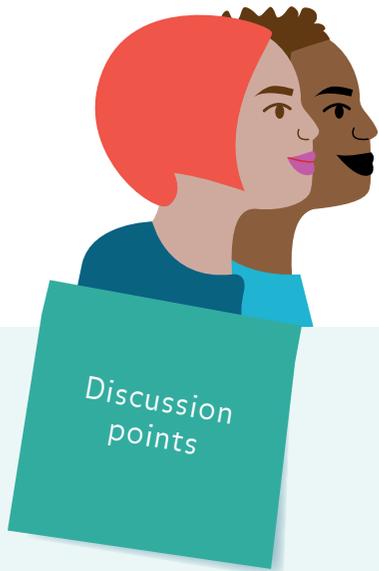
ART gives people living with HIV better health and quality of life, and a normal lifespan, although it is not a cure.



Discussion points

Does everyone in our community know about the benefits of HIV treatment?
Does everyone in our community have access to HIV treatment?

I'm living with HIV and I want to get pregnant. Will my baby have HIV, and how will I know?



The best way to keep a mother healthy is also the best way to lower the risk of HIV transmission to babies: ART.

HIV treatment lowers the risk of vertical transmission from between 15% and 45% to under 5%.

WHO recommends that infants who have been exposed to HIV receive ARVs for the first six to twelve weeks of life.

WHO recommendations for diagnosing HIV in infants and children under age 18 months

- WHO recommends that point-of-care nucleic acid testing should be used to diagnose HIV infection among infants and children younger than 18 months of age.
- WHO recommends that adding nucleic acid testing at birth to existing early infant diagnostics testing approaches can be considered to identify HIV infection in HIV-exposed infants.

Do people in our community know that ART reduces the risk of vertical transmission?
Do pregnant people have access to ARV and adherence support as part of their health care?
Can people in our community access HIV nucleic acid testing for infants and children under age 18 months?

Are there different kinds of ARVs?

WHO HIV treatment recommendations are simple: everyone starts on the same ARVs, called first-line treatment.

First-line treatment is once-daily, combined in a single pill, and taken with or without food. It has few side effects (but people can switch to other ARVs if they have side effects).

First-line treatment can work for a long time. If it stops working, people need second-line treatment.

Third-line treatment is a last resort if second-line treatment fails.



Do people in our community know that there are options if their first-line treatment stops working?

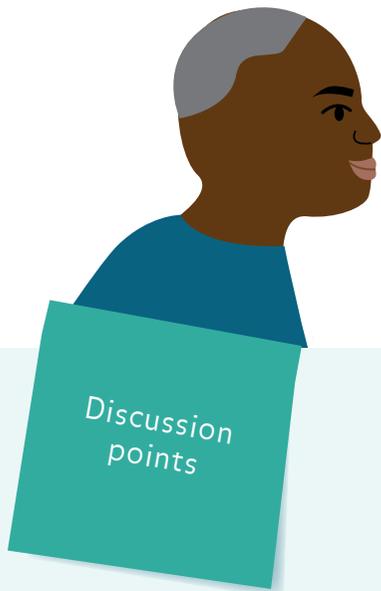


What side effects could I have from HIV treatment?

All medicines can cause side effects, and everyone reacts differently.

People may hear things that discourage them from taking ART, but newer ARVs have fewer side effects than older medicines.

Some of these side effects are mild and go away after a few weeks, while others can be managed.



What have you heard about ARV side effects?
What information do people need to have before starting ART?

Why does HIV treatment fail?

HIV drug resistance can cause ARVs to stop working and increase the risk of illness and death.

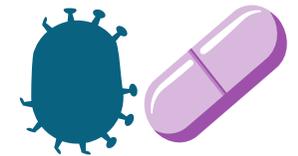
HIV drug resistance can be transmitted or acquired. It is caused by changes in HIV's genetic structure. These changes, called mutations, happen randomly when HIV reproduces.

Will work



Original virus

Won't work



Mutated virus



Discussion points

Missing doses of ARVs gives HIV a chance to multiply. Drug stockouts, life circumstances, side effects, or lack of information about and support for adherence can prevent people from taking daily ART.

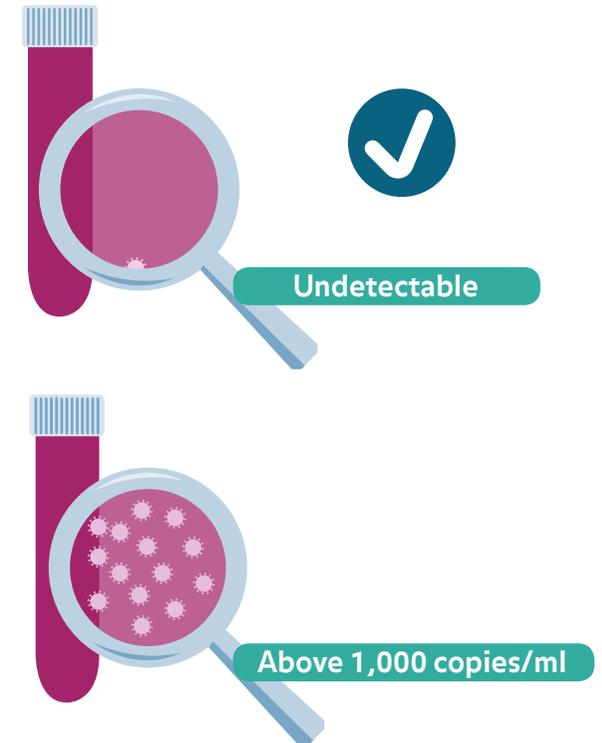
**Do people in our community understand drug resistance and its consequences?
What are some ways to explain it?**

How can I tell if my HIV treatment is working?

The goal of ART is maximum, durable HIV suppression.

Routine viral load testing – measuring the amount of HIV in a blood sample – is the best way to see if ART is working.

When ART is working, HIV levels are so low that the test cannot find it – called undetectable. A viral load above 1,000 copies/ml usually means that treatment is not working. Adherence counselling and re-testing in three months are recommended, and, possibly, switching ARVs.



Discussion points

- Do people living with HIV in our community know about viral load testing?
- Do people living with HIV in our community have access to viral load testing?

People living with HIV and COVID-19 – how can we lower the risk?

People living with HIV are not more likely to fall ill with COVID-19, but if they do, their risk for serious illness, hospitalization or death from COVID-19 is higher, especially if they also have: heart, kidney or liver disease, diabetes, or high blood pressure, or are not taking ART and/or have a low CD4 cell count and/or a high viral load.

People living with HIV should be prioritized for COVID-19 vaccines and boosters (where available).



Discussion points

Do people in our community know that people living with HIV are at higher risk for serious illness, hospitalization and death from COVID-19?

Are people living with HIV in our community able to access COVID-19 vaccines?

Are they being given priority for COVID-19 vaccination?

What is TB and how can I prevent it?

Tuberculosis (TB), an illness caused by bacteria, is passed in droplets entering the air when a person with TB exhales, speaks, sings, sneezes or coughs.

Good air flow – open windows and doors – and avoiding crowded indoor spaces, can lower TB risk.

TB is the leading cause of death among people living with HIV, although it can be prevented and cured.

Most people get TB in their lungs, but it can infect other places in a person's body (called extrapulmonary TB).



Discussion points

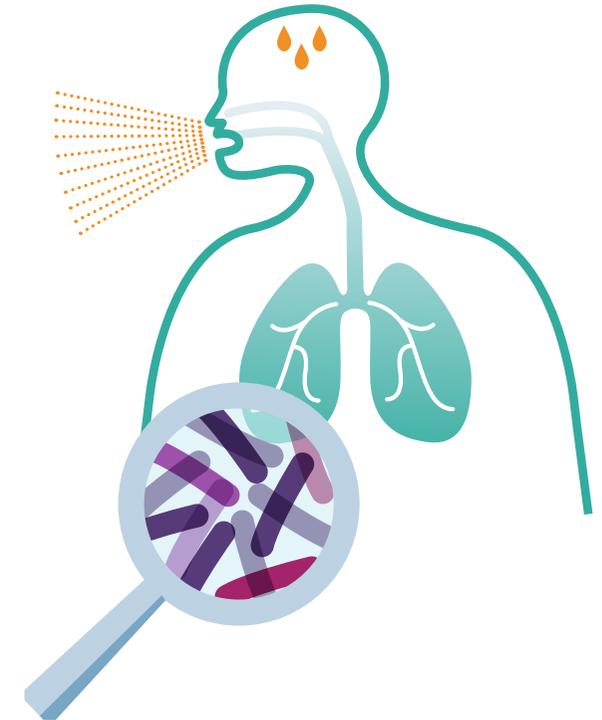
- Do people in our community know how TB is transmitted?**
- Do people in our community know how to lower their risk of TB?**
- Do people know that although TB is curable, it is the leading cause of death among people living with HIV?**

How can I find out if I have TB disease?

WHO recommends HIV testing for people with TB, and pulmonary TB screening – asking about cough, fever, night sweats, weight loss – for all PLHIV during each healthcare visit.

People with these symptoms and/or a close contact or household member with TB should get tested for TB with a rapid molecular test that can detect TB’s genetic material (DNA) in sputum in less than two hours.

WHO also recommends COVID-19 testing for people with TB symptoms.



Discussion points

- Are people living with HIV in our community screened for TB during each healthcare visit?**
- Are people who have TB tested for HIV?**
- Are people being tested for TB and COVID-19?**

How is TB treated?

The way TB is treated depends on whether it is **drug-susceptible (DS)** or **drug-resistant (DR)**.

DR-TB is harder to cure and requires longer treatment than DS-TB, which is treated for six months with a combination of medicines.

DR-TB is treated with drug combinations that are most likely to work for it, which are selected by using test results, a person's treatment history and other information.



Do people in our community know that there are different forms of TB (DS-TB and DR-TB)?



Why don't we have access to medicines we need, and what can we do to get them?

Intellectual property (IP) protection like patents creates access-limiting monopolies on medical technologies (and almost everything else).

Globalized IP rules through the World Trade Organization's TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement leave pharmaceutical corporations in control of medicines for 20 years or more, deciding where, when, how and at what price they can be sold.

But there are legal measures, called TRIPS flexibilities, that can be used by activists and governments to overcome monopolies.



Discussion points

How does IP protection limit access to medical technology?
How can access to medical technologies be improved?



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Topics



Abbreviations

HIV transmission and prevention

Why are people in my community still getting HIV?

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About HIV tests

HIV treatment

How do you get better or keep from getting sick from HIV?

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Why are people in my community still getting HIV?

HIV is transmitted when blood, semen, vaginal fluid, and breast milk directly enter another person's body, during condomless anal or vaginal sex, from injecting drugs with shared, unsterilized syringes, and vertically, from mother to infant during pregnancy, birth and via breastfeeding.

HIV transmission can be prevented with male and female condoms, voluntary medical male circumcision (VMMC), which reduces female-to-male HIV transmission by 60%, and harm reduction provision of needles, syringes and opioid substitution treatment (OST) for people who inject drugs.

Oral medicines, used in **pre-exposure prophylaxis (PrEP)** and **post-exposure prophylaxis (PEP)**, can also prevent HIV (but not other sexually transmitted infections).



PrEP uses some of the same antiretrovirals (ARVs) that treat HIV for prevention. PrEP can lower the risk of HIV sexual transmission by 90%.



PEP is a 28-day course of ARVs started within 72 hours of exposure to HIV.

ARVs can prevent sexual and vertical HIV transmission.

Discussion points

- Do people in my community have access to male and female condoms?
- Do people in my community have access to needles/syringes and OST?
- Do people in my community know about PrEP and PEP?
- Do they have access to PrEP and PEP?
- Do people living with HIV have access to HIV treatment?

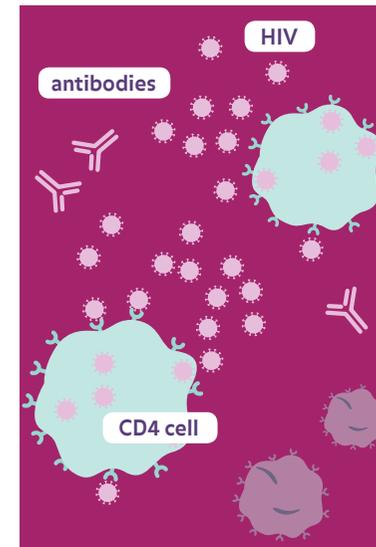
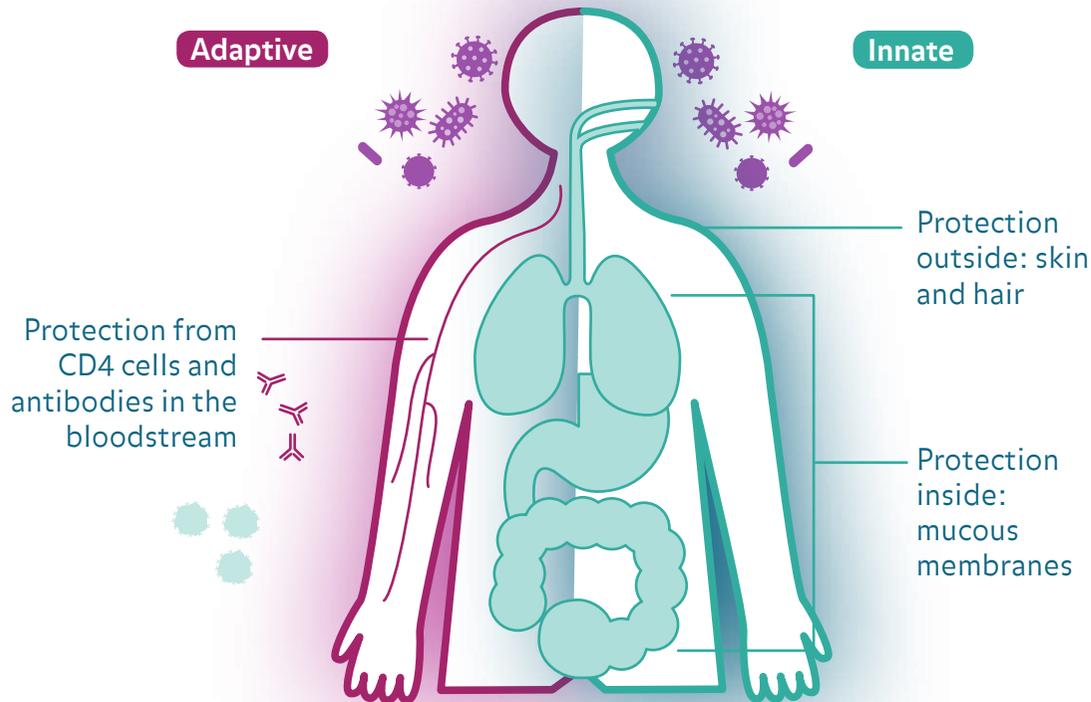
Why do some people fall ill from HIV while others don't?

Over time, untreated HIV damages the immune system. Usually, this happens after people have been living with HIV for many years.

The immune system works in different ways to keep us healthy. We are born with innate immunity, which is the body's first line of defense. The **innate immune system** aims to stop all invaders from spreading into the body. It includes the skin, mucous membranes and body hair.

