What Is 'Undetectable Equals Untransmittable'?

When a person living with HIV is taking HIV drugs and their viral load has reached undetectable levels (not enough HIV in their bloodstream for a test to measure), that person cannot transmit HIV to a sexual partner who is HIV-negative. HIV community members, advocates, and experts often talk about this groundbreaking news using the simple phrase "Undetectable Equals Untransmittable," or "U=U."
HIV Treatment as Prevention

HIV treatment as prevention [5], or TasP, is the foundation of U=U. TasP refers to ways that we can use HIV treatment regimens to lower the risk of transmitting HIV. For people living with HIV, taking HIV drugs can reduce the amount of virus in their blood (viral load [6]), thus making their blood, vaginal fluids, and semen (cum) much less likely to transmit HIV to others. Taking HIV medications also helps people living with HIV feel better because it keeps their viral load low. A low viral load means a healthier immune system, which in turn prevents the person from getting AIDS.

The first great discovery in TasP came in the 1990s, when research showed that pregnant women living with HIV [7] who took the early HIV drug Retrovir (also called zidovudine, ZDV, or AZT) greatly reduced the risk of transmitting HIV to their babies. According to the U.S. Centers for Disease Control and Prevention (CDC), nowadays, if a mother takes HIV drugs while pregnant and has an undetectable viral load, the chances of transmission to her baby can be less than one in 100.

TasP also increases the possibility that mixed-status couples (couples in which one partner is living with HIV and the other is HIV-negative, also known as serodiscordant or serodifferent couples) who want to have children can safely conceive their babies [8] "the old-fashioned way": through sex without condoms [9] or other barriers. The HIV-negative partner also has the option of taking an HIV medication to prevent him or her from acquiring HIV. This prevention method is called pre-exposure prophylaxis, or PrEP [10].

In 2011, a study called HPTN 052 showed that TasP was effective, but this information was not well known beyond well-informed HIV advocates and expert care providers. Accounts of this news in mainstream media (newspapers, TV broadcasts, etc.) were often confusing, misleading, and still loaded with stigma [11] toward people living with HIV. Many people living with HIV were not aware of this development.

In early 2016, a health equity program called Prevention Access Campaign [12] (PAC) launched the "U=U" campaign, a project led by people living with HIV. The U=U campaign unites a global community of HIV advocates, activists, researchers, and community partners to share the fact that people living with HIV who are on effective HIV drugs do not transmit HIV when they have sex. In 2017, the US Centers for Disease Control and Prevention officially supported the scientific facts that led to the U=U campaign.

"We are getting married, we are enjoying intimate relationships ... you are not a danger to anyone. ... That has become my new normal."

- Asha Molock (from the Prevention Access Campaign video above, which features several members of The Well Project’s online community)

How HIV Treatment Makes U=U

With any virus, the likelihood of transmitting it depends on the amount of virus in your body. HIV drugs prevent the HIV virus from reproducing (making copies of itself). When a combination of HIV drugs (your drug regimen) is working, the viral load usually goes down quickly after starting the drugs.

If HIV is not able to reproduce, it will not infect new cells in your body and your viral load remains low. With a low viral load, you are more likely to have a healthy immune system [13]. The lower your viral load, the less likely you are to transmit HIV to others.
HIV drugs cannot cure HIV. Even when your viral load is undetectable, there are still 'resting' or latent HIV cells in areas of your body such as your gastrointestinal tract (GI tract, or gut), brain, or bone marrow; these are called 'reservoirs.' But having an undetectable viral load means there is barely a trace of virus to be found in body fluids that transmit HIV: your blood, vaginal fluids, or semen. (There are some other considerations when it comes to breast milk, which we discuss below.)

The Research Behind U=U

Even before the groundbreaking results of the HPTN 052 study were released, a group of HIV care providers in Switzerland produced a paper aimed at other doctors in their country.

The "Swiss Statement"

In the 2008 "Swiss Consensus Statement," these experts agreed, based on new data and what they were documenting among their patients, that an HIV-positive person who had had an undetectable viral load for at least six months and continue to take HIV drugs had a negligible risk of transmitting HIV (risk is so small or unimportant that it is not worth considering).

HPTN 052

HPTN 052 was a large study involving more than 1,000 mostly heterosexual, mixed-status couples. Very few cases of HIV transmission occurred during the study. These happened when the partner living with HIV had a detectable viral load, because their HIV drugs had either not yet started working properly or had stopped working.

PARTNER

The PARTNER study looked at the risk of HIV transmission in heterosexual and gay mixed-status couples in which the partner living with HIV took HIV treatment and had an undetectable viral load. The 2016 results showed that after 58,000 instances of sex among 1,166 couples who were not using condoms, there were zero cases of HIV acquisition within the couples: none from anal or vaginal sex; or to women; or to people living with other sexually transmitted infections (STIs).

Even after the results of these studies were published in mid-2016, confusion and misinformation still dominated conversations about these new developments, and word did not reach many people living with HIV.

