

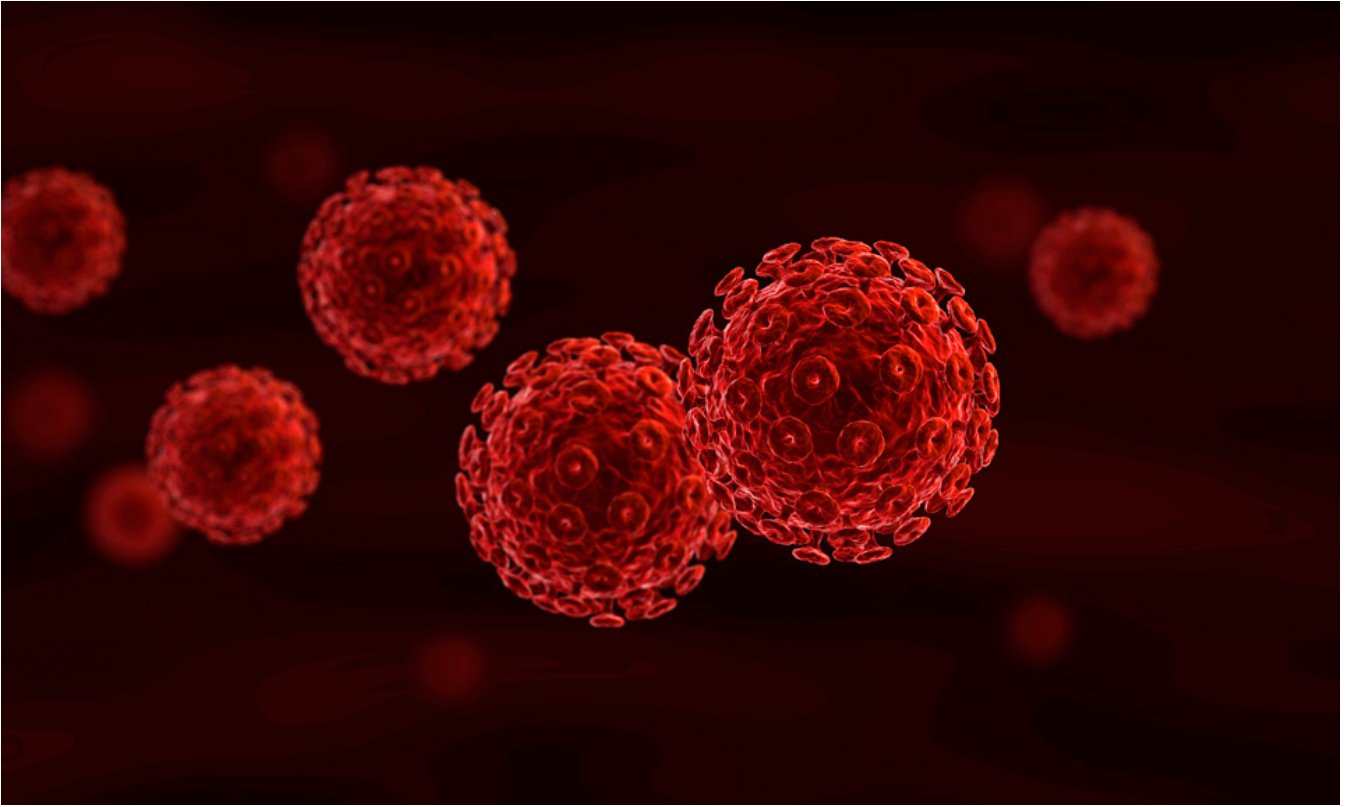


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## Women and Viral Load

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## What Is Viral Load?

HIV attacks immune system cells called [CD4](#) cells (also known as T cells). HIV enters these cells and turns them into virus factories that produce thousands of copies of HIV. As the virus grows, this increase in the number of virus copies damages or kills CD4 cells, weakening your [immune system](#).