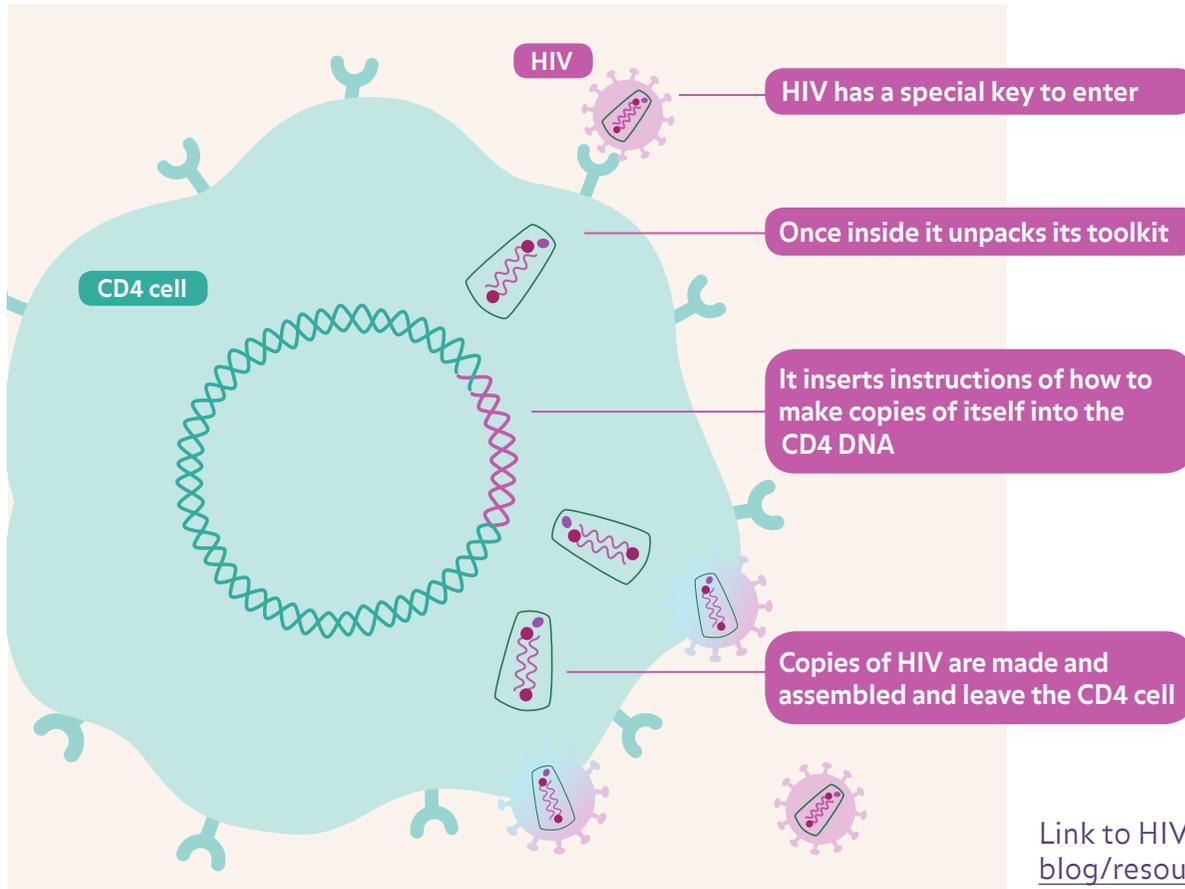
The **adaptive immune** response is the body's second defense against invaders. Adaptive immune responses are triggered when invaders escape the innate immune system. It works by recognizing and fighting specific invaders. The adaptive immune response includes antibodies and certain white blood cells, called CD4 cells

Damage starts when HIV enters the CD4 cells. These cells coordinate the immune response to fight viruses, bacteria and other infections, like HIV. But HIV enters the very same CD4 cells that try to defend the body against it, and it turns them into virus-making factories before the cells die.



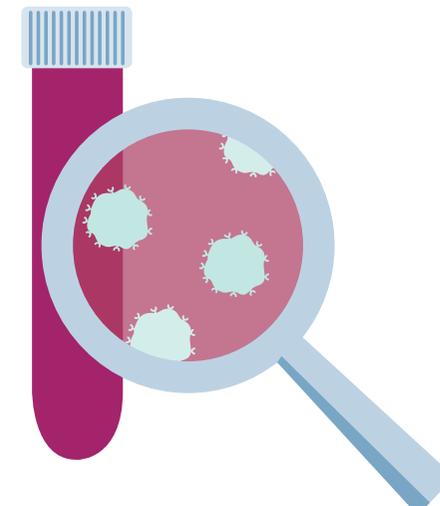
Over time, the body continues to make more HIV-fighting CD4 cells, while the virus keeps entering them and reproducing, using a single CD4 cell to make hundreds of copies of itself before the CD4 cell dies. Eventually, the CD4 cells cannot keep up with HIV and the immune system becomes weak.

The CD4 cell as a virus factory



CD4 count

All people diagnosed with HIV need a test called a CD4 count, so they can get the care they need.



Link to HIV animation video here: <https://itpcglobal.org/blog/resource/understanding-hiv-and-its-treatment/>

Discussion points

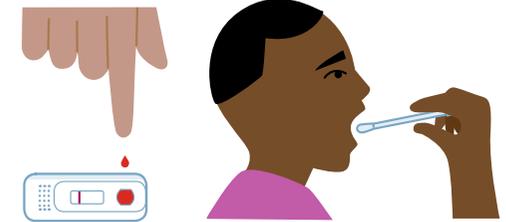
- Why is it better to get tested for HIV as soon as possible?
- What happens when HIV damages the immune system?
- Are people in our community offered a CD4 cell count after their HIV diagnosis?

About HIV tests

HIV antibody testing

After HIV enters a person's body, the immune system responds by making antibodies to fight the virus. HIV antibody testing can be done with blood, oral fluid or urine, in community-based, healthcare, and laboratory settings, or by self-testing; rapid tests are available.

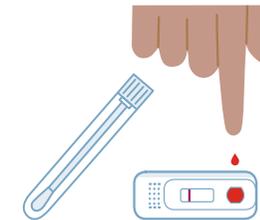
Rapid testing:
up to 30 minutes



HIV antibody/antigen testing

An antibody/antigen test looks for antibodies and antigens (which are substances that trigger an immune response, such as viruses, chemicals and bacteria). Antibody/antigen testing is done with blood, in a healthcare or laboratory setting; rapid tests are available.

Rapid testing:
up to 30 minutes



Lab testing:
between a few days
and a few weeks



HIV nucleic acid testing (NAT)

NAT looks for HIV in a blood sample. Nucleic acid tests can detect the genetic material of HIV (such as RNA or DNA), or how much virus there is (which is called a viral load test). NAT is also used for testing infants and children up to age 18 months (since they have their mother's antibodies and will test positive for HIV even if they are not). NAT is done in a healthcare facility or laboratory.

Lab testing:
between a few days
and a few weeks



How do you get better or keep from getting sick from HIV?

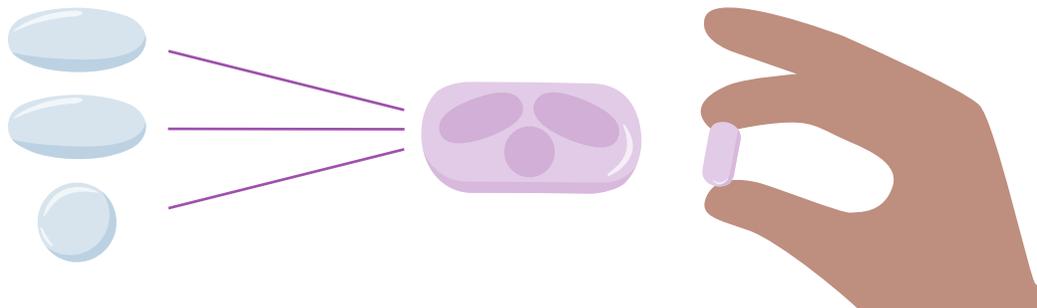
HIV treatment is a combination of medicines, often in one tablet. They work together to stop HIV from multiplying. This allows the immune system to recover and stay strong, and enables people who are living with HIV to have a normal lifespan.

Within one to six months, daily ART can suppress the virus to such low levels that a viral load test cannot find it (this is called **undetectable**). People who are undetectable do not transmit HIV to their

sex partners. But ART is not a cure. This is because HIV can hide in resting cells where ARVs cannot reach it.

HIV treatment is lifelong and needs to be taken every day to work – this is called **adherence**. If people miss doses or stop taking their treatment, HIV starts to multiply again – and some of the new viruses it makes may not respond to treatment, which is called **drug resistance**.

ART is a combination of medicines often in 1 tablet



“Adherence is in our hands and our control. You can fool your doctor, nurse, counsellor or even yourself, but you can’t fool the virus inside you!”

Discussion points

Why is adherence difficult?

Do people in our community know why adherence is important?

What is being done in our community to help people stay adherent?

What else could help people improve or maintain their adherence?

I'm living with HIV and I want to get pregnant. Will my baby have HIV, and how will I know?

The best way to keep a mother healthy is also the best way to lower the risk of HIV transmission to babies: ART.

HIV treatment lowers the risk of vertical transmission from between 15% and 45% to under 5%.

WHO recommends that infants who have been exposed to HIV receive ARVs for the first six to twelve weeks of life.

WHO recommendations for diagnosing HIV in infants and children under age 18 months

- WHO recommends that point-of-care nucleic acid testing should be used to diagnose HIV infection among infants and children younger than 18 months of age.
- WHO recommends that adding nucleic acid testing at birth to existing early infant diagnostics testing approaches can be considered to identify HIV infection in HIV-exposed infants.

Discussion points

Do people in our community know that ART reduces the risk of vertical transmission?

Do pregnant people have access to ARV and adherence support as part of their healthcare?

Can people in our community access HIV nucleic acid testing for infants and children under age 18 months?

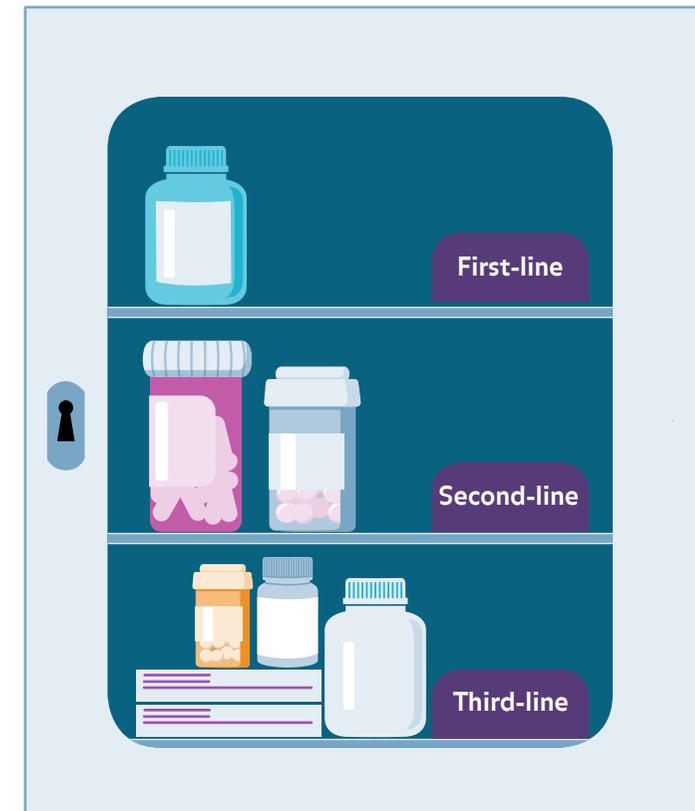
Are there different kinds of ARVs?

WHO makes simple HIV treatment recommendations for infants, children, adolescents and adults, including pregnant and breastfeeding people.

The treatment people start with, called **first-line**, is simple, safe, effective, tolerable and convenient – a once-daily, fixed-dose combination (FDC) taken with or without food. First-line treatment side effects are usually mild, because it is recommended for everyone living with HIV, including people without any symptoms. It is also durable (meaning that it will work when taken as directed for many years). Some people may have side effects from first-line treatment or other medical reasons to use an alternative first-line combination.

If first-line treatment stops working, people need **second-line** treatment using different ARVs. Second-line treatment may have more side effects or need to be taken twice a day and is more costly than first-line treatment.

Third-line treatment – which is even more expensive than second-line treatment – is used as a last resort when second-line treatment no longer works.



Discussion points

Do people in our community have access to second-line treatment?

Do people in our community have access to third-line treatment?

What side effects could I have from HIV treatment?

HIV treatment is currently lifelong and needs to be taken every day to be effective. It is important for people to *know* that they may have side effects, especially if they are healthy and starting ART.

Everyone's body reacts to ART differently. Some people do not have side effects. Most side effects are mild, and tend to improve after a few weeks, as a person's body gets used to ART. Common ARV side effects include diarrhea, nausea, headache, dizziness, and fatigue.

Some side effects can be serious and may either make it difficult for people to take their ARVs or be harmful to their health, such as excessive weight gain. In these cases, people can switch their ARVs.

Getting information about side effects, including how they can be managed, when they are serious,

and other treatment options is an important part of healthcare for people living with HIV.



Some ARVs have long-term side effects; yearly liver, kidney and other blood tests are recommended.

Discussion points

Do people in our community know that information about side effects is an important part of healthcare for people living with HIV?

Do healthcare workers share this information with people in our community?

Do people know that they can switch to different ARVs if side effects are troubling them?

Why does HIV treatment fail?

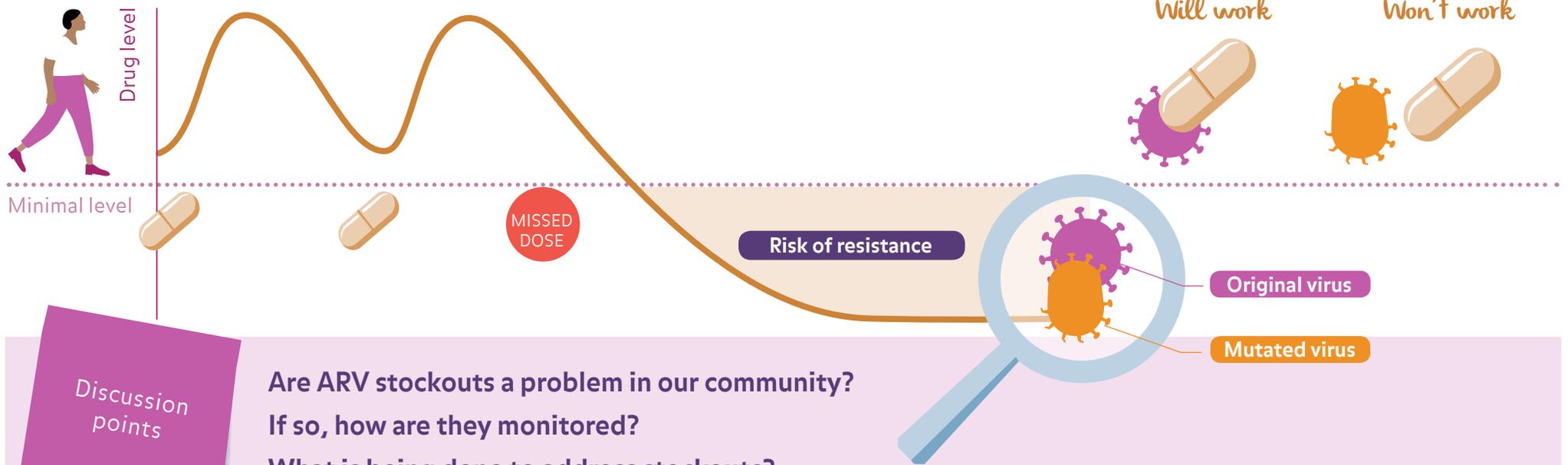
HIV drug resistance can cause treatment failure and increase the risk of illness and death.