Community and Medical Experts Agree

In 2016, the U=U campaign released the first-ever global consensus statement confirming the science behind U=U. Since its release, 937 organizations from 99 countries (as of November 5, 2019) — including advocacy groups, service organizations, and departments of health— as well as numerous individual HIV experts worldwide have endorsed the U=U message; at the time of this update, the statement is available in full or part in at least 13 languages.

The Well Project proudly endorsed the consensus statement in April 2017, and we encourage our community partners to consider doing the same. Other groups that have endorsed the statement include:

- Positive Women's Network - USA — the largest national advocacy network by and for women living with HIV
- HIVE — a hub of positive sexual and reproductive health (USA)
- TransLatin@ Coalition — advocating for the needs of Latinx people of transgender experience (USA)
Partners pledge to share the information in ways that work for communities they represent or work with. Sharing the message of U=U is part of a strategy to break down HIV stigma, provide hope, improve the lives of people living with HIV, and move closer to ending HIV as a worldwide epidemic.

Why Didn't I Know About This?

There are many reasons why some providers of HIV information (AIDS service organizations, health care providers, public health departments, HIV media outlets, etc.) have not communicated U=U to people living with HIV and the general public.

First, shifts in attitudes, beliefs, and behaviors take time. HIV advocates, activists, and providers have spent several decades desperately trying to stop the spread of HIV. Condom use was held up as the only sure way to do that. Condom use was often encouraged through campaigns and activities based on fear of contact with the virus. For many, the fact that an undetectable viral load also acts as a barrier to HIV transmission has been a difficult message to accept.

Also, while U=U means that people living with HIV do not pose a risk to their intimate partners in terms of HIV transmission, there is the matter of other STIs, as well as unwanted pregnancies. Condoms prevent these other conditions, while HIV treatment as prevention does not.

Further, it’s important to note that people living with or most vulnerable to HIV are often also people whose sexuality already carries a great deal of stigma and judgment: transgender people, women of color, older women, young women, people living in poverty. Their freedom to enjoy their sexual lives is often limited, not celebrated; these intersectional stigmas (based on different parts of a person’s identity that impact their life at the same time) also affect whether or not the message of U=U is delivered. Recognizing that TasP can make them unlikely to transmit the virus to their partners may be a powerful tool to help overcome stigma and judgment.

One research study led by women living with HIV found that among the study group, almost 40% of the women living with HIV — most of whom were in HIV care — had not been told about U=U by their providers. Further, participants in a large HIV treatment study in the U.S. were found to vastly overestimate the likelihood that they would transmit HIV to a partner.

The U=U campaign founder himself said it best, in a blog entry celebrating the work of women living with HIV in U=U advocacy:

"Our work to reduce core HIV stigma by ensuring access to accurate and meaningful information about risk of transmission is essential, but there’s so much more to be done. Rewiring the thirty-five years of fear of HIV and people with HIV is nothing compared to dismantling centuries of patriarchy and oppression of women, particularly those who face intersectional stigma and discrimination."

- Bruce Richman, from "Women Living with HIV Are Leading the Way"

Important U=U Issues for Women

Relationship Power Dynamics

Many studies show that the uneven power dynamics between women and men in some intimate relationships are part of the reason why the HIV epidemic continues to flourish among women.
globally.

U=U has huge implications for HIV stigma; however, it does not erase generations of unequal treatment and violence against women. Studies show that women often cannot demand that their partners use condoms [9] because of uneven power dynamics and even fear of violence [20]. Women may also not be able to ask about their partners' treatment status or viral load for similar reasons — or partners may not honor a woman's request to use condoms or other barriers, using what they claim to be their undetectable viral load as a reason.

More research and insight are needed into the many ways that partner power dynamics may affect U=U for women. In the meantime, access to prevention methods that women themselves control, such as PrEP and, eventually, microbicides [21], should stay high on the research priority list.

**Breastfeeding**

Breast milk is one of the body fluids that can transmit HIV. The risk does decrease if you are on HIV drugs and your viral load is undetectable, though there may still be some risk. More research is needed into the ways in which HIV treatment affects breastfeeding.

If you live in a place without refrigeration or where safe water is not available, the risk to your baby of life-threatening conditions from formula feeding with unsafe water — as well as the benefits of breastfeeding to the baby's immune system — may outweigh the risk of HIV transmission. In such resource-limited areas of the world, women living with HIV are encouraged to breastfeed for these reasons, and the research on breastfeeding and HIV from these areas shows that risk of HIV transmission through breastfeeding can be as low as less than 1 percent.

In the U.S. and other high-resource countries where water is safe and formula is widely available, breastfeeding is not recommended for women living with HIV. Experts on HIV and women's health are divided as to whether or not this should continue to be the case in the era of U=U.

Some providers worry that even a very low risk may be too high to take when it affects a child's health (as opposed to adults making a choice to take a risk that affects only them). Others suggest that women be given all available information to make their own informed decision and supported to continue taking their HIV treatment, whatever choice they make. For more information on this topic, please read our fact sheet on infant feeding options for parents living with HIV [22].

**HIV Criminalization**

Many countries and U.S. states have laws that make it a crime for a person living with HIV to do things (for instance, sexual activity to which both partners agree) that would not be crimes if they were not living with HIV. Not only do these laws build HIV stigma and discrimination into the legal system, they also do not take into account the realities of living with HIV in the era of U=U. The fact of U=U has not yet changed the status of these laws. For more information, please see our fact sheet on how HIV criminalization affects women [23].

