

Health

PrEPing young women for the

This tablet can help to protect South Africa's young women from contracting HIV

Pontsho Pilane

The sun begins to set as Alwande Khoza* returns home from her second clinic visit in just over a week. She lives in a student commune in a quiet Durban street. It's a two-minute walk from the Steve Biko campus of Durban University of Technology where she's a second-year business administration student.

It's the last week of October. Most of Khoza's peers are busy with their final exams as the academic year draws to an end. But Khoza, 20, has other pressing matters on her mind.

"Yoh! This pill is very big! How am I going to swallow it?" she asks herself. She's holding a tablet, about twice the size of a Panado pill, in her hand.

Khoza grabs a glass of water, places the blue pill on her tongue and tries as hard as she can to swallow it. With the help of a few big gulps, she manages to swill down the 2cm tablet.

Khoza isn't sick.

But every night at 9 o'clock, for the next few years at least, she will be taking this pill to help her stay HIV negative.

Khoza is one of 524 young women using an HIV prevention pill as part of a demonstration project being conducted by the Centre for the Aids Programme of Research in South Africa (Caprisa) in Durban.

The study began in March last year and will continue until the end of May 2018, Caprisa scientists Quarraisha Abdool Karim and Pamela Gumbi explain.

In 2015, South Africa became the first African country to approve the use of a pre-exposure prophylaxis (PrEP) for HIV. The only other



New outlook: Although Alwande Khoza's* long-distance boyfriend was initially angry when he found out that she was using the HIV prevention pill, he is now glad she is taking care of herself. Photo: Paul Botes

country that had done so at the time, was the United States.

PrEP allows people at a very high risk of contracting the virus to lower their chances of getting infected by taking HIV medicine, according to the US Centers for Disease Control.

The HIV prevention pill, called Truvada, contains two antiretroviral ingredients, emtricitabine and tenofovir. The same ingredients of some of the pills that HIV-infected people use to control the virus in their bodies.

When emtricitabine and tenofovir are used as a form of HIV prevention, Truvada is taken once a day at more or less the same time.

Khoza and other study participants were tested for HIV and other conditions, such as liver problems. That is why she went to the clinic twice in one week.

The Caprisa researchers want to find out how young women feel about PrEP and how committed they are to taking the medication correctly.

The study participants are mostly

from KwaZulu-Natal. "Most of the 705 volunteers are men and women between the ages of 18 and 30 years — the women make up 75% of the participants," says Abdool Karim. "We've also had a lot of interest from younger women between the ages of 15 and 17 years and we are awaiting regulatory approval for their inclusion."

Only people who are HIV negative can take Truvada. Tenofovir is excreted from the body through the kidneys.

A medical professional therefore has to test that someone's kidney function is normal and monitor them while they are taking PrEP, because it could sometimes affect their kidneys, according to 2014 study published in the journal *Aids*.

The more correctly someone takes PrEP, the better the pill works at preventing HIV infection. Studies have shown that PrEP can reduce the risk of contracting HIV by up to 96%.

Because men and women are bio-

logically different, PrEP doesn't work the same in their bodies. A 2015 study published in the *Journal of Infectious Diseases* showed that women who fail to take the pill every day have a higher chance of contracting HIV than men who have sex with men and skip doses.

The researchers found that 10 times more Truvada is retained in the rectum than in the vagina. As a result, women need a higher concentration of the pill in their bodies than men for the same level of protection.

Six to seven pills a week reduced women's chances of contracting HIV by 92%, whereas two to three pills a week decreased men's chances between 75% and 90% of getting infected with the virus.

The national health department provides Truvada for free to about 2000 sex workers at 14 pilot sites. In June the department started to provide the pill to men who have sex with men at three sites. According to Yogan Pillay, deputy director general

for HIV, the department is monitoring five demonstration sites offering PrEP to adolescent girls and young women.

Several studies have shown that sex workers and men who have sex with men, along with young women between the ages 15 and 24, are being infected with HIV at a faster rate than the general population.

