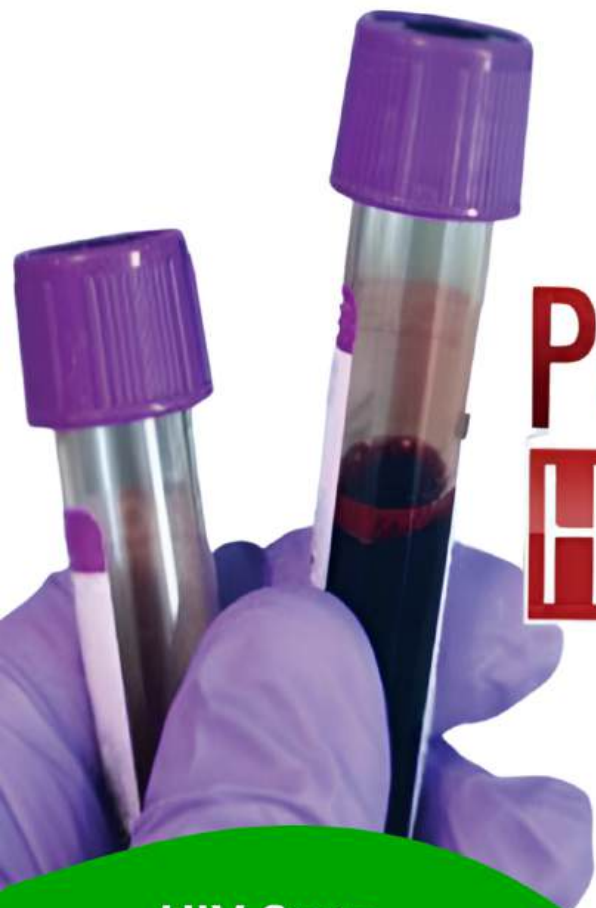




preventivecareinternational

HIV Cure Fact Sheet for Community Advocates

"The Search for an HIV Cure: A basic introduction about HIV Cure Research"



POSSIBLE HIV CURE

HIV Cure
Coalition members



Background:

Globally, HIV cure research is entering a new phase of scientific innovation, with promising breakthroughs in proof-of-concept cases. Some individuals have been cured of HIV through complex procedures such as stem cell transplant and those who have cleared the virus after decades living with HIV (Elite controllers).

The community needs to understand the different strategies being used to find a cure – i.e. strategies that have already shown results and those being studied. It is important to encourage community participation in HIV cure research because the science behind HIV cure is complex, it needs to be explained in simple language for everyone to understand.

All stakeholders including policy makers, other leaders and media need to be sensitized on the HIV cure efforts to create a conducive environment for research, ownership, supportive policies and advocacy. Some of the methods being tested require expensive equipment and special training, so more funding is needed to support this work. With good knowledge advocates can play a key role in pushing for more HIV cure research and helping communities to understand HIV cure.



Introduction to HIV cure strategies.

What does "HIV cure" mean?

A cure means completely removing HIV from the body or controlling it, so it doesn't cause illness. HIV cure can take two forms: Classic cure or functional cure (Remission).

- **Classic cure** is the permanent removal of all HIV from a person's body.
- **A functional cure (Remission)** is the control of HIV for a given period without the use of antiretroviral drugs (ARVs).

In both classic and functional cure, a person can live a healthy life without ARVs. If someone with HIV takes their medication correctly, the virus becomes so low that it can't be seen or passed to others. This does not mean the person is cured of HIV as the virus hides in some places in the body called reservoirs such as the brain, lymph nodes, peripheral blood, gut and bone marrow.

In these hiding places, HIV stays dormant inside cells - meaning it is not actively dividing. When this person stops taking ARVs correctly the dormant virus becomes active and starts dividing resulting in viral rebound - i.e. detectable levels of HIV in the blood after a period of having undetectable levels and this could lead to illness. If we do not fully remove or control HIV, it will always come back when ARVs are stopped.



Why?

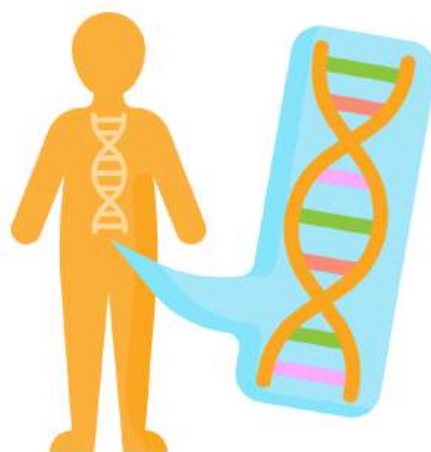
Why don't we have an HIV Cure in the community?