People may have drug resistance even if they have never been on HIV treatment, if they have only taken ARVs for a short time (such as during labor or delivery), or when ARV doses are missed.

ARV levels can become too low for HIV treatment to do its job. This gives HIV the chance to reproduce. Some of the copies it makes may have changes in

their genetic structure, called mutations. Mutations can make ARVs less effective – or ineffective – and HIV will continue to reproduce, even when a person remains on, or re-starts ART.

Stockouts and other life circumstances, many beyond a person’s control, can prevent people from accessing or adhering to ART. During the COVID-19 pandemic, people have gotten several months of ARVs at community pickup points, or by home delivery.



Discussion points

- Are ARV stockouts a problem in our community?
- If so, how are they monitored?
- What is being done to address stockouts?
- What should be done to prevent stockouts?
- What strategies are being used to provide ARV access during lockdowns?

How can I tell if my HIV treatment is working?

The goal of HIV treatment is to suppress the virus. Routine viral load testing (RVLT), which measures the amount of HIV in a small blood sample, is the best way to monitor response to HIV treatment. It has been WHO-recommended for all people living with HIV since 2016.

An **undetectable viral load** – so low that a test cannot find it – means HIV treatment is working.

A viral load between **50 and 1,000 copies/ml** means treatment might not be working; enhanced

adherence support and a follow-up viral load test in three months are recommended.

When viral load is **1,000 copies/ml or more**, people taking NNRTI-based ART should switch to a new regimen; people on other ARVs should receive enhanced adherence support and follow-up viral load testing.

People living with HIV need access to RVLT, timely results and, if needed, follow-up adherence support, testing and switching to new ARVs.



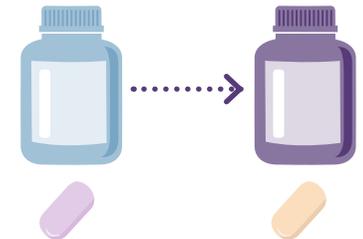
Viral load testing



Adherence support



Follow up VL tests



Switching ARV regimens

Discussion points

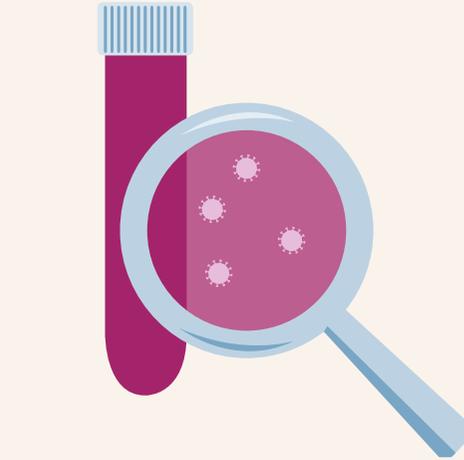
Do people living with HIV in our community understand the results of viral load testing?
Are people who have a detectable viral load being provided with services (enhanced adherence support, follow-up testing, switch to new ARVs)?

Viral load test results



Undetectable viral load

HIV treatment is working.

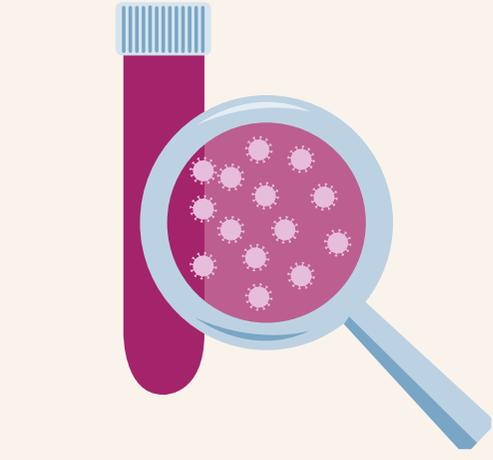


Between 50 and 1,000 copies/ml

Treatment might not be working.



Enhanced adherence support and a follow-up viral load test in three months are recommended.



1,000 copies/ml or more

People taking NNRTI-based ART should switch to a new regimen.



People on other ARVs should receive enhanced adherence support and follow-up viral load testing.

People living with HIV and COVID-19 – how can we lower the risk?

People living with HIV are not more likely to become infected with SARS-CoV-2 (the virus that causes COVID-19), but they are at higher risk for serious illness, hospitalization and death from COVID-19.

Other **co-existing conditions**, including diabetes, high blood pressure, certain cancers, and heart, liver or kidney disease also increase the risk of bad outcomes from COVID-19 among PLHIV. This risk is also greater among PLHIV who are not taking ART,

as well as people who have a **high viral load** and/or a **low CD4 cell count** – even while on HIV treatment.

Getting vaccinated greatly lowers the risk of serious illness, hospitalization, and death from COVID-19. All approved COVID-19 vaccines are safe for people living with HIV, and can be used by people who are on ART.

People living with HIV, especially those with <200 CD4 cells mm^3 , should be prioritized for COVID-19 vaccines, including boosters, where available, in a manner that preserves their confidentiality.

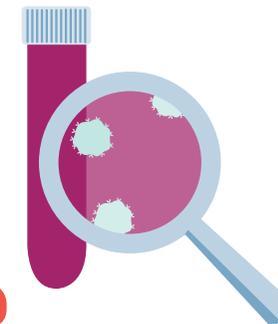
Risk factors for serious illness from COVID-19



Co-existing conditions



High viral load



Low CD4 cell count

Discussion points

- Do people living with HIV in our community know about the benefits from COVID-19 vaccines?
- Do people living with HIV in our community know that COVID-19 vaccines are safe for them?
- Do they know that there are no interactions between COVID-19 vaccines and ARVs?

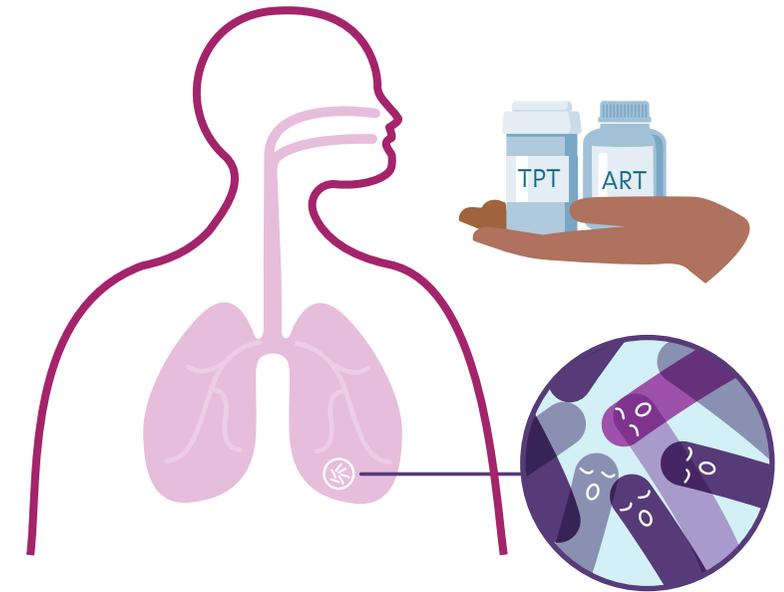
What is TB and how can I prevent it?

Globally, one of every four people has been infected with TB. Most of them have **latent TB infection (LTBI)**, which means that TB bacteria have entered their body, but their immune system is stopping them from falling ill. LTBI is not contagious, but it can develop into **TB disease** if the immune system is unable to control it. People living with HIV are 18 times more likely to develop TB disease.

Untreated TB disease is contagious. A person can become infected with TB more than once, which is why TB prevention is so important.

People living with HIV can lower their risk for TB by avoiding poorly ventilated indoor spaces, taking daily ART, which strengthens the immune system, and by taking **TB preventive treatment (TPT)**.

People diagnosed with TB disease can be treated and cured, regardless of HIV status, although drug-resistant (DR) forms of TB can be harder to treat.



Prevent 'sleeping' latent TB developing into TB disease

Discussion points

- Do people in our community know about the difference between LBTI and TB disease?
- Do people living with HIV in our community know how to lower their risk for TB disease?

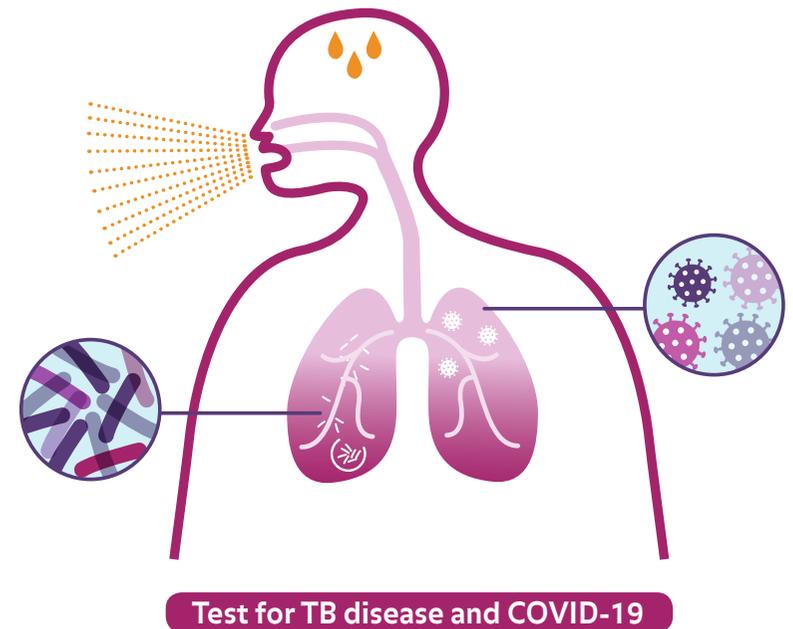
How can I find out if I have TB disease?

HIV testing is recommended for people with TB disease. Routine TB screening at health care visits is recommended for all people living with HIV.

People with a cough, fever, night sweats and weight loss and/or close contacts who have TB should be tested for **TB disease** and **COVID-19**, because people might have both illnesses.

In adults and adolescents, WHO-recommended rapid molecular tests can detect TB DNA from a sputum sample in less than two hours (and **extrapulmonary TB**, which is diagnosed from other body fluids). Some tests will also detect **resistance to rifampicin** (a first-line TB drug). The same technology can be used for COVID-19 testing.

In some settings – and for some groups – different tests may be used to diagnose TB (such as TB-LAM, a urine test used in people with a low CD4 cell count).



Discussion points

Are people living with HIV in our community who have TB symptoms and/or close contacts, getting tested for TB disease?

Are rapid molecular tests being used in our community to diagnose TB?

How is TB treated?

For people with TB, including PLHIV, the type and length of treatment depends on whether they have **drug-susceptible TB (DS-TB)** or **drug-resistant TB (DR-TB)**.

People living with HIV who are not on ARVs start TB treatment first. People who are already taking ARVs may need to switch or take them twice a day, because of interactions with TB medicines.

Adherence counselling and support are very important, including information about side effects and how to manage them. TB drug resistance can worsen if doses are missed or a person stops taking their TB treatment, making it even harder to treat successfully.

DS-TB is treated for six months with a combination of medicines. Experts are looking into even shorter treatment for DS-TB.

DR-TB treatment lasts longer (at least nine months) and is based on resistance testing, a person's treatment history and how someone is responding to their TB treatment.



Discussion points

Do people in our community have access to adherence support and counselling during their TB treatment?

Do people in our community have access to DR-TB treatment?

Why don't we have access to medicines we need, and what can we do to get them?

Generic medicines have saved millions of lives. But access to affordable generic versions of medical products can take decades. This happens because the World Trade Organisation's **TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement** requires governments who are members of the WTO (except least-developed countries) to create monopolies on medicines (among many other products).

These **intellectual property (IP) rights** include patents, which grant exclusive ownership for twenty years. An "evergreening" strategy allows pharmaceutical companies to file successive patents on new uses or new forms of existing medicines extending their control for far longer than the original twenty years.

Other measures make it difficult for generics manufacturers to register their products – or to access the knowledge they need to produce them,

blocking access to and limiting supply of vaccines and medicines across low-, middle- and high-income countries. Fortunately, activists and governments can – and have – successfully used legal measures, called **TRIPS flexibilities**, to improve access to and affordability of medical products.

Access to tests, vaccines and treatments are controlled by companies.

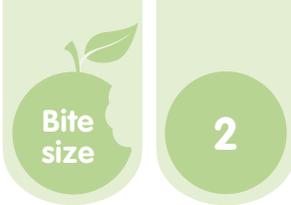


Discussion points

Do people in our community know what the TRIPS Agreement is?

Do people in our community know what patents and evergreening are, and how they limit or prevent access to medical technology?

Click on a level



Next

Click on a topic



Topics



Abbreviations

HIV transmission and prevention

Why are people in my community still getting HIV?

WHO recommendations for biomedical HIV prevention

HIV natural history and testing

Why do some people fall ill from HIV while others don't?

WHO recommendations for advanced HIV disease

WHO recommendations for HIV testing

HIV treatment

How do you get better or keep from getting sick from HIV?

WHO recommendations for HIV treatment

I am living with HIV and I want to get pregnant. Will my baby have HIV, and how will I know?

Are there different kinds of ARVs?

WHO recommendations for first-, second- and third-line HIV treatment

What side effects could I have from HIV treatment?

HIV drug resistance

Why does HIV treatment fail?

Monitoring HIV treatment

How can I tell if my HIV treatment is working?

WHO recommendations for viral load monitoring

HIV and COVID-19

People living with HIV and COVID-19 – how can we lower the risk?

WHO recommendations for COVID-19 vaccines and HIV services during the COVID-19 response

HIV and tuberculosis

What is TB and how can I prevent it?

WHO recommendations for TPT

How can I find out if I have TB disease?

WHO recommendations for initial TB testing

How is TB treated?

WHO recommendations for treating TB and HIV

Access to medicines, vaccines and tests

Why don't we have access to the medicines we need, and what can we do to get them?