**However, undetectable does **not** mean you have been cured of HIV.**

Viral load is the amount of HIV (number of viruses or copies) in your bloodstream. The higher the amount of HIV, the more your immune system becomes damaged.

Viral load can be measured by several different lab tests: a polymerase chain reaction (PCR) test, a branched DNA (bDNA) test, or a nucleic acid sequence-based assay (NASBA). All these tests are accurate, but each has a different way of measuring the amount of virus. It is best to stick with the same kind of test and not switch among them, or it will be difficult to compare results over time.

Viral load results are reported as the number of copies of HIV in one milliliter (ml) of blood. The lower the number, the less virus there is in your blood. Numbers can range from several million copies to as few as 20 copies. If you have fewer than 50 copies, your healthcare provider may tell you that your results are "undetectable."

Being undetectable is a great result because it means your virus is under control. However, undetectable does **not** mean you have been cured of HIV. It just means there is not enough HIV in your bloodstream for the test to measure. It is also important to know that labs that test viral load have different cut-offs for detecting HIV. For example: you could have 35 copies of HIV in your blood, and in lab #1, which cannot detect any HIV below 50 copies, your viral load would be considered "undetectable." However, in lab #2, which cannot detect any HIV below 20 copies, your viral load would be considered detectable.

Practically speaking, if you stay at or below 50 copies, the virus is considered well-controlled, and your HIV treatment regimen is working well.

## Undetectable Equals Untransmittable (U=U)

In addition to being good for your health, having an undetectable viral load (which, in the case of U=U, means below 200 copies) while on HIV treatment reduces your chance of passing HIV to sexual partners to zero. Recent studies have looked at couples in which one partner is HIV-negative and the other partner is living with HIV and has an undetectable viral load while on HIV treatment. When researchers followed these couples over time, they found that none of the HIV-negative participants acquired HIV through sexual relations with their partners.

It is important to note that these studies did not look at the risk of a person living with HIV who has an undetectable viral load passing HIV to another person through the use of shared [injection drug equipment](#). Further, even though a person who takes HIV drugs and has an undetectable viral load while pregnant has a less than one in 100 chance of passing HIV to their baby during birth, more research is needed to understand the risk of HIV transmission through [breast milk](#) (we know the risk is very low when the lactating person is taking HIV drugs). For more information, see our fact sheet, [Undetectable Equals Untransmittable: Building Hope and Ending HIV Stigma](#).

*Click above to view or download this fact sheet as a [PDF slide presentation](#)*

## How Are Viral Load Results Used?

Viral load tests are an important tool to:

- **Check HIV progression**

While CD4 cell counts measure how healthy your immune system is today, viral load tests can help figure out whether you are at risk for more immune damage in the near future. A viral load test tells you how active HIV is in your body. When compared over time, viral load results show if the amount of HIV in your bloodstream is higher or lower than it was before. The higher your viral load, the more actively HIV is reproducing and the more likely you are to lose CD4 cells in the future.

- **Measure how well HIV drugs are working**

HIV drugs prevent the virus from making copies of itself (reproducing). When a combination of HIV drugs (your drug regimen) is working, the viral load usually goes down within weeks of starting the drugs. If your viral load goes up while taking HIV drugs, your drugs may not be working as well as they should. For instance, your virus may be [resistant](#) to your HIV drug regimen. It is important to talk to your healthcare provider about the best next step, and to tell them if you are having any problems taking your HIV drugs on schedule. If you do not take your drugs correctly, it can cause problems that may increase your viral load. Your healthcare provider may ask to re-test your viral load at that time or after another few weeks. Your provider may also suggest you change some or all of your drugs.

One goal of HIV treatment is to keep viral load levels as low as possible for as long as possible. This gives you the best chance of staying healthy. With effective HIV treatment regimens, viral load can be reduced to undetectable in many people. This is a great result. It means your HIV drugs are working and you are doing a great job taking them. However, HIV is still in your body. If you stop taking your HIV drugs, the virus usually starts reproducing and your viral load will increase.