HIV evades the natural body immune system and available treatment by hiding in the Latent Reservoirs i.e. hidden pockets of infected cells that persist even during treatment. Once antiretroviral treatment is stopped, viral suppression cannot be maintained as these reservoirs reignite infection.

HIV Cure strategies

There are several HIV cure strategies being explored in different countries including Uganda to either permanently eliminate the HIV virus (classic cure) or control the HIV virus for a given period without ARVs (functional cure). The HIV cure strategies include:

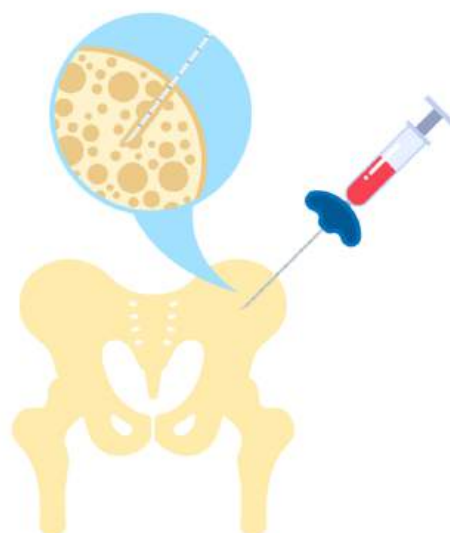
Gene therapy: A strategy to modify a person's cells to fight HIV virus. This strategy involves editing genes to remove a protein receptor known as CCR5—the door HIV uses to enter CD4+ T Cells .



Broadly neutralizing antibodies (bNAbs) –

Antibodies that can provide broad neutralization against many strains of HIV. They prevent new cells from becoming infected or target infected cells for elimination by the immune system.

Stem cell transplantation: Involves replacing HIV infected cells with HIV-resistant stem cells derived from the blood or bone marrow of another person.

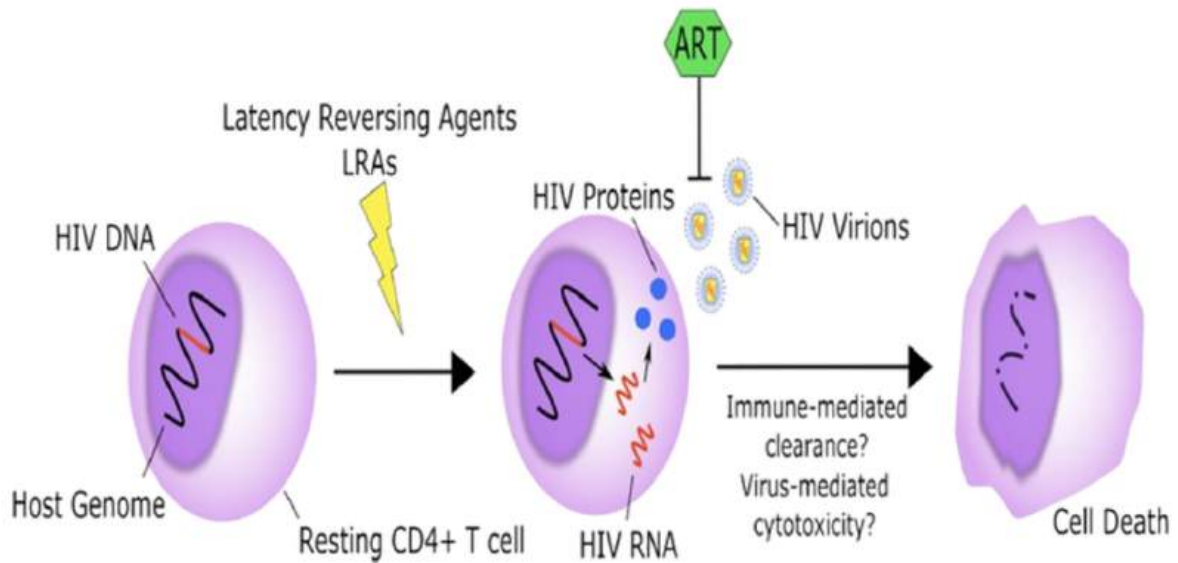


Analytical treatment Interruption (ATI): A cure research strategy where a person temporarily stops taking ARVs under close medical supervision. The goal is to evaluate whether an investigational drug or other cure strategy can control the virus without taking ARVs

Immune modulation: Immune modulators refer to any type of drug or procedure that causes sustained changes in the immune system to better fight HIV. Successful immune modulation would both identify latent cells harboring the virus before they reactivate and enhance the capacity to kill HIV once cell division begins again. Researchers are exploring natural killers and neutralizing antibodies and how to make them more potent through immune modulation. These include HIV-specific CD8+ T cells and broadly neutralizing antibodies.