Resources

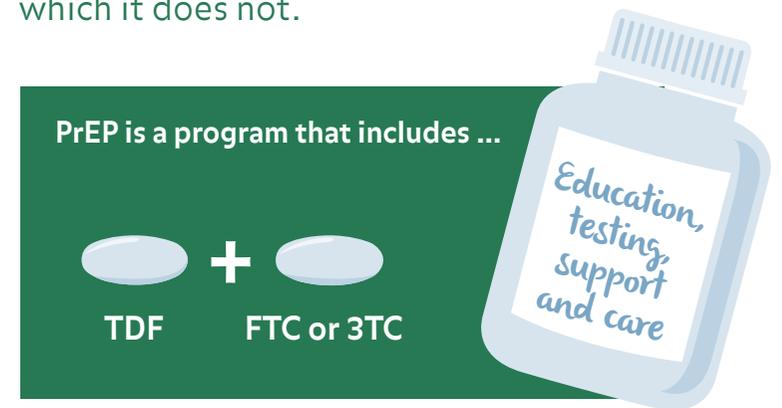
Why are people in my community still getting HIV?

Many factors contribute to a person’s HIV risk. WHO recommends rights- and evidence-based combination prevention designed to meet the needs of specific people and their communities.

- **Combination HIV prevention** includes:
 - **behavioral interventions** (such as providing information about sex; counselling and other forms of psychosocial support; programs to reduce stigma and discrimination; guidelines for safely feeding infants, and cash transfers) to go along with **biomedical interventions** (VMMC, sexual and reproductive healthcare, STI treatment, male and female condoms, needle/syringe programs and OST, HIV testing and antiretrovirals for PrEP, PEP and HIV treatment).
 - **Structural interventions** address the social, legal, political and economic factors that facilitate the spread of HIV, such as ending criminalization of same-sex relationships, addressing gender inequality and gender-based violence, and upholding human rights of key and vulnerable populations – people who use drugs, gay men and other men who have sex with men, transgender people, prisoners and other detainees, migrants and sex workers.

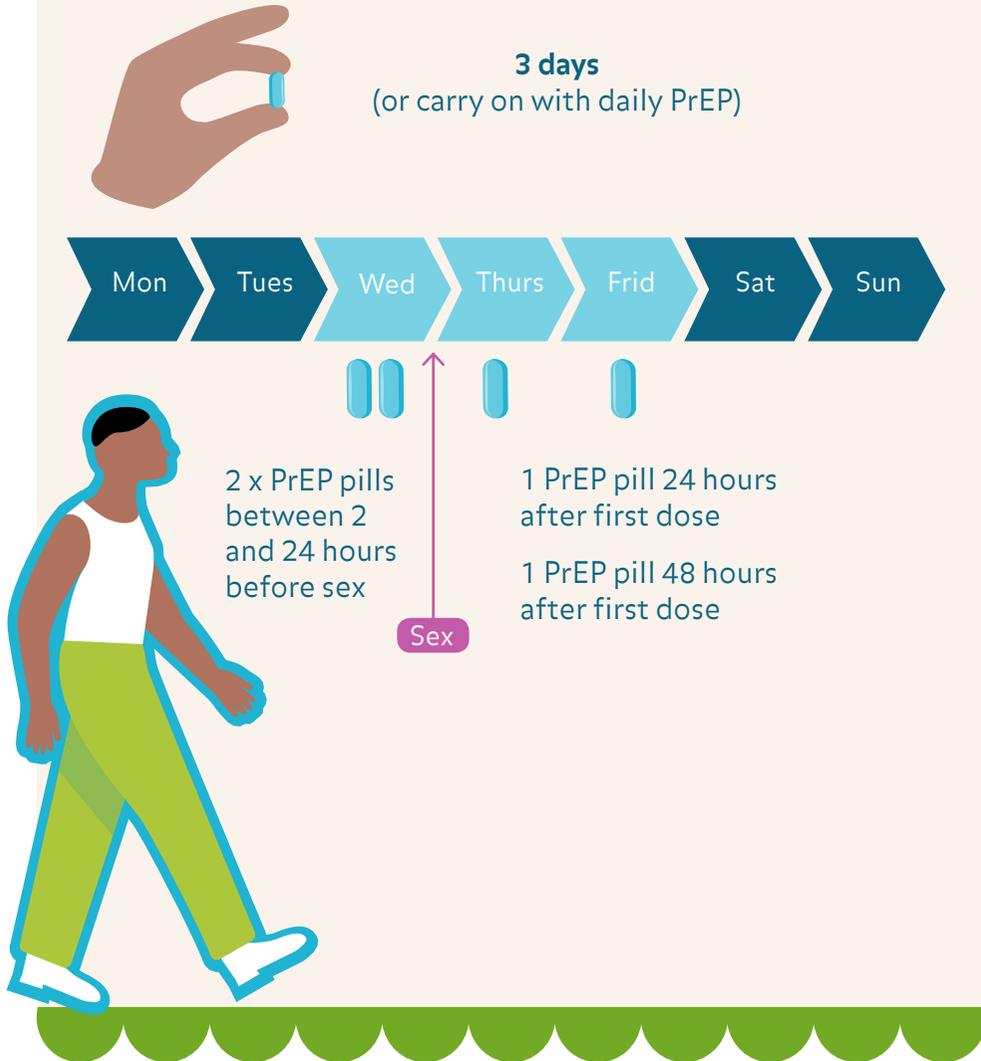
Think holistically about HIV prevention and learn about how it works or what makes it difficult for people to use it. For example:

- people who inject drugs may not be able to access sterile needles and syringes when needed – or they may be confiscated by police.
- Sex workers may be offered more money to have unprotected sex.
- Men who have sex with men (MSM) can use event-driven PrEP or daily PrEP. While cisgender* and transgender women need to take PrEP on a daily basis – and may have specific concerns about PrEP, such as whether it can be used during pregnancy and breastfeeding – which it can – and if it makes gender-affirming hormones less effective – which it does not.

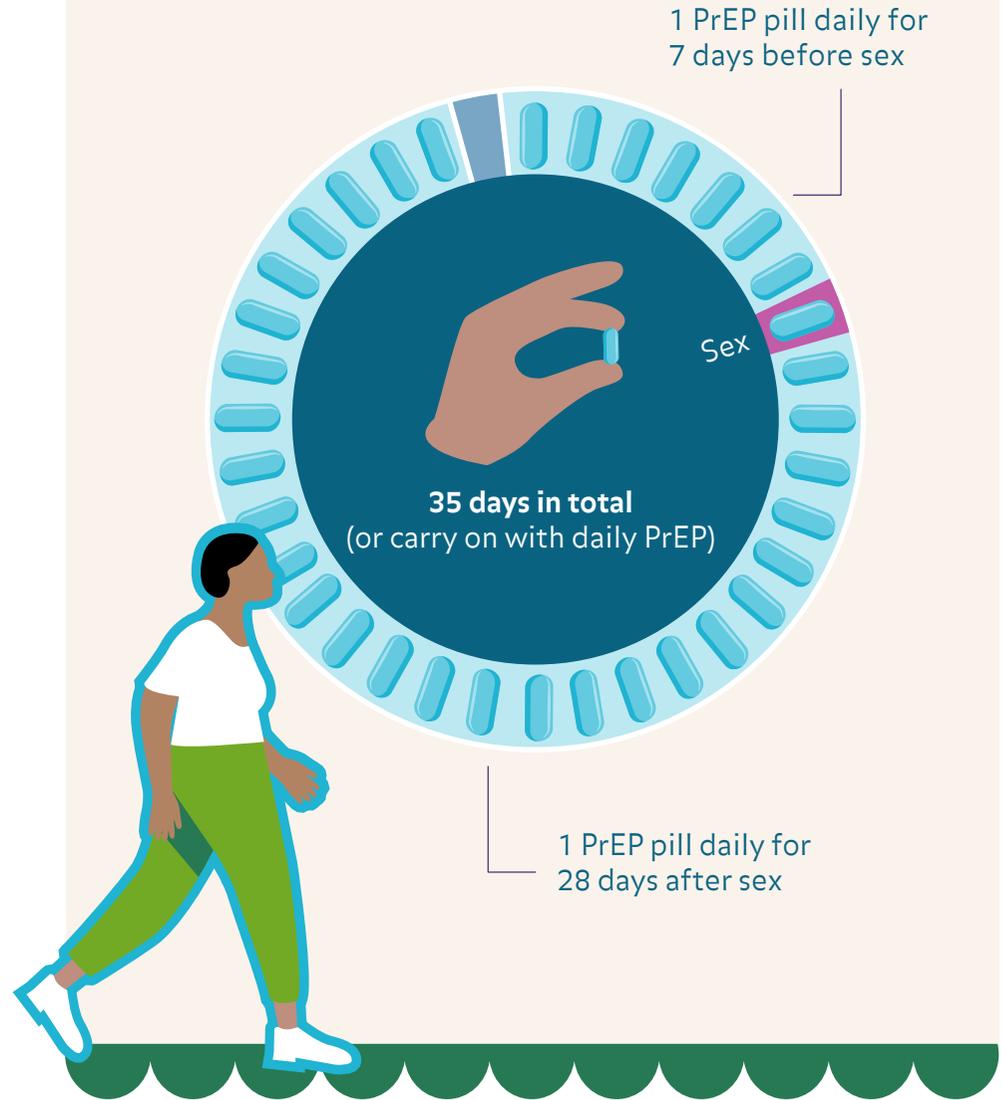


*Cisgender people are those who identify as the sex they were assigned at birth.

Event-driven PrEP for cisgender MSM



Daily PrEP for people with a vagina





It is important to fight for access to new and existing methods of HIV prevention, such as long-acting injectables – the first of which was approved in the US at the end of 2021 – and the WHO-recommended vaginal ring. In the coming years, new prevention methods and technologies will become available. In the meantime, it is essential to ensure that people have information about, and access to HIV prevention – especially young people and people who are members of key populations.

Discussion points

What is a key population?

What legal, economic, and social factors increase HIV risk among people who are members of key populations?

Who needs HIV prevention services in our community?

What do they need?

What are the best ways to deliver HIV prevention services in our community – and how can existing services be improved?

What are the new prevention technologies?

Are people in our community aware of them?

When will they become available?

What can we do to ensure that they are available and accessible?



WHO recommendations for biomedical HIV prevention



PrEP is for anyone and everyone who is at risk. You should wear a helmet when riding a bike. If you don't ride a bike you don't need a helmet.

WHO recommends evidence-based, combination HIV prevention interventions that meet the needs of individuals and communities, while considering local epidemiology and context.

Pre-exposure prophylaxis (PrEP)

Antiretroviral drugs are used to prevent and treat HIV. WHO recommends offering oral PrEP containing tenofovir (TDF) as an additional prevention choice for people at substantial risk of HIV infection, and as part of combination approaches to HIV prevention (which could include access to male and/or female condoms, lubricant, and sterile injection equipment for people who inject drugs).

What tests does a person need before starting PrEP and while using it?

- People need HIV testing before starting or re-starting PrEP. Testing for HIV (and other sexually transmitted infections) every three months is recommended while using PrEP.
- A one-time kidney function screening is recommended within 1–3 months of starting PrEP for people ages 30 years and older, and for younger people who have diabetes or hypertension.

How is PrEP taken? PrEP comes as a pill. Cisgender men who have sex with other men can use daily or event-driven PrEP dosing, meaning that they take pills before and after sex. People who have a vagina need to take PrEP for seven days before it begins protecting them from sexually transmitted HIV, and to continue taking it on a daily basis until 28 days after their last potential exposure to HIV.

How well does PrEP work? It depends on adherence; PrEP is most effective for people who take at least 80% of their doses; the more doses a person misses, the less effective it becomes.

What are the side effects? Side effects are most likely during the first few weeks of PrEP use. In clinical trials, less than 10% of people taking PrEP reported nausea, vomiting and abdominal pain, which were usually mild and did not persist.

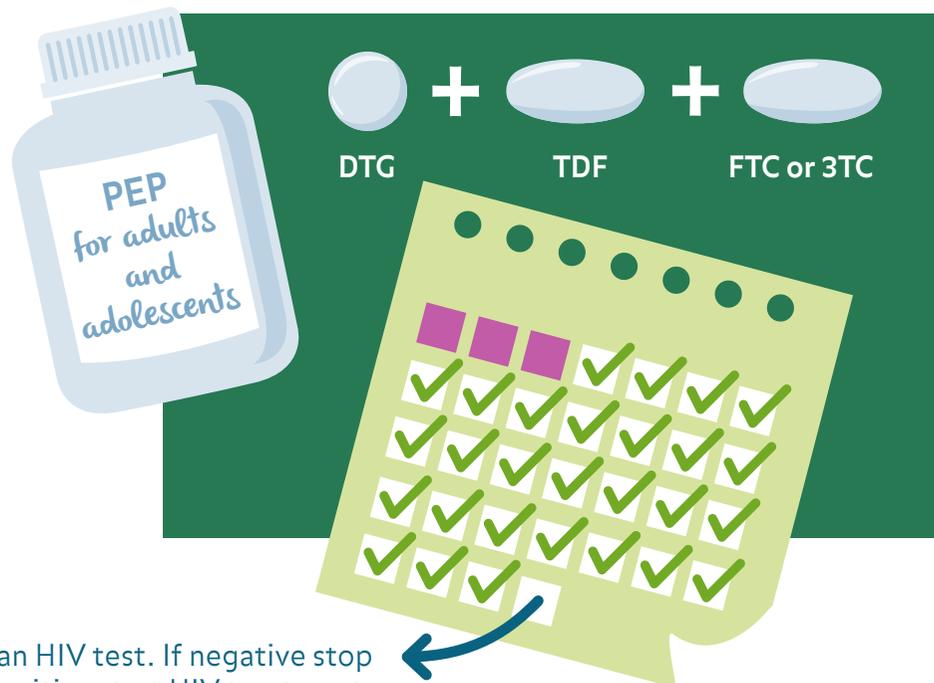
Is it safe to take PrEP during pregnancy and breastfeeding? Yes; PrEP is safe and effective during pregnancy and breastfeeding.

Can PrEP be used with hormonal contraception? Yes; PrEP does not affect hormonal contraception.

Can PrEP be used with gender-affirming hormones? Yes; PrEP is effective and does not affect hormone concentrations in serum.

Post-exposure prophylaxis (PEP)

WHO recommends a 28-day course of PEP, started within 72 hours of a possible HIV exposure. Although two ARVs may be used, a triple drug combination is preferred; for adults and adolescents, the preferred regimen is dolutegravir (DTG) plus TDF with emtricitabine (FTC) or lamivudine (3TC). For children ages 10 and under, the preferred regimen is DTG plus zidovudine (AZT) with 3TC.



Take an HIV test. If negative stop PEP; if positive start HIV treatment.

The dapivirine vaginal ring

WHO recommends offering the dapivirine vaginal ring (which is made of silicone, and needs to be worn continuously for a month before replacing it; during this time, the ring slowly releases an ARV called dapivirine into the vagina). The ring is an additional prevention choice for cisgender women at substantial risk of HIV, as part of combination prevention approaches.

When does the ring start working? The ring begins to reduce HIV risk 24 hours after it is inserted.

How well does the ring work? Two trials, in which women were given the ring or a placebo, reported that it reduced HIV infection by 30% – but not among women ages 18-24, among whom adherence was lower. An open label trial (in which women knew that they were getting the ring) reported that it reduced HIV infection by 62%. More studies, including in young women, are underway.

What tests do women need before inserting the ring and while using it? HIV testing is required before using the ring and routinely – such as every three months – during ring use.



