A short history of a big discovery

How science discovered that antiretroviral treatment (ART) can bring the levels of HIV in a person’s blood to levels so low it’s almost undetectable — and impossible to transmit.

2000: Research is conducted among about 400 Ugandan sero-discordant couples (one person has HIV and the other does not). Patients treated with the drug stavudine, which lowers the level of HIV in the blood and the virus on the cell surface, largely eliminates the risk of transmission.

2008: The Swiss Federal Commission for HIV and AIDS releases a report saying that people on effective treatment, with undetectable levels of HIV in their blood and who do not have other STIs, cannot transmit the virus to others. The statement is not widely accepted.

2011: The NIAID (National Institute of Allergy and Infectious Diseases) studies find that early ART prevents 90% of HIV transmissions among sero-discordant couples as long as the HIV-positive partner has undetectable HIV viral load. This is the first large study to find that having an undetectable viral load could make it impossible to transmit the virus.

2016: Research among more than 900 sero-discordant couples again reveals that effective ART and an undetectable viral load lead to zero new HIV infections among the couple despite 58,000 instances of sex without condoms.

Alberto Pinto

How new science is redefining old notions of safe sex

What if I told you that people who were on effective HIV treatment and who had repeatedly shown undetectable levels of the virus in their blood could have sex without a condom with no risk of transmitting the virus?

Sound too good to be true? In January 2008, the Swiss Federal Commission for HIV and AIDS released a statement saying just this: people whose antiretroviral therapy has brought the level of HIV in their blood to very low or undetectable levels could not sexually transmit the virus.

When ART lowers the amount of HIV in the blood to the point where it is difficult to detect, this is known as “viral suppression”.

But the declaration was based on fairly small studies, which the scientific community did not consider robust enough to support a statement with huge implications for health messages and, in turn, people’s choices. If the advice turned out to be wrong, a powerful voice might stop using condoms after hearing it could be exposed to HIV and sexually transmitted infections (STIs).

Consequently, the declaration failed to gain much traction and left many people confused.

Almost a decade later, this has changed. We finally have enough credible scientific evidence from several strong studies to convince us beyond any reasonable doubt: effective treatment and viral HIV transmission is impossible.
HIV prevention pill

PrEPing young women for the HIV prevention pill

How new science is redefining old notions of safe sex

You can’t always negotiate. “You know, sometimes women can be strong and say no [to unprotected sex], but sometimes it’s not possible,” Khoza explains.

A 2017 study published in the Global Health Action journal found that although women reported negotiating safe sex in their relationships, they feared the possible consequences of insisting on using condoms with their partners.

About 20km away from Durban, Wendy Makheya* is standing in the corridors of the Mega City mall in Umlazi. Churchgoers and other local chicks in to do their Sunday shopping. She reaches for her phone inside her tan handbag and frantically types a message. “I just came back from my friends,” she giggles. “Hectic weekend.”

Makheya is 22. She’s been taking the HIV prevention pill for more than a year and a half. She lives with her grandmother and two uncles in Umlazi and is also part of the Caprina study.

Makheya says Truvada is her best chance at staying HIV negative. “Last year I had two boyfriends,” she explains. “One of them completely refused to go for HIV testing, while the other agreed to go only once.”

“It’s so frustrating when a man doesn’t want to use a condom. At the moment when he refuses, we obviously don’t use protection. But at the back of my mind I’m always thinking: ‘PrEP, this is your time to work!’”

Makheya says her friends are sceptical about PrEP. “They were not comfortable with using Truvada because they didn’t believe it would prevent them from getting infected with HIV.”

Makheya admits that, at least initially, PrEP was hard to get used to. She remembers: “After a week [of taking PrEP] I started doubting whether it works because I was struggling to sleep, vomiting a lot and had a rash around my body.”

But nine out of 10 people using Truvada experience no side effects, according to infectious diseases specialist Kevin Rebe from the Anova Health Institute.

Gumbi says Caprina’s medical professionals counsel and encourage their clients to continue using condoms to protect them against sexually transmitted infections (STIs) other than HIV, and pregnancy.

According to the US Centers for Disease Control, when people use condoms correctly and consistently, they are less likely to contract STIs but infections can happen when the condom doesn’t cover all of an infected area or sores such as herpes.

Moreover, often women struggle to negotiate using condoms with their male partners, which is why they need PrEP. “If the first place, explains Gumbi, “I think I got an STI last year because I wasn’t using condoms.”

Makheya remembers. “It was really bad. But after I got treatment, I promised myself to always use condoms.”

The national health department and Higher Education and Training HIV and AIDS programme (Heaids) have started pilot rollouts at the universities of Free State and Venda. Twelve clinics will be opened at seven universities across the country by February next year, says Heaids director Rammek Makhwala.

The ultimate goal is that the roll-out of PrEP to all post-schooling clinics that have the capacity to offer the service,” he explains.

Makheya reaches for her phone. “I plan to use PrEP for the rest of my life,” she says. “You can never be too sure or too safe.”

But Khoza plans to stop after she’s finished studying and hopefully gets married.

“I’m honest, it’s hard to always take this pill,” says Makheya. “I hope there’s a PrEP injection in the near future.”

“Not their real names

**No questions asked.**

Load suppression prevent HIV transmission

Globally, this concept has become known as “Undetectable equals untransmittable” or U=U. Healthcare workers should now feel confident in backing the U=U campaign, promoting its message and discussing what it means with their patients.

For people living with HIV, U=U means they should start ART as soon as they are diagnosed and take the medication exactly as directed. If they do so, they can be confident that they won’t pass on the virus, even in the absence of condoms during sex.

For HIV-negative people, this finding demonstrates that they can safely have condomless sex with an HIV-positive person without fear of infection, provided their partner is on ART and has suppressed their viral load. But we’re not advocating for a decrease in condom use. In fact, the opposite is true.

U=U is one part of a set of ways that people can use to reduce their risk of HIV infection, including condoms, STI screening and pre-exposure prophylaxis (PrEP) – the HIV prevention pill. But U=U will not protect you against unwanted pregnancies or contracting other STIs that can put you at risk of HIV infection.

And condoms alone could prevent most HIV transmissions.

However, in the real world, it is obvious that some people can’t or won’t use condoms consistently and effectively. For people like this, U=U provides a powerful HIV prevention tool, even in the face of risky sex.

For example, couples in which one partner is living with HIV and who have the desire to have children may have been warned against unprotected sex.

These couples can now conceive naturally without the fear of spreading HIV to their loved one if viral loads are undetectable.

So the science has spoken and we have a powerful method of preventing HIV transmission in our communities. But we need to implement the science correctly and create a culture of responsible use.

The need to change the way we test for HIV. We need to get people to take frequent HIV testing so that, when we test positive, we can start treatment immediately and decrease the risk of passing HIV on to anyone else.

In the past, responsible sex meant sex with a condom. People who didn’t use condoms were branded as “irresponsible” and this fed into the stigma about HIV.

“Now, responsible sex won’t always mean sex with a condom.

After 40 years of limited HIV prevention choices and condom programming, this new dispensation will take some time to get used to, but it will be a powerful tool in the fight not only of reducing new infections but also the fear and stigma we still attach to the virus.