South Africa had almost 500 000 new HIV infections in 2012, the latest Human Sciences Research Council national HIV household survey found. About a quarter of the new HIV infections occur among young women.

The survey also showed that condom use among women in this age group decreased from 67% to 50% between 2008 and 2012 at their last sexual encounter.

A 2016 Caprisa study, published in *The Lancet HIV* journal found that one of the biggest reasons young, disadvantaged black women contract HIV at a faster rate than their male peers is a result of intergenerational sex — where young women have sexual partners who are on average eight years older than them.

Khoza tightly wraps her arms around her upper body. American pop singer Pink is playing in the background as she hides away from the relentless Durban humidity inside a local restaurant. It's late November.

"At first, my boyfriend was angry at me when I told him that I want to use PrEP. He felt as if I don't trust him or I was hiding something from him," she says.

The couple have been in a long-distance relationship for three years. Khoza spends most of the year at university and her boyfriend works in Richards Bay, about 180km north of Durban.

"In October my boyfriend asked: 'We're both HIV negative, why do you need to take this pill?'" Khoza explains.

But after researching PrEP himself, Khoza's partner, 24, became supportive. He now often reminds her to take her medication in the evenings.

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). Partners living with HIV have relatively low levels of the virus in their blood and no HIV infections are recorded among their partners.

2008: The Swiss Federal Commission for HIV and Aids releases a statement 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 HPTN 052 study finds that early ART prevents 95% of HIV transmissions among sero-discordant couples as long as the HIV-positive person has an 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 couples despite 58 000 instances of sex without condoms. Activists begin to talk about the concept of "Undetectable = Untransmittable", or U=U, when it comes to HIV.

July 2017: A three-country study with 358 gay male sero-discordant couples confirms U=U. The study is important because it proves the concept within a very high-risk group. The risk of contracting HIV from anal sex is about 18 times greater than that associated with vaginal sex, 2010 research published in the *International Journal of Epidemiology* shows.

October 2017: The US Centers for Disease Control issues the following statement: "When [ART] results in viral suppression ... it prevents sexual HIV transmission." **November 2017:** More than 500 organisations and scientists from 67 countries, including South Africa, sign on to an international consensus statement supporting U = U. — *Compiled by Kevin Rebe*

How new science is

COMMENT
Kevin Rebe

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 treatment (ART) had 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, people who 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 the public 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 prevention pill



Tough pill to swallow: Wendy Makheya* says the HIV prevention pill is her best chance of avoiding contracting the virus. Photo: Paul Botes

Khoza's boyfriend doesn't want to take PrEP himself.

She's never asked him why not, but he has since decided to go for an HIV test for the first time since they started dating.

"He told me he went to the pharmacy for an HIV test because he wants to take care of himself like I am. Before, I didn't know his status. But I believed that he was HIV negative."

Khoza pauses to take a sip of her drink.

"I don't know where he sleeps and wakes up ... I need to protect myself."

The couple doesn't use condoms regularly during sex. "You know

how men can be about condoms. 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 locals trickle 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 Caprisa 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 Caprisa'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 in 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 Ramneek Ahluwalia.

"The ultimate goal is 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.

"To be 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

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redefining old notions of safe sex

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 responsibility about taking treatment as directed if we are going to reap its benefits.

The South African health department has already followed the science and guidelines now advise regular HIV testing and allow people to start ART immediately to help peo-

ple achieve U=U. The government is also expanding access to the HIV prevention pill.

But at a community level, we have to spread the message and explain the science behind it. If we don't, we'll sow doubt and suspicion about U=U's effectiveness, which could discourage people from starting and adhering to ART.

We need a culture of responsibility for taking treatment correctly as directed to ensure that the virus is completely suppressed in the body.

Second, we all need to change the way we test for HIV. We need to get used to 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.

Today, 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 holds the promise not only of reducing new infections but also the fear and stigma we still attach to the virus.

Dr Kevin Rebe is an infectious diseases physician who works for the Anova Health Institute's Health4men project in Cape Town