What are the side effects? No difference in side effects between women who got the ring versus those who got the placebo, were reported during clinical trials. A small group of study participants reported non-medical social harms when a partner discovered the ring during foreplay or sex, when notifying the partner of a sexually transmitted infection, or if the partner suspected that the ring was associated with ill health, “promiscuity” or “witchcraft”; these included destroying the ring, physical violence and ending relationships.

Is it safe to use the ring during pregnancy and breastfeeding? Data are limited; more information is expected by 2022.

Can the ring be used with hormonal contraception? Yes.

Why do some people fall ill from HIV while others don't?

Untreated HIV has three stages:

1. primary infection
2. chronic infection
3. advanced HIV disease (AHD).

Primary infection is the first six months after becoming infected. During this time, HIV enters the bloodstream and the lymph nodes (small glands throughout the body linked by vessels carrying lymphatic fluid; they filter out harmful substances and are full of infection-fighting white blood cells).

HIV enters infection-fighting CD4 cells inside lymph nodes and hijacks these cells, turning them into virus factories. Within weeks, lymph nodes become swollen and burst, releasing HIV into the body. HIV then kills many CD4 cells before the immune system has made antibodies (Y-shaped proteins made by the immune system to mark, disable or kill bacteria, viruses and other things that can make people ill).

HIV antibodies begin fighting the virus, giving the rest of the immune system a chance to recover, but they cannot get rid of it. While this is happening, about 70% of people feel ill, with symptoms including fever, swollen glands, sore throat, and fatigue.

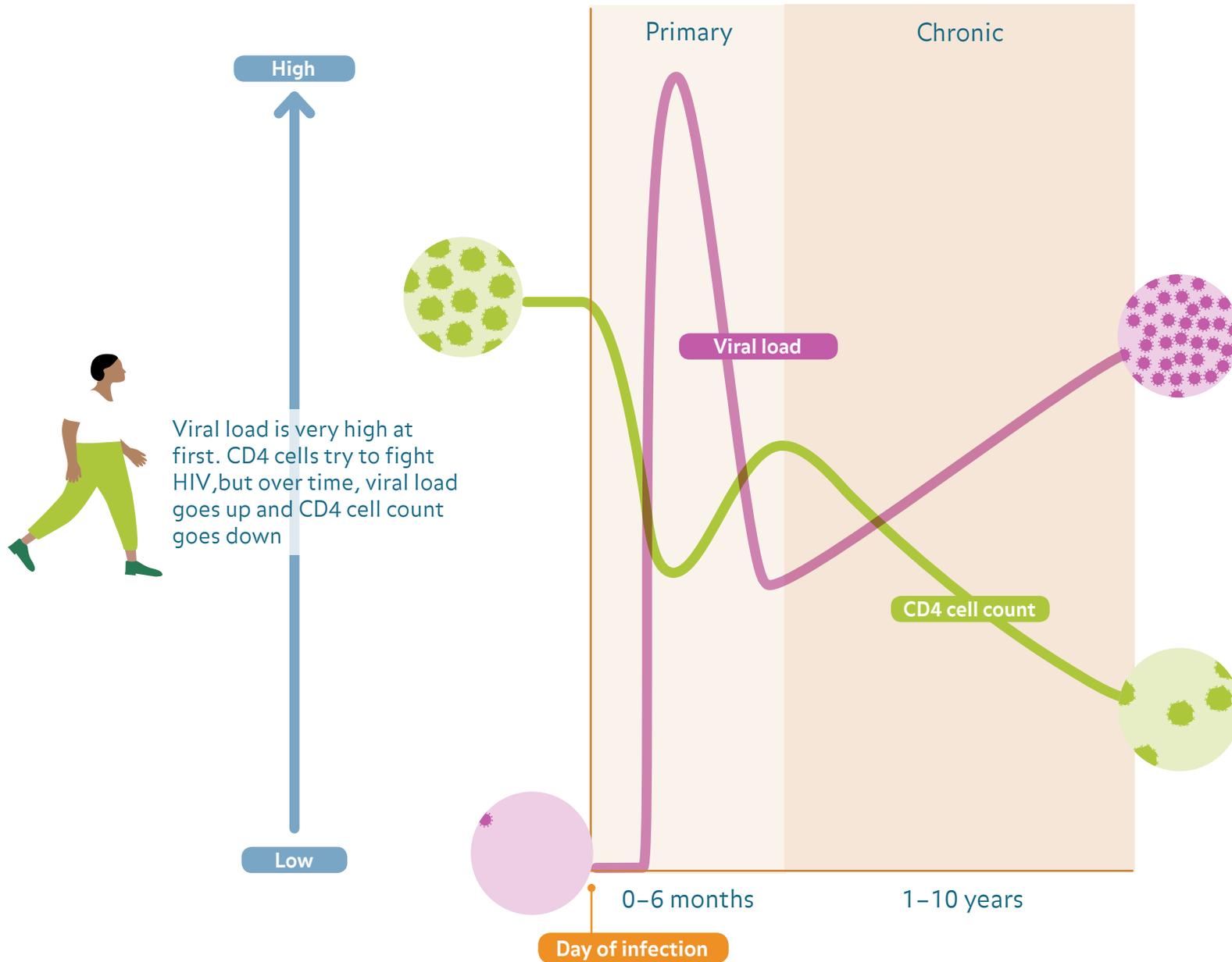
Chronic infection starts after HIV has been in a person's body for six months. During this phase, HIV progresses slowly, but it is still entering CD4 cells and using them to make hundreds of copies of itself before these cells die. This can go on for years before a person feels ill. Everyone's body is different; generally, it takes a decade before HIV depletes CD4 cells to a dangerous level, as the amount of virus increases. A CD4 cell count measures the health of the immune system.

Advanced HIV disease: People with certain illnesses and/or a CD4 cell count under 200 cells/mm³ have AHD, leaving them vulnerable to opportunistic infections (OI), serious and even life-threatening illnesses that a healthy immune system prevents.

People with AHD are at risk for falling very ill and dying unless they receive a special package of care, including HIV treatment, called antiretroviral therapy (ART) and medicines to prevent or treat other infections. Without HIV treatment, most people with AHD survive for three years or less – highlighting the importance of HIV testing and CD4 cell count.

Link to HIV animation video here:
<https://itpcglobal.org/blog/resource/understanding-hiv-and-its-treatment/>

Stages of untreated HIV



Discussion points



Do we have access to voluntary, confidential HIV testing with counselling and linkage to HIV prevention, care and treatment services?

Do people who are members of key populations have access to these services?

Are women asked about partner/family violence – and getting help and support if they need it?

Has our community been involved with planning HIV self-testing services?

Do we have access to HIV self-testing?

What happens to people who have been living with HIV for years, without treatment?

Do people in our community have this information?

What are the best ways for us to share this information?

Do people in our community with AHD get the care they need?



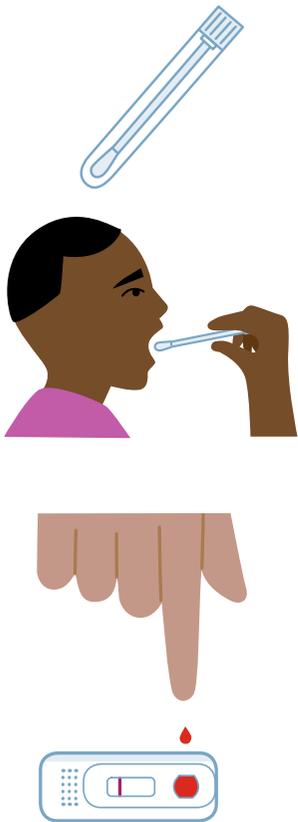
WHO recommendations for advanced HIV disease

Adults, adolescents, and children living with AHD need a special package of care:

- Screening for, and diagnosis of TB disease
- Screening for cryptococcal antigen (for adults, adolescents and children over age 10 years)
- Prophylaxis/pre-emptive treatment with co-trimoxazole (to prevent malaria and/or severe bacterial infections), TB preventive treatment, fluconazole pre-emptive treatment (for people who are cryptococcal antigen-positive without evidence of meningitis)
- Rapid ART initiation (defer in people with symptoms of meningitis)
- Adapted adherence support, with tailored counselling to ensure optimal adherence to the package of care for AHD

WHO recommendations for HIV testing

Rapid tests



HIV testing services should always be voluntary, and provided with WHO's essential five Cs:

1. consent
2. confidentiality
3. counselling
4. correct test results, and
5. connection or linkage to prevention, care and treatment.

Trained and supervised lay providers can conduct safe and effective HIV testing services with rapid tests.

Pre-test information and messages should include the benefits of testing and of available prevention and treatment services; an explanation of issues and services for those receiving ART seeking further testing, as relevant and the opportunity to ask questions.

In high-burden settings, **facility-based HIV testing** should be offered to all populations and in all services. In low-burden settings, facility-based HIV testing should be offered to adults, adolescents, or children with signs and symptoms or medical

conditions that could indicate HIV infection, and HIV-exposed children, and symptomatic infants and children; key populations and their partners; and all pregnant people.

Healthcare providers should ask about exposure to intimate partner violence when assessing conditions that may be caused or complicated by it. Women who disclose any form of violence by an intimate partner (or other family member) or sexual assault should be offered immediate support.

Community-based sites in high-burden settings should offer HIV testing with linkage to prevention, treatment and care services, in addition to routine facility-based testing, for all populations, particularly key populations. In low-burden settings, community-based testing – in addition to facility-based testing – is recommended for key populations, with linkage to prevention, treatment and care services.

HIV self-testing should be offered (but people who have a reactive test result need additional testing according to national guidelines). Communities need to be engaged in developing and adapting models for HIV self-testing.

How do you get better or keep from getting sick from HIV?

Antiretroviral therapy (ART) is a combination of different medicines working together to stop HIV replication.

There are six different classes, or families of ARVs, each with its own mechanism of action.

Entry and fusion inhibitors prevent HIV from entering CD4 cells, while other ARVs block certain steps in the virus lifecycle after it enters CD4 cells.

- **Nucleoside/tide reverse transcriptase inhibitors (NRTIs)** and **non-nucleoside reverse transcriptase inhibitors (NNRTIs)** prevent HIV from translating its genetic material (RNA) into DNA. NRTIs do this by putting a faulty link into the chain of HIV DNA – thus, they are called chain terminators. NNRTIs bind to HIV’s reverse transcriptase enzyme so it cannot translate its RNA to DNA – like blocking a road so a car cannot pass.
- **Integrase strand transfer inhibitors (INSTIs)** stop HIV from being able to enter the CD4 cell’s nucleus, so it cannot take control of the cell and turn it into a virus factory.
- HIV’s protease enzyme works like a scissor, cutting chains of viral proteins so that they can be processed and put back together to form

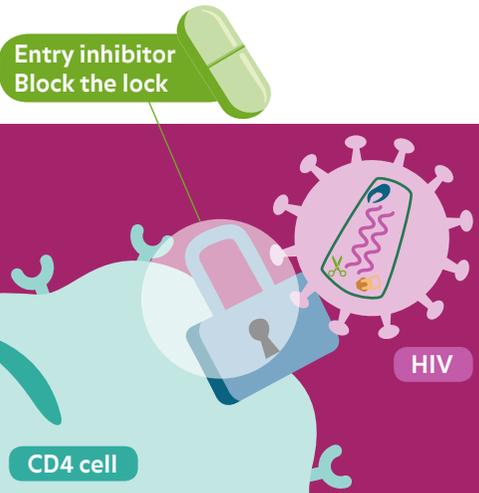
HIV. **Protease inhibitors (PIs)** work by binding to the scissor’s blades so it cannot cut, which prevents assembly of new viruses.

HIV treatment is lifelong and requires adherence to daily oral medication – or, possibly, in the future, a long-acting (LA) injectable ARV combination. The first LA combination is once-monthly cabotegravir, an INSTI, and rilpivirine, an NNRTI. It was approved in the EU and US in January 2021 for people on ARVs who want to switch (so long as they do not have a history of HIV treatment failure or drug resistance).

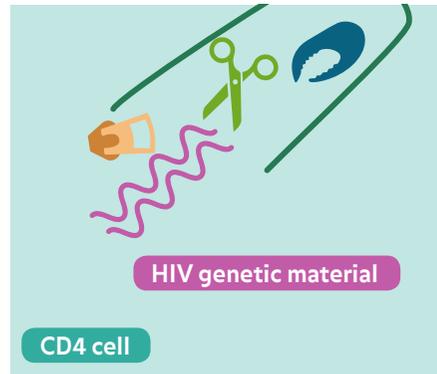
The cure

Researchers are working on new ARVs and to cure HIV. They are looking at a **functional cure**, when HIV remains undetectable and becomes harmless without daily treatment, and what scientists call a **sterilizing cure**, where HIV is completely eradicated. This has happened a few times: in a woman with leukemia who got a stem cell transplant; and in a man with leukemia who got a bone marrow transplant from someone who was naturally resistant to HIV. Unfortunately, he died of cancer in 2020 – but scientists were able to learn from him and this research continues.

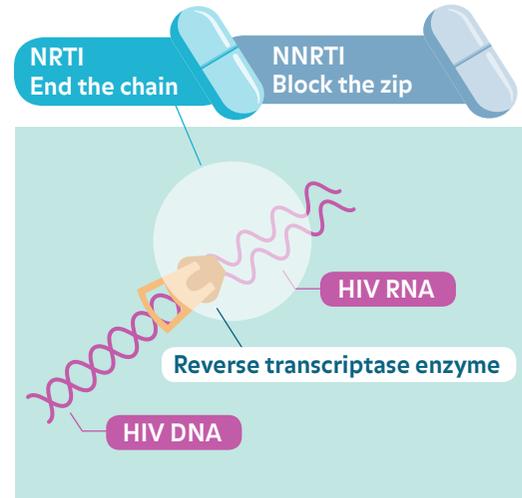
How ART stops HIV replication



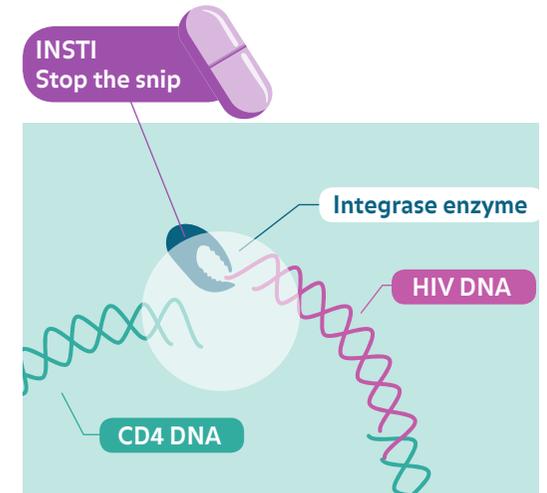
HIV enters a CD4 cell by latching onto a special spot. An entry inhibitor can block this.