Shock and kill: This two-step strategy aims to shock the virus from its hiding places (reservoirs) using drugs called latency reversing agents, followed by killing the virus with immune cells (bNAb), ARVs or vaccines.



Block, lock and stop - In this strategy, the virus is permanently forced into complete dormancy and preventing it from exiting hiding places to replicate or make copies. This means the virus remains undetectable without ARVs.

Vaccines / Immunotherapies - Aim to enhance immune responses to control the virus. A vaccine trains the body to fight and resist infection. Importantly, vaccines do not contain the virus itself



People Cured of HIV:

Over the years, a few individuals have been cured of HIV through very advanced medical procedures, giving hope to researchers and communities worldwide that an HIV cure is possible. These include;



Timothy Brown ("Berlin Patient")

Remained cured with non-detectable viral load for more than 12 years until his death from a re-occurrence of cancer in 2020.

Adam Castillejo ("London Patient")

ART interruption was initiated in September 2017 and there is no evidence of viral rebound or detectable intact virus. HIV-specific antibodies have waned.



Paul Edmonds ("City of Hope patient")

Received a stem cell transplant targeting cancer and HIV. Edmonds ceased his HIV treatment in March 2021, and subsequent tests revealed no evidence of HIV in his body.



Marc Franke ("Dusseldorf Patient")

Underwent a transplant to receive new immune cells created using stem cells taken from a donor with a genetic resistance to HIV. Today, after numerous tests and scans, we can confidently say there is no trace of HIV reservoirs in his body.



Loreen Willenberg

An elite controller who was diagnosed in 1992. Never took ART. No detection of viral DNA in blood and tissue.

"New York Patient"

ART interruption was initiated in 2020 and there is no evidence of viral rebound or detectable intact virus. HIV-specific antibodies have waned.

Esperanza Patient

Diagnosed in 2013. No intact viral DNA detected in blood and tissue.





Myths and Misconceptions about HIV cure

There are several myths and misconceptions about HIV cure and some of these include:



Herbal medicines and therapies can cure HIV

Some people choose to take alternative forms of medicine, such as herbal remedies, as a natural way of treating HIV. However, there is no evidence that these medicines work. Taking herbal medicines can be dangerous as they will not protect your immune system from infection and may interact poorly with ARVs if you are taking them alongside treatment.



Being HIV undetectable means one is cured

Some people who adhere to treatment well are able to achieve undetectable but this doesn't mean that you're cured, as HIV is still present in your body (Reservoirs).

This means that if you stop taking treatment then your viral load can increase – affecting your long-term health and making HIV transmittable again. You can read more about what it means to be undetectable [here](#).



Having no symptoms means you're cured of HIV

HIV can exist in the body without displaying any symptoms for a long time. Even though you may feel psychologically well, when you stop or don't take treatment well the virus can rebound and compromise the immune system



Prayer and spiritual powers can cure HIV

Religion / prayers can be good for providing supportive community networks, but you should also continue to visit your healthcare worker for treatment and medical advice. There has been no scientific evidence that anyone has been cured of HIV through prayer.



Having sex with a virgin will cleanse and cure HIV

The **'virgin cleansing'** myth is the belief that sex with a virgin girl can cure men of HIV. Having sex with a virgin will not cure HIV, it will just put them at risk of being infected with the virus if protection isn't used. For those under the age of consent, or those who have not consented to sex, this is also a form of sexual violence and is a criminal offence.

Community advocates role in advancing HIV cure research

- The science is complex so it needs to be broken down for the community to understand.
- The community needs to know about the HIV cure strategies—those proven to work and those currently under research.
- Encouraged community members to participate in HIV cure research.
- Governments, policy makers and regulatory authorities need to put in place policies and regulations that facilitate HIV cure research.
- To show success or failure of a strategy, governments and funders need to allocate more resources to HIV cure research.
- Advocates need to increase community advocacy for HIV cure research





For more information / resources about HIV cure research

PCI website <https://www.preventivecareinternational.com>

AVAC <https://www.avac.org>

JCRC <https://www.jcrc.org.ug>

MUWRP <https://www.muwrp.org>

Uganda HIV cure coalition

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