In fighting these stigmatizing laws, it is important to share the information that both the risk and the harm of HIV transmission have dropped dramatically since the early days of the epidemic. However, it is also important not to stigmatize or criminalize those who, for whatever reason, may have detectable viral loads. Women, especially, may have a harder time getting their viral loads to undetectable, for reasons including:

- Being more likely to be diagnosed later in life than men
- Prioritizing the health of others over their own
- Higher rates of violence, poverty, and the instability that comes with these social determinants of health [24], which can make it hard to be consistent with medication

Criminalizing people based on HIV status is harmful to public health and is never appropriate, no
The Bottom Line: Bringing Hope to People Living with HIV

Increasing awareness that having an undetectable viral load means that people living with HIV will not transmit the virus can have a dramatic impact on public and personal views of HIV. We have the tools to end the epidemic, keep people living with HIV healthy and unable to transmit the virus (U=U), and keep HIV-negative people negative through PrEP and post-exposure prophylaxis (PEP).

The epidemic continues because people are living with HIV without knowing it, because they have never been tested [25]. HIV stigma is the biggest barrier to ending the HIV epidemic, so it is important to break down that stigma wherever possible by providing access to information, community support, and advocacy — all of which build hope.

U=U has the potential to address all kinds of HIV stigma — including institutional stigma occurring in healthcare settings, workplaces, and broadly across society; interpersonal (between people) stigma that can be so damaging among family and friends; and internalized stigma (negative beliefs about HIV held by people living with HIV themselves), which many people don't even realize they have.

While researchers must continue to examine the promise and the impact of treatment as prevention, the science that is currently available strongly supports U=U. That alone is a reason to make sure that all people living with HIV, or vulnerable to acquiring HIV, have access to this information so that they can make the most informed decisions possible about their own sexual health and lives.

Tags:

- #UequalsU [26]
- #ScienceNotStigma [27]
- end HIV stigma [28]
- Hope HIV [29]
- U=U [30]
- Undetectable equals untransmittable [31]
- Undetectable = untransmittable [32]
- viral load [33]
- Undetectable viral load [34]
- Sex and HIV [35]
- HIV treatment [36]
- Treatment as prevention [37]
- PMTCT [38]
- TasP [39]
- Preventing HIV transmission [40]
- Vertical transmission [41]
- HIV women [42]
- safe sex [43]
- safe sex and HIV [44]
- safe sex women HIV [45]
- women HIV [46]
- HIV and women [47]
- Women and HIV [48]
- safer sex HIV [49]
- sex without condoms [50]
- unprotected sex [51]
- serodiscordant pregnant [52]
Additional Resources

Select the links below for additional materials.

- U=U Consensus Statement (Prevention Access Campaign) [53]
- #PWNCares: Undetectable = Untransmittable (includes video) (Positive Women's Network - USA) [54]
- Why, for HIV, Undetectable = Untransmittable (TheBody) [55]
- Sex 58,000 Times With Undetectable Partners = Zero HIV Transmission: Learn More (TheBody) [56]
- HIV Undetectable = Untransmittable: Interview With Bruce Richman (Program for Wellness Restoration, via TheBody) [57]
- Understanding Undetectable Equals Untransmittable (POZ) [58]
- No Shame With HIV (video; in French and English, with subtitles) (All for a Healthy Africa) [59]
- Five Reasons 'HIV Undetectable' Must Equal 'Untransmittable' (My Fabulous Disease) [60]
- People With HIV Considerably Overestimate Their Chance of Infecting Someone (aidsmap) [61]
- Does U=U for Breastfeeding Mothers and Infants? (The Lancet HIV) [62]
- HIV Therapy for Breastfeeding Mothers Can Virtually Eliminate Transmission to Babies (US National Institutes of Health) [63]
- Three Reasons Why CATIE Supports U=U for Sexual Transmission (CATIE) [64]
- Securing the Future of Women-Centered Care (Positive Women's Network – USA) [65]
- If We Act to Remove Structural, Behavioral and Social Barriers, We Can End the HIV Epidemic With the Medicines We Already Have (TheBodyPRO) [66]
- U=U and Canada's Overly Broad Criminalization of HIV Nondisclosure (CATIE, via TheBody) [67]

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**Links**

Undetectable Equals Untransmittable: Building Hope and Ending HIV Stigma

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[12] https://www.preventionaccess.org/
[34] http://www.thewellproject.org/tags/undetectable-viral-load
[38] http://www.thewellproject.org/tags/pmtct
[40] http://www.thewellproject.org/tags/preventing-hiv-transmission
[53] https://www.preventionaccess.org/consensus
[54] https://www.pwn-usa.org/pwncares/pwncares-2-undetectable-untransmittable/
[58] https://www.poz.com/article/understanding-undetectable-untransmittable
[59] https://www.youtube.com/watch?v=yijXNeO9rss
[63] https://www.nih.gov/news-events/news-releases/hiv-therapy-breastfeeding-mothers-can-