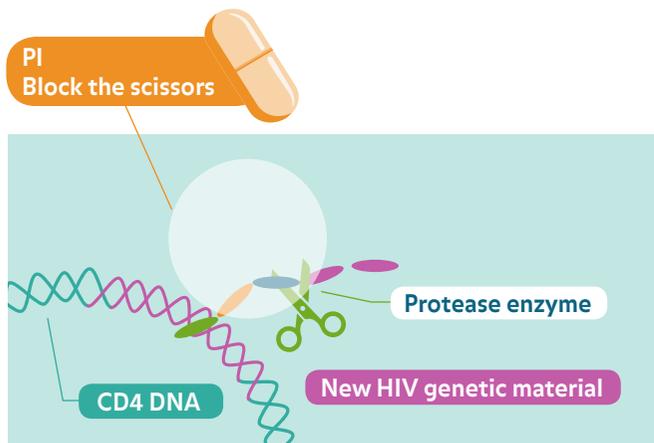
Once inside, the virus empties its genetic material into the cell.



The reverse transcriptase enzyme turns HIV RNA into HIV DNA – like a zip doing up a coat. NNRTIs can block this, while NRTI can put a faulty link in the DNA.



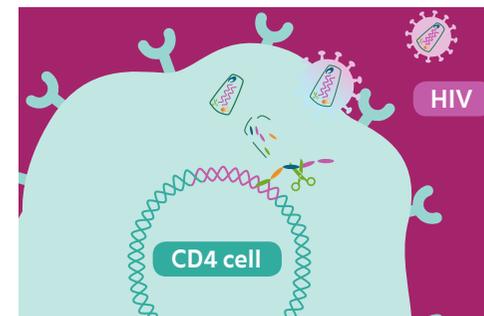
The integrase enzyme inserts the HIV DNA into the CD4 DNA. An INSTI can block this.



The CD4 DNA makes new HIV material, which is cut up by the protease enzyme. A PI can block the scissors.



If not stopped, the new HIV material is assembled into new HIV ready to leave the CD4 cell.



New HIV leaves the CD4 cell.

Link to HIV animation video here: <https://itpcglobal.org/blog/resource/understanding-hiv-and-its-treatment/>

Discussion points

Drug classes – WHO-recommended ARVs



Nucleoside/tide reverse transcriptase inhibitors (NRTIs)

- Lamivudine (3TC)
- Abacavir (ABC)
- Zidovudine (AZT)
- Emtricitabine (FTC)
- Tenofovir alafenamide (TAF)
- Tenofovir disoproxil fumarate (TDF)



Non-nucleoside reverse transcriptase inhibitors (NNRTI)

- Efavirenz (EFV)
- Nevirapine (NVP)



Integrase strand transfer inhibitors (INSTI)

- Dolutegravir
- Raltegravir



Protease inhibitors (PIs)

- Atazanavir/ritonavir (ATV/r)
- Darunavir/ritonavir (DRV/r)
- Lopinavir/ritonavir (LPV/r)

Do people in our community understand how ARVs work?

How can we share this information?

Do people in our community know about new research on HIV treatments and a cure?

Do they know about new LA-ARV formulations?

What would make it easy for people to use LA formulations, and what would be challenging about it?



WHO recommendations for HIV treatment

ART should be initiated for all people living with HIV, regardless of WHO clinical stage and at any CD4 cell count (adults, pregnant and breastfeeding people, adolescents, children and infants)

Rapid ART initiation (within seven days, and as a priority for people who have advanced HIV disease) should be offered to all people living with HIV following a confirmed HIV diagnosis and clinical assessment. Immediate ART initiation is not recommended for adults, adolescents and children living with HIV who have cryptococcal meningitis because of the risk of increased mortality, and should be deferred by 4–6 weeks after initiation of antifungal treatment.

ART initiation should be offered on the same day to people who are ready for it.

Initiation should follow the overarching principles of providing people-centered care. People-centered care should be focused and organized around the health needs, preferences and expectations of people and communities, upholding individual dignity and respect, especially for vulnerable populations, and should promote engaging and supporting people and families to play an active role in their own care by informed decision-making.

I'm living with HIV and I want to get pregnant. Will my baby have HIV, and how will I know?

The best way to keep a mother healthy is also the best way to lower the risk of HIV transmission to babies: ART.

HIV treatment lowers the risk of vertical transmission from between 15% and 45% to under 5%.

WHO recommends that infants who have been exposed to HIV receive ARVs for the first six to twelve weeks of life.

WHO recommendations for diagnosing HIV in infants and children under age 18 months

- WHO recommends that point-of-care nucleic acid testing should be used to diagnose HIV infection among infants and children younger than 18 months of age.
- WHO recommends that adding nucleic acid testing at birth to existing early infant diagnostics testing approaches can be considered to identify HIV infection in HIV-exposed infants.

Discussion points

Do people in our community know that ART reduces the risk of vertical transmission?

Do pregnant people have access to ARV and adherence support as part of their health care?

Can people in our community access HIV nucleic acid testing for infants and children under age 18 months?

Are there different kinds of ARVs?

ARV regimens are given in a certain order; if treatment stops working, or people have other reasons for switching, other options are available.

First-line treatment is the ARV combination that people start with. First-line treatment is safe, highly effective, easy to tolerate and convenient – usually in a single pill, once a day. When taken as directed, first-line treatment can work for many years. First-line ARVs for adults and adolescents include DTG or EFV plus two NRTIs (usually TDF plus 3TC or emtricitabine [FTC]).

Second-line treatment needs to work if first-line treatment fails. The principle behind second-line treatment is using at least one ARV from a new class. The second-line regimen depends on what first-line treatment was (for example, people who took TDF as part of their first-line treatment should switch to AZT, and people who used EFV should switch to a drug from another class, such as DTG).

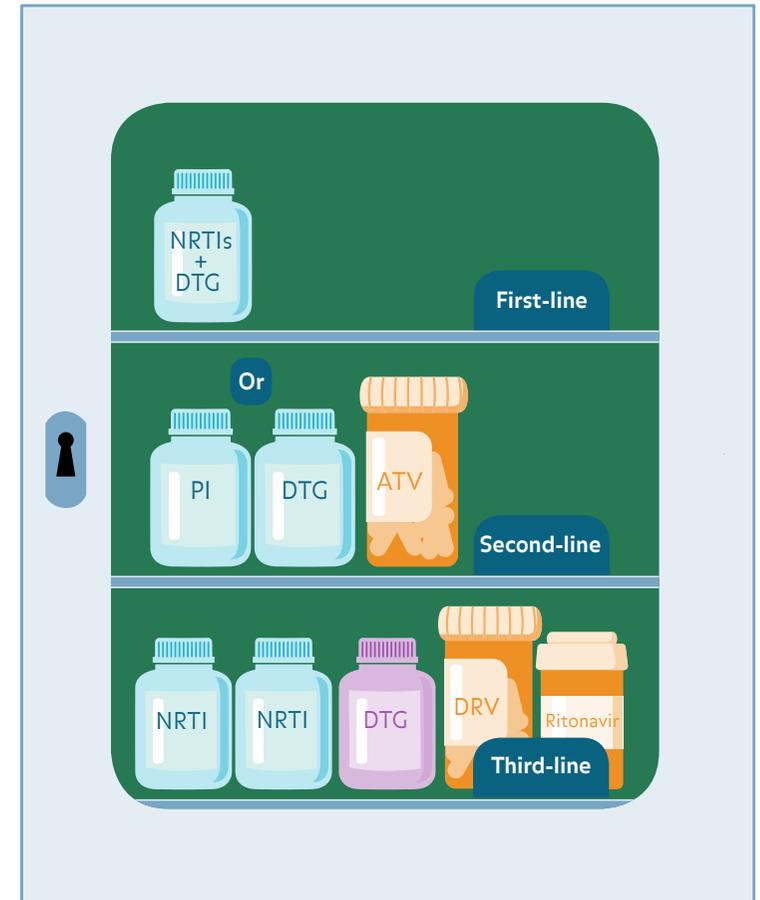
Second-line treatment should have as many of the qualities of first-line treatment as possible, although sometimes it might need to be taken twice daily, or may be more than one pill that has different side effects than first-line treatment (although there may be options for people who are having trouble with side effects). Second-line treatment is usually more expensive than first-line treatment.

Example of switching a first-line ARV combination to a second



Globally, an estimated 1% of all people living with HIV are on **third-line treatment**, but the demand is expected to increase with the expansion of HIV treatment and viral load testing. Third-line treatment is currently the last resort, although as new ARVs enter the market, there will be more and better options.

Third-line treatment is based on the same principle as second-line treatment – to use at least one ARV from a new class and, when possible, to use second-generation protease inhibitors and second-generation NNRTI. Ideally, a test that shows which ARVs are unlikely to work, called genotyping, should be used to optimize third-line treatment, but access to this testing remains limited. Often, third-line regimens need to be taken twice-daily. Third-line treatment is much more expensive than first-and second-line treatment, making it difficult for some countries to provide.



Discussion points

What can we do to make sure that people have access to the HIV treatment they need?

WHO recommendations for first-, second- and third-line HIV treatment

Population	First-line regimen	Second-line regimen	Third-line regimen
Adults and adolescents	2 NRTIs + DTG	2 NRTIs + ATV/r or LPV/r	DRV/r twice-daily + 1 or 2 NRTIs ± DTG twice daily
		2 NRTI + DRV/r	Use genotypic testing to optimize the regimen
	Alternative: 2 NRTIs + EFV	2 NRTIs + DTG	2 NRTIs + ATV/r or DRV/r or LPV/r) ± DTG twice daily
Children	2 NRTIs + DTG	2 NRTIs + LPV/r or ATV/r	DRV/r (for children over age 3 years) + 1–2 NRTIs ± DTG twice daily For children under age 3 years, use genotypic testing to optimize the regimen
	2 NRTIs + LPV/r	2 NRTIs + DTG	DRV/r twice daily + 1–2 NRTIs ± DTG twice daily For children under age 3 years, use genotypic testing to optimize the regimen
	2 NRTIs + NNRTI	2 NRTIs + DTG	2 NRTIs + ATV/r or LPV/r or DRV/r twice daily ± DTG twice daily
Neonates	AZT or ABC + 3TC and RAL		
	AZT + 3TC+ NVP	AZT + 3TC + DTG	

WHO recommendations for third-line HIV treatment

National programmes should develop policies for third-line ART.

Third-line regimens should include new drugs with minimal risk of cross-resistance to previously used regimens, such as INSTIs and second-generation NNRTIs and PIs.

Abbreviations

3TC	lamivudine
ABC	abacavir
ATV/r	atazanavir/ritonavir
AZT	zidovudine
DRV/r	darunavir/ritonavir
DTG	dolutegravir
EFV	efavirenz
INSTI	integrase strand transfer inhibitor
LPV/r	lopinavir/ritonavir
NNRTI	non-nucleoside reverse transcriptase inhibitor
NRTI	nucleoside reverse transcriptase inhibitor
NVP	nevirapine
PI	protease inhibitor
RAL	raltegravir

What side effects could I have from HIV treatment?

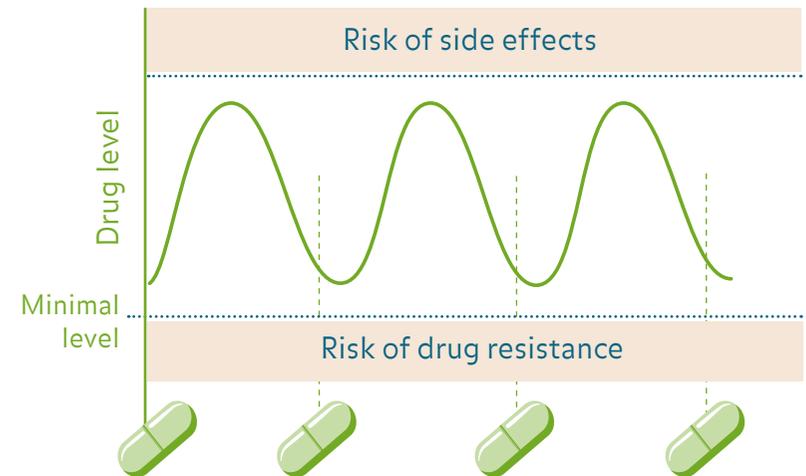
Although newer drugs have fewer side effects than older ARVs, people may find certain antiretroviral medicines difficult to tolerate.

Some commonly-used ARVs have certain side effects – and there are strategies to manage them, which include switching to other HIV medicines, lifestyle changes and treating them. For example:

- **Efavirenz (EFV)** can cause nightmares, trouble sleeping, difficulty concentrating and anxiety; a lower dose (400mg instead of 600mg) with fewer side effects, is now used.
- **Dolutegravir (DTG)** can cause excessive weight gain, especially in Black women and when used with an ARV called TAF. People may need to switch from DTG to other ARVs.
- **Atazanavir/ritonavir (ATZ/r)** can cause kidney stones; drinking at least three liters of water daily reduces the risk of developing them.

- **Lopinavir/ritonavir** increases cholesterol and triglycerides; changes in diet, increasing exercise and, if needed, certain cholesterol-lowering drugs (pravastatin, pitavastatin, or low-dose rosuvastatin) can manage this.

In addition, some medicines interact with ARVs, which can change the amount of a drug in the body. If drug levels are too high, side effects become worse; if they are too low, drugs may become ineffective.



Discussion points

Do people have the information they need about drug interactions, so they don't take drugs and/or herbal remedies that could be harmful with ARVs?

Why does HIV treatment fail?

HIV drug resistance can lead to treatment failure, and it increases the risk of illness and death among people living with HIV.

Pre-treatment drug resistance to NNRTIs (efavirenz and nevirapine) has been found in up to one in 10 people starting ART and is three times more common among people with previous exposure to NNRTIs (such as during pregnancy). NNRTI resistance has been found in nearly half of all infants born to women living with HIV.

Because of the rising global prevalence of NNRTI resistance, WHO has recommended **transition from EFV-based treatment to DTG-based treatment**. DTG has a high barrier to resistance, can be used with many other medicines without problems, is tolerable, effective and safe, including for people with NNRTI resistance.

