

ART | “Undetectable” Viral Load & Risk of HIV Transmission

Public Health
Seattle & King County



There is growing support for using antiretroviral therapy (ART) as a tool to prevent HIV. The idea is that if you have HIV and achieve a viral load that is not detectable, you are less infectious. You will be less likely to pass HIV to sex partners. However, there is still a lot we don't know about viral load and transmission risk.

Public Health – Seattle & King County created this fact sheet to summarize:

- what we know about HIV transmission when viral load is not detectable.
- what you can do to protect yourself and others.

What do we know about HIV transmission when viral load is undetectable?

In January 2008, the Swiss National AIDS Commission released a document stating that the risk of sexual transmission of HIV is “negligible” *if* the positive partner is strictly taking HIV meds as prescribed, has undetectable viral load **and** has no sexually transmitted diseases (STDs).

The “Swiss Statement” was based on a review of research that looked mostly at heterosexual, monogamous (only one partner), discordant couples (HIV-positive individuals whose sex partners are HIV-negative). Those studies showed that in untreated heterosexuals, the lower a person's viral load, the lower the risk of them transmitting HIV to their sex partners. However, we don't yet know how much lower the risk really is. **“Lower” risk does NOT mean “no risk.”** There are documented cases of transmission when virus was not detectable in blood. Also, we don't yet have strong information on transmission with suppressed viral load among men who have sex with men (MSM).

How is an undetectable viral load helpful?

When your viral load is undetectable, you have fewer copies of HIV attacking your immune system. With less HIV, you can live healthier and longer. Current evidence suggests that lower viral load also decreases, **but does not eliminate**, the risk of passing HIV to others.

At a community level, reduced viral load has strong potential to benefit everybody. This is because when more people who are living with HIV have viral loads that are not detectable, there will be fewer opportunities for new HIV infections.

What can you do to protect yourself and others?

Factors to Consider

Stage of Infection: Viral load is highest when a person first gets HIV. This is usually before a person tests positive or begins HIV treatment. Viral load is also higher in advanced stages of AIDS. During these times, it is easier to pass HIV through sexual contact.

Sexually Transmitted Diseases: STDs can make it easier to pass or get HIV. When another STD is present, even if it doesn't have obvious symptoms, HIV viral load can increase. The higher the amount of HIV in genital fluids, the more likely it is you can pass HIV to your sex partner.

What is viral load?

Viral load is a measure of the amount of HIV in a body fluid. Usually it's measured as the number of copies of HIV in a milliliter of blood (1 ml = about 20 drops). Viral load can also be measured in semen, vaginal fluid, breast milk, etc. However, measuring the amount of virus in these fluids is difficult and is usually only done in research.

What does it mean to be undetectable?

Antiretroviral therapy (ART) can lower HIV viral load, ideally to the point where it cannot be detected (below 400-75 copies/ml in most tests). **“Undetectable” does not mean a person has been cured of HIV.** It means the amount of virus in a person's blood is so low that the usual tests cannot measure it.

What is a “viral blip”?

People who have HIV and a viral load that is generally undetectable may have intermittent and brief increases into the detectable range. Such increases are known as “viral blips.” They can occur even when HIV is being successfully treated with ART. Blips are usually moderate. Their impact on transmission risk is not known.

Can you transmit HIV if your viral load is not detectable?

Yes.

Although recent studies suggest that people with undetectable viral loads are less likely to transmit HIV to their partners, this does not guarantee that transmission cannot occur. In fact, there are documented cases of people transmitting HIV when their blood viral load level was undetectable.

It is also easier to get HIV if you already have another STD. Some STDs can cause sores or ulcers in the genital area that create an entry point for HIV. Even without a sore, STDs can cause inflammation which can make it easier for HIV to get into your body.

Different Body Fluids: Different body fluids contain different amounts of virus. It’s possible to have an undetectable viral load in blood and higher viral load in semen and other genital fluids. This is because some HIV medications are more effective at fighting HIV in blood than in genital fluids. HIV can also be higher in genital fluids because of the presence of other STDs. Measuring the amount of virus in fluids other than blood is difficult and is done mainly in the context of research studies.

ART as a prevention strategy: When ART is successful it reduces viral load. This helps reduce the likelihood of passing HIV to a sex partner. If you are HIV-positive, Public Health encourages you to discuss when to start ART with your medical provider. Starting early may improve your health and have a prevention benefit for your partner(s).

Adherence to Treatment: When treatment is not followed exactly as prescribed, it can interfere with reducing viral load. It can also increase risk for treatment resistance.

Treatment Resistance: If you develop resistance to certain meds, your viral load can increase. You may not know it until your next medical visit. If you learn you are developing resistance, revisit your decisions about sexual safety and protecting sex partners.

If you would like to talk with someone about how to factor information about undetectable viral load and ART into your sexual safety decisions, the following agencies can help:

HIV/STD Program 206-263-2000
Lifelong AIDS Alliance 206-957-1602

To read more about viral load and HIV transmission, please see:

- **Canadian AIDS Treatment Information Exchange:** HIV Viral Load, HIV Treatment and Sexual HIV Transmission.
<http://www.catie.ca/sites/default/files/viralload-2-en.pdf>
- **BETA News Brief:** Viral Load and HIV Transmission Risk
http://www.sfaf.org/hiv-info/hot-topics/beta/beta_2009_wintspr_newsbriefs.pdf
- **Understanding HIV Viral Load:** Implications for Counseling
<http://journal.cpha.ca/index.php/cjph/article/download/1638/1822>
- **CROI Discussion:** Potentially Infectious Levels of Intermittent HIV Shedding Can Occur in Seminal Fluid Despite Years of Suppressive HAART, Research Suggests A Discussion With Prameet Sheth and Anne-Genevieve Marcelin, Pharm.D., Ph.D.
<http://www.thebody.com/content/confs/croi2009/art50474.html>
- **The Body:** Safer Sex for the HIV Positive
<http://www.thebody.com/index/treat/prevpos.html#advice>
- **CDC Factsheet:** Effect of Antiretroviral Therapy on Risk of Sexual Transmission of HIV Infection and Superinfection
<http://www.cdc.gov/hiv/topics/treatment/resources/factsheets/art.htm>

Available in alternative formats

Key Messages

Viral Load and HIV Transmission:

An undetectable viral load reduces but does not remove the risk of HIV transmission.

Know your HIV Status.

Knowing your HIV status can help you prevent passing HIV to your sex partner(s).

- If you learn you have HIV, you can consider treatment options as early as possible.
- If you don’t have HIV and engage in risky behaviors, get tested for HIV every 3 months.

If you have HIV, see a medical provider every 3-4 months.

This will help you stay as healthy as possible. Your provider will check your viral load to make sure your treatment is working. And if you’re not yet on ART, it’s important to monitor your viral load and CD4 count so you and your doctor can decide when to start. At your regular check-up you can also get tested and treated for other STDs if necessary.

Condoms.

Proper use of condoms will always lower the risk of passing HIV and other STDs. Use them, especially when in doubt! Undetectable viral load won’t protect you or your partner(s) from other STDs.

Discuss strategies with your sex partner(s).

Stay informed about how HIV and other STDs are spread. Talk honestly about HIV status, HIV treatment and other health issues.

HIV/STD Program

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