- **Enhance motivation and promote treatment adherence**

Getting your viral load tested and finding out you have an undetectable viral load can be both reassuring and motivating. It shows that the efforts you are making to control the virus by taking your HIV drugs as prescribed ([adherence](#)) are working well. This can give you the proof and energy to continue your HIV treatment so you can maximize your overall health.

## When Should You Be Tested?

The US treatment guidelines also provide recommendations on when to have viral load tests:

- **If you are not on HIV treatment, have a viral load test**
  - When you start receiving HIV care
- **When you start treatment, have a viral load test**
  - When starting and two to eight weeks after treatment was started
  - Repeat test every one to two months until viral load becomes undetectable
- **Once you are on a stable treatment regimen and undetectable, have a viral load test**
  - Every three to six months

- **When you change HIV drugs, have a viral load test**
  - Two to eight weeks after treatment was changed
  - Repeat test every one to two months until viral load becomes undetectable

The World Health Organization (WHO)'s treatment guidelines recommend getting a viral load test six months after you begin treatment, again at 12 months after beginning treatment, and then once every year thereafter.

If your drug regimen is working, your viral load should become undetectable within six months of starting treatment. If this does not happen, if your viral load stays detectable on stable therapy, or if your viral load keeps increasing, this can mean your drug regimen is not controlling HIV as well as it should. It is important that you and your healthcare provider discuss all possible reasons (e.g., problems with drug absorption, [adherence](#), drug [resistance](#), [drug interaction with other drugs](#)) and take steps to correct the problem. These steps may include additional testing and considering changing HIV drugs.

## Women and Viral Load

### At similar CD4 cell counts, women tend to have lower viral load levels than men.

Our understanding of viral load has grown since 1996, when the first viral load test was approved and began to be widely used. Most early [clinical trials](#) that studied the role of viral load looked primarily at groups of men. Not enough women were enrolled in these trials for anyone to know whether there were sex-based differences in viral load.

Since 1996, a number of studies have compared viral load levels between groups of men and women. Some of these studies have found sex differences in viral load. At similar [CD4 cell counts](#), women tend to have lower viral load levels than men. The differences seem greatest during the early course of HIV (also called acute HIV).

However, this difference in viral load between men and women early on does not result in an overall difference between women and men in how quickly HIV advances, or health declines. Studies have also shown that when taking HIV drugs, men and women are equally likely to achieve viral suppression (defined as a viral load below 200 copies). Most differences in the effectiveness of treatment seem related to which HIV drugs are taken, and not to being female or male. The strongest single factor that predicts the health of all people living with HIV is taking HIV drugs. Studies have not found that [pregnancy](#) causes HIV to become more advanced.

One study found that HIV lives and multiplies more often in the bodily fluids in the female genital tract (a woman's sex organs) than in semen (cum), even when the person is on effective HIV drugs that show an undetectable viral load in the blood. Later studies have shown that the female genital tract serves as a "reservoir" or place where HIV continues to live and reproduce despite effective HIV treatment. Taking your HIV drugs to maintain an undetectable viral load is still the best way to stay healthy and prevent transmitting HIV to others. You can find out more about how taking HIV drugs can prevent HIV transmission by reading our fact sheet on [Treatment as Prevention](#).

If you are thinking about starting or switching treatment, it is important to take into account your viral load, CD4 cell count, other lab results, and how you are feeling. Talk to your healthcare provider about the best treatment plan for you.

## Areas of Future Viral Load Research

Researchers have noticed that viral load and the level of certain HIV drugs go up and down during the course of a single [menstrual cycle](#). This could affect drug dosing and the timing of viral load tests in women.

Understanding more about sex differences in viral load may lead to better care for women living with HIV. In the meantime, following the treatment guidelines for viral load testing is an important way for you and your healthcare provider to monitor your HIV, see how you are responding to HIV treatment, and work together to keep you healthy.

## Additional Resources

Select the links below for additional material related to viral load.

- [HIV Treatment and an Undetectable Viral Load to Prevent HIV Transmission \(CATI...\)](#)
- [Understanding Your Lab