It is important to identify and address HIV drug resistance, since it limits HIV treatment options. Access to **HIV drug resistance testing** is currently limited to non-existent in many low- and middle-income countries. Instead, viral load monitoring is used to identify HIV treatment failure. WHO recommends that if the viral load is 1,000 copies/ml or more, NNRTI-based treatment should be

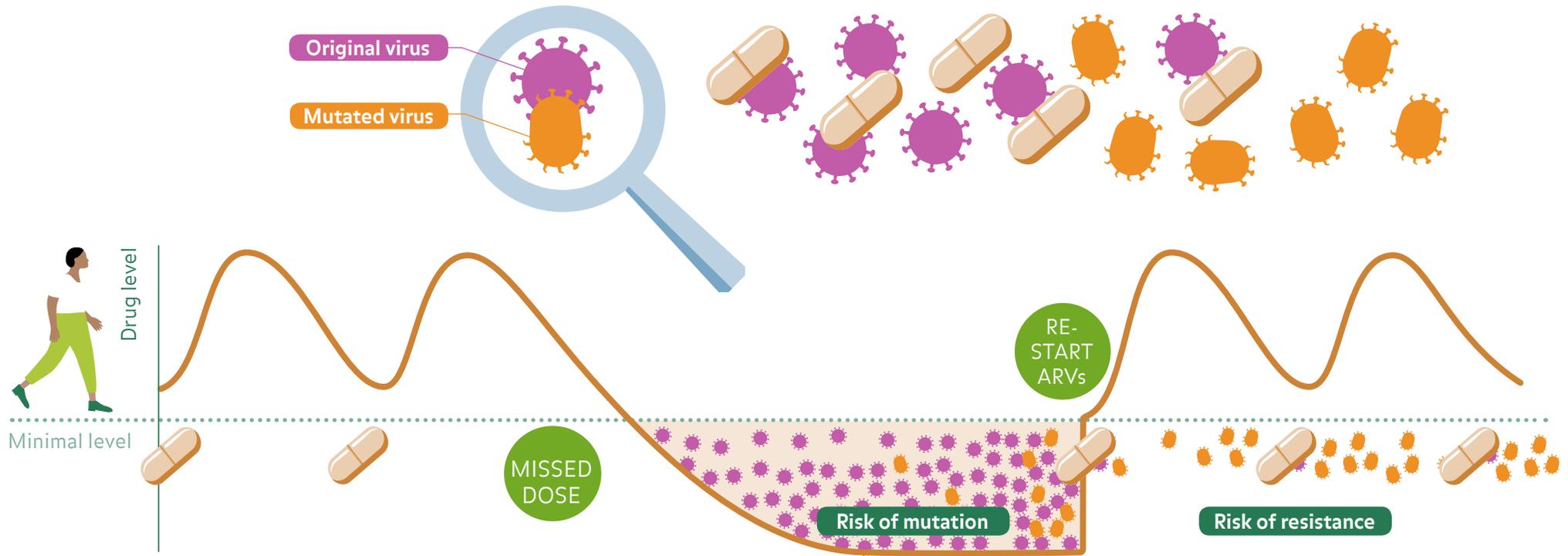
switched to a new ARV combination; people who are not on an NNRTI-based regimen should be provided with enhanced adherence support and undergo another viral load test in three months.

At the individual and health systems level, actions can be taken to address HIV drug resistance:

- ensuring access to optimal ARVs, such as DTG;
- maintaining or increasing service quality– and addressing stigma, discrimination and concerns about confidentiality – to keep people engaged in care.

Adherence, which is essential to the success of HIV treatment, can be facilitated by community ART groups – where members share the responsibility for ART distribution and support one another – community ARV pickup points to decongest clinics and shorten waiting time, multi-month dispensing and home delivery.

Routine viral load monitoring is essential for detecting treatment failure. It must be delivered with information about what the results mean, and when they will be available, as well as actions that will be taken based on the result.



WHO recommends:

- that people who are stable on ART should be offered refills lasting 3–6 months, preferably six months if feasible.
- if possible and feasible, that countries can perform genotyping to identify optimal regimen selection for third-line ART, including the NRTI backbone.

Discussion points

Are the community and our healthcare centers doing everything they can to keep people in care?

Do people in our community have access to viral load monitoring?

Are people in our community who need HIV drug resistance testing able to access it?

How can I tell if my HIV treatment is working?



Undetectable (≤50 copies/ml)

The goal of HIV treatment is to suppress the virus maximally and durably.

Achieving and maintaining an **undetectable viral load** (when the amount of HIV in a small blood sample is so low that tests cannot find it) is the most important thing that people living with HIV can do to stay as healthy as possible; an undetectable viral load also prevents transmission to sex partners. *However, ART cannot cure HIV – even when viral load is undetectable.* This is because HIV hides in resting cells, where ARVs cannot reach it – and if people stop taking ARVs, it will emerge and multiply. Adhering to HIV treatment can stop the virus from doing more harm to the immune system, and improve health, quality and length of life among people living with HIV.

Since 2016, WHO has recommended **viral load testing** to monitor the response to ART. An undetectable viral load means that HIV treatment is working. When viral load is detectable, actions can be taken to improve treatment outcomes.



People living with HIV have the right to, and the need for information about, and access to **routine viral load testing (RVLT)** – with prompt results. To expedite results, WHO recommends point-of-care viral load testing, which will also improve access to RVLT, help people stay in care, facilitate clinical decision-making based on its results, and optimise HIV treatment outcomes.

RVLT can encourage people living with HIV to maintain or improve adherence and stay in care; it can also identify potential treatment failure and trigger actions to address it (including enhanced adherence support, follow-up testing and switching to a new ARV regimen), thereby improving health, quality of life and survival among PLHIV.

When **viral load is between 50 and 1,000 copies/ml**, enhanced adherence support and a follow-up viral load test in three months are called for. When the viral load is 1,000 copies/ml or more, people who are receiving NNRTI-based ART should switch to a new regimen; people who are receiving other ARVs should be provided with enhanced adherence support, follow-up viral load testing, and further actions based on its results.

WHO recommendations for viral load monitoring

Viral load is recommended as the preferred monitoring approach to diagnose and confirm treatment failure. Point-of-care viral load testing may be used to monitor treatment among people living with HIV receiving ART.

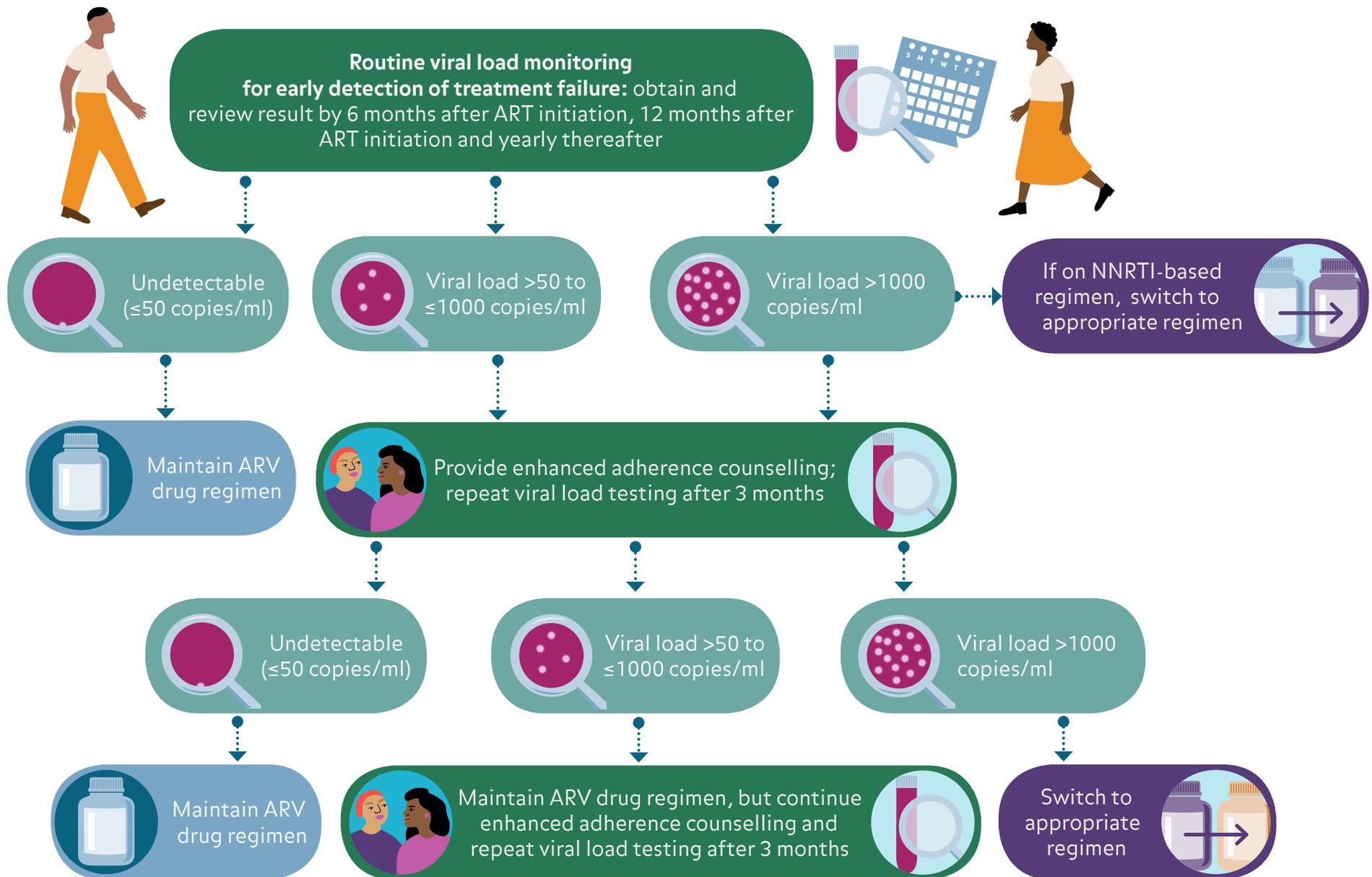
CD4 cell count monitoring for people established on ART can be stopped in settings where routine viral load monitoring is available. If viral load testing is not routinely available, CD4 count and clinical monitoring should be used to diagnose treatment failure.

Monitoring treatment of pregnant and breastfeeding people

- Whenever possible, use same-day point-of-care for viral load testing of pregnant and breastfeeding people
- Adherence counselling should be provided at all antenatal care and postnatal visits to ensure that viral suppression is maintained throughout pregnancy and breastfeeding
- For all pregnant people, no matter when they started ART, conduct viral load testing at 34-36 weeks of gestation (or at the latest at delivery) to identify women who may be at risk of treatment failure and/or may deliver infants at higher risk of perinatal transmission

Discussion points

- Do people living with HIV in our community have access to prompt results from viral load testing?**
- Do people living with HIV in our community have access to point-of-care viral load testing?**
- What can we do to make point-of-care viral load testing available, or improve access to it?**



Source: WHO (2021) Updated Recommendations on HIV Prevention, Infant Diagnosis, Antiretroviral Initiation and Monitoring.

People living with HIV and COVID-19 – how can we lower the risk?

People living with HIV are not more likely to become infected with the SARS-CoV-2 virus than HIV-negative people, but if they contract it, they are at increased risk of serious illness, hospitalization and death from COVID-19.

The risk of these bad outcomes is higher among older people living with HIV and those who have co-existing conditions (such as diabetes, high blood pressure, heart, liver or kidney disease and certain types of cancer). Not being on HIV treatment and having a low CD4 cell count and/or a high viral load – even for people on ART – also increases the risk of severe illness, hospitalization, and death from COVID-19.

COVID-19 vaccines are very effective at preventing severe illness, hospitalization, and death, but they do not always prevent someone from becoming infected with SARS-CoV-2. Masking indoors, social distancing and other precautions are still important, even for fully vaccinated PLHIV.

All approved COVID-19 vaccines are safe for people living with HIV. So far, there have not been any reports of more frequent, unusual or serious side effects from COVID-19 vaccines among PLHIV.

None of the vaccines are based on live, weakened viruses, so they cannot cause COVID-19. These vaccines can be used safely with antiretrovirals – in fact, HIV treatment helps them to work by keeping the immune system healthy.

In laboratory studies immune responses to COVID-19 vaccines from Moderna, Pfizer and AstraZeneca/Oxford were:

- similar among PLHIV with CD4 cell counts >500 cells/mm³ and HIV-negative people;
- slightly weaker among people with CD4 cell counts between 500 and 200 cells/mm³; and
- much weaker among people with a CD4 cell count of less than 200 cells/mm³.

Because PLHIV – especially those with a CD4 cell count of <200 cells/mm³ – are vulnerable to serious illness, hospitalization and death from COVID-19, they should be prioritized for COVID-19 vaccines, with respect for their confidentiality. People living with HIV, especially those who are not on HIV treatment and/or have a CD4 cell count below 200 cells/mm³, should also be prioritized for boosters, because they may have weaker immune responses to COVID-19 vaccines, and these responses are more likely to wane over time.



WHO recommendations for COVID-19 vaccines and HIV services during the COVID-19 response

WHO recommends:

- prioritizing all PLHIV for COVID-19 vaccines
- supporting PLHIV to continue ART, and adapting services to make this easier and more efficient during the COVID-19 response
- continuing to provide HIV prevention and testing services with linkage to ART initiation as a priority
- ensuring that people who start ART can remain on it to reduce health risks and complications during COVID-19, including maintaining viral load suppression. This must be classified as an essential service, together with prevention, diagnosis and treatment of co-morbidities and co-infections.

Discussion points

Do people living with HIV in our community need support to start or stay on ART?

How has COVID-19 affected access to HIV services?

What have communities done to help maintain or restore these services?

Do people in our community have access to COVID-19 vaccines?

Are COVID-19 boosters available in our community?

Are people living with HIV in our community, especially those who have a low CD4 cell count, being prioritized for boosters?

What is TB and how can I prevent it?

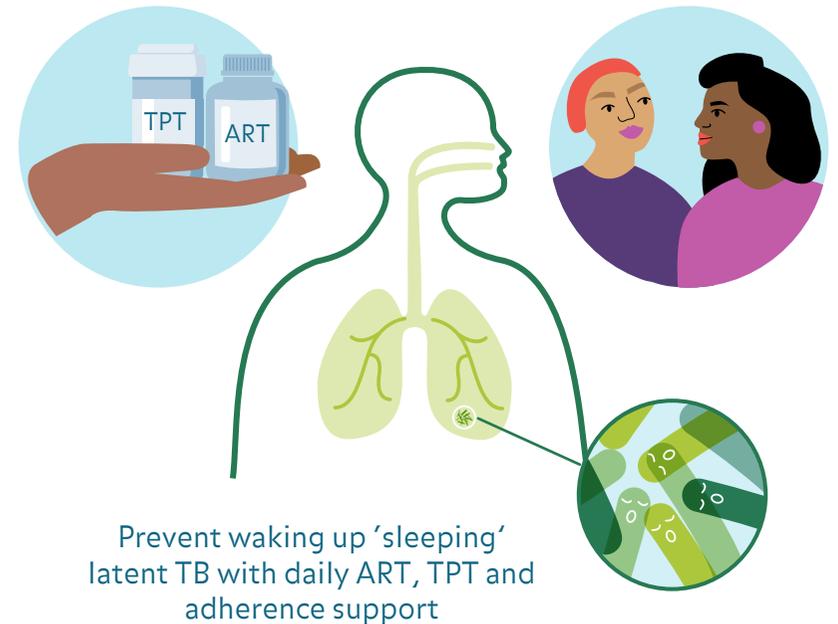
People living with HIV who have **latent TB infection** (LTBI) are up to 18 times more likely to develop TB disease than people who do not have HIV.

The risk for TB disease can be lowered by taking daily ART and **TB preventive treatment** (TPT) – a course of one or more of the same drugs used to treat TB. TPT can prevent TB bacteria from multiplying and causing illness.

TPT is recommended for all PLHIV over age 10 years, no matter what their CD4 cell count is. This includes people who are on ART, pregnant people and people who have already been treated for TB – even if they have not been tested for LBTI (by tuberculin skin testing or a blood test, called the interferon gamma release assay). PLHIV with TB symptoms (fever, cough, night sweats and weight loss) need different tests for TB disease.

Education about TPT and peer support can help people stay adherent to TPT. Adherence can be challenging because TPT has side effects, which can sometimes be serious. For example, people who are chronically dependent on alcohol, or malnourished,

have kidney failure, HIV or diabetes are at higher risk for nerve injury from isoniazid, and should be offered vitamin B6 with their TPT or a different drug regimen. People who are having appetite loss, nausea, vomiting, abdominal discomfort, persistent fatigue or weakness, dark-colored urine, pale or yellowish stool during their TPT should immediately get in touch with a healthcare worker.



WHO-recommended options for TPT

- Daily isoniazid for six to nine months*
- Daily rifampicin for four months
- Daily isoniazid and rifampicin for three months
- Weekly rifapentine and isoniazid for three months
- Daily rifapentine and isoniazid for one month

*In places with a high TB rate, daily isoniazid may be recommended for up to 36 months



Discussion points

Do people living with HIV in our community know about TPT?

Do people in our community have access to TPT?

Do people in our community have access to information about TPT side effects and adherence support?

How can I find out if I have TB disease?

HIV testing is WHO-recommended for people who have been diagnosed with TB disease.

Screening for TB disease at every healthcare visit is WHO-recommended for all adults, adolescents and children living with HIV.

All people living with HIV who have TB symptoms (cough, fever, night sweats and weight loss) and/or a close contact who has been diagnosed with TB should be tested for TB disease – and COVID-19 – with a WHO-recommended, **rapid molecular test**. Rapid molecular testing can be used to test for COVID-19 and extrapulmonary TB; they can diagnose pulmonary TB in two hours. Some rapid molecular tests can detect resistance to rifampicin, a first-line TB drug.

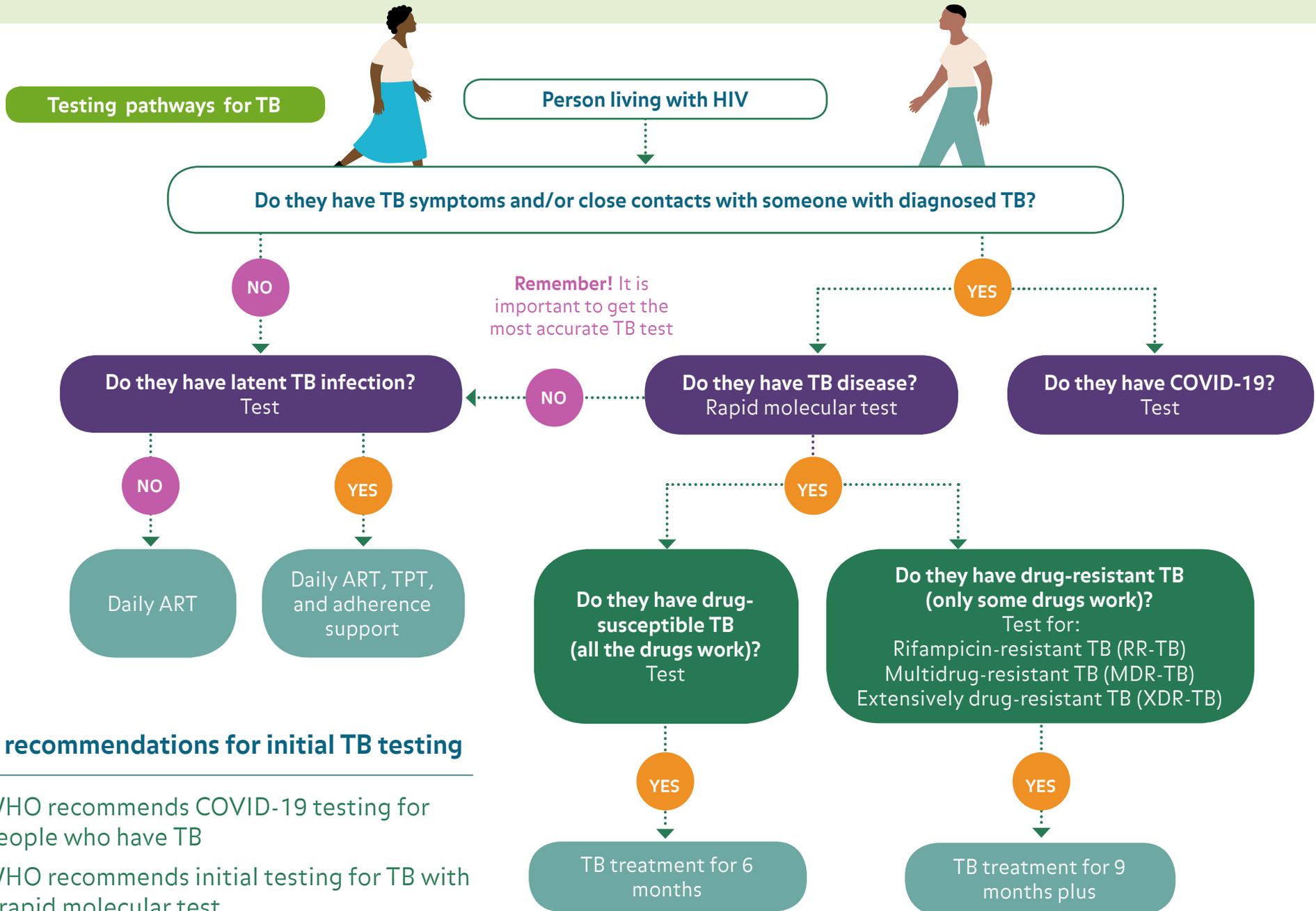
TB has become resistant to medicines commonly used to treat it. People who have **rifampicin-resistant TB** (RR-TB) may have **multidrug-resistant TB** (MDR-TB) or **extensively drug-resistant TB** (XDR-TB).

WHO recommends TB drug resistance testing with tests that detect the genetic material of TB (and other diseases), called **low-complexity nucleic acid amplification tests**. They can detect resistance to isoniazid (a first-line TB drug), fluoroquinolones (which are used in the 9–12 month MDR-TB treatment regimen), ethionamide and amikacin (which may be used to treat MDR-TB) in less than 90 minutes.

TB drug resistance testing helps to ensure that a person gets effective medicines. People with MDR-TB or XDR-TB are treated with a combination of medicines. If some of them are not effective for the type of TB they have, it can worsen drug resistance. This happens because the effective medicines are not strong enough to cure TB on their own. TB can become resistant to these medicines, leaving people with fewer treatment options.

Discussion points

Do people in our community understand why access to TB drug resistance testing is important?
Are people in our community getting the right tests for TB, including resistance testing?



WHO recommendations for initial TB testing

- WHO recommends COVID-19 testing for people who have TB
- WHO recommends initial testing for TB with a rapid molecular test

How is TB treated?

People living with HIV can be treated successfully for TB, but adherence to medicines and side effects management can be challenging. PLHIV need information about side effects and how to manage them, drug interactions and as ongoing adherence support.

TB treatment has several side effects, some of which are serious. People who are taking TB treatment need full information about which side effects will improve over time or can be managed, versus those that require switching to other medicines.

Interactions between TB drugs, ARVs and other commonly-used medicines must be managed. Sometimes by changing dosing, scheduling or switching to other treatments. Some TB medicines lower the amount of other drugs in the bloodstream to an ineffective level – which can lead to drug resistance – or increase them, which worsens side effects. During TB treatment, PLHIV may need to start or switch ARVs, or change dosing, by taking them twice-daily instead of once-daily.

WHO recommendations for treating TB and HIV

- ART should be started as soon as possible in adults, adolescents and children being treated for HIV-associated TB – within two weeks of initiating TB treatment, regardless of CD4 cell count.
- People living with HIV and TB, who are not receiving treatment, should start TB treatment first, followed by HIV treatment as soon as possible, within the first two weeks of TB treatment.
- WHO recommends ART for all people with HIV and drug-resistant TB, requiring second-line anti-TB drugs and irrespective of CD4 cell count, as early as possible (within the first eight weeks) following initiation of anti-TB treatment.



**Drug-susceptible TB
(all the drugs work)**

2 months: isoniazid, rifampin and pyrazinamide
4 months: isoniazid and rifampin



**Drug-resistant TB
(only some drugs work)**
Rifampicin-resistant TB
Multidrug-resistant TB
Extensively drug-resistant TB

9 months plus: treatment dependent on which drugs TB is resistant to



Extrapulmonary TB

2 months: isoniazid, rifampicin, ethambutol and pyrazinamide
4 months: isoniazid and rifampicin

Drug-susceptible TB (DS-TB) is treated for six months with a combination of medicines (isoniazid, rifampin and pyrazinamide for two months, followed by four months of isoniazid and rifampin). WHO is expected to update its guidelines on DS-TB treatment, to consider a four-month treatment regimen.

Drug-resistant TB (DR-TB) treatment varies in length and type, ranging from six months to over a year, depending on which drugs it is resistant to. Treatment for DR-TB is selected based on results of resistance testing, a person's TB treatment history and other information – all to ensure that a person receives effective drugs.

Generally, **extrapulmonary TB** is treated with rifampicin, isoniazid, ethambutol and pyrazinamide for two months followed by four months of rifampicin and isoniazid; In some cases, steroids are also used and drug-resistant forms of extrapulmonary TB may need to be treated with different drugs, and/or for a longer duration.



- Do people living with HIV in our community have information about interactions between ARVs, TB medicines and other drugs?
- Are ARVs and other drugs adjusted if needed for people living with HIV in our community who are undergoing TB treatment?
- Are people in our community getting information about side effects from TB treatment and how to manage them?

WHO recommendations for treating drug-susceptible and drug-resistant TB

Health education and counselling on the disease and treatment adherence should be provided. A package of adherence interventions may be offered to people on TB treatment with a suitable option for treatment administration.

Drug susceptible TB should be treated with two months of isoniazid, rifampin and pyrazinamide, followed by isoniazid plus rifampin for four months.

People with MDR-TB should be treated using ambulatory care, rather than hospitalization, and care should be decentralized.

- **Rifampicin-susceptible and isoniazid-resistant TB:** six months of treatment with rifampicin, ethambutol, pyrazinamide and levofloxacin.
- **MDR-TB or RR-TB:** a shorter, all-oral bedaquiline-containing regimen for 9-12 months in people who are eligible (no resistance to fluoroquinolones and less than one month's exposure to second-line TB medicines used in this regimen)

- **Longer regimens for MDR-TB or RR-TB:** Treatment should include all drugs from Group A (levofloxacin or moxifloxacin, bedaquiline, linezolid) and at least one from Group B (clofazimine, cycloserine or terizidone) – at least three drugs should be continued if bedaquiline is stopped. One or two drugs from Group A should be combined with both Group B drugs. If a regimen cannot be made from Group A and Group B drugs, add Group C drugs (ethambutol, delamanid, pyrazinamide, ipipenem-cilastatin or meropenem, amikacin or streptomycin, ethionamide or prothionamide and p-aminosalicylic acid) to complete it.
- A regimen of bedaquiline, pretomanid and linezolid can be used for MDR-TB with additional resistance to fluoroquinolones, under operational conditions.

Why don't we have access to medicines we need, and what can we do to get them?

Intellectual property (IP) rights prevent access to affordable, life-saving medical technologies by creating dangerous monopolies. Allowing exclusive control over product manufacturing limits supply (as has happened with COVID-19 vaccines and other medicines). Without competition, patent holders can decide where their products are sold and their price, keeping them unaffordable and inaccessible in many countries. In contrast, competition between generics companies has lowered ARV prices, helped to ensure that there is an adequate supply of these medicines, and saved millions of lives.

The 2001 Doha Declaration enables governments to address public health needs by using **TRIPS flexibilities**. These flexibilities include:

- **compulsory licensing** – allowing a country to authorise production of generic versions of medicines without the patent holder's permission
- **applying rigorous patentability criteria**, which prevents unmerited patents and evergreening
- **patent oppositions**, which allow activists and civil society organisations to challenge unmerited patents and applications.

Voluntary mechanisms such as donations, do not solve the problem of sustainable access. Voluntary

licenses (VLs) controlled by the pharmaceutical industry, allow it to keep control of lucrative markets while appearing to grant widespread access. But, middle-income countries are often excluded from these agreements, leaving them at the mercy of pharmaceutical corporations. VLs may contain harmful provisions that create barriers to use of TRIPS flexibilities by governments and activists, control the supply of raw materials or require the patent holder's permission for research. If too many generics producers sign VLs, none are left to produce medicines for excluded countries.



COVID-19 has highlighted the urgent global need for access to medical technologies. Activists, civil society and governments have used TRIPS flexibilities to improve access to medicines. Patent oppositions on ARVs have saved lives and millions of dollars, allowing countries to expand coverage and provide access to newer and locally-produced HIV, COVID-19, hepatitis C and TB medicines. Countries have used compulsory licensing – despite political backlash – to ensure that affordable medicines are available and accessible. The harsh lessons of the COVID-19 pandemic and from the last two decades have led activists to demand an end to systemic corporate control of medicines perpetuated by the TRIPS Agreement.

Access to tests, vaccines and treatments can be controlled by companies for 20 years and beyond.



Discussion points

Do people in our community know what the Doha Declaration is?
How can people in our community improve access to medicines?
Who can help us do so?



Video

ITPC. Understanding HIV and its Treatment. Available at: <https://itpcglobal.org/blog/resource/understanding-hiv-and-its-treatment/>

Updates and information on HIV and treatment

HIV i-base: <https://i-base.info>

Treatment Action Group Pipeline Report. Available at: <https://www.treatmentactiongroup.org/resources/pipeline-report/2021-pipeline-report/>

Guidelines and information from WHO

WHO Consolidated Guidelines on HIV Prevention, Testing, Treatment, Service Delivery and Monitoring: Recommendations for a Public Health Approach. 2021. Available at: <https://www.who.int/publications/i/item/9789240031593>

WHO Consolidated Guidelines on Tuberculosis: Module 1: Prevention: Tuberculosis Preventive Treatment. 2020. Available at: <https://www.who.int/publications/i/item/9789240001503>

WHO Answers to Frequently Asked Questions on TB Preventive Treatment (TPT). 2020. Available at: https://cdn.who.int/media/docs/default-source/campaigns-and-initiatives/world-tb-day-2020/5-faqs-tb-preventive-treatment.pdf?sfvrsn=d633097e_2

WHO Consolidated Guidelines on Tuberculosis. Module 2. Systematic Screening for Tuberculosis Disease. 2021. Available at: <https://apps.who.int/iris/bitstream/handle/10665/340255/9789240022676-eng.pdf>

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WHO. HIV Drug Resistance. 22 November 2021. Available at: <https://www.who.int/news-room/fact-sheets/detail/hiv-drug-resistance>

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WHO. Coronavirus disease (COVID-19): COVID-19 Vaccines and People Living with HIV. 14 July 2021. Available at: [https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-\(covid-19\)-covid-19-vaccines-and-people-living-with-hiv](https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-(covid-19)-covid-19-vaccines-and-people-living-with-hiv)

Resources

Access to medicines

The Doha Declaration. Available at: https://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_trips_e.htm

Resources from the Make Medicines Affordable Campaign

The Problem With Patents (policy brief). Available at: <https://makemedicinesaffordable.org/resource/the-problem-with-patents/>

Patent Evergreening (animated video). Available at: <https://makemedicinesaffordable.org/resource/evergreening-animation-english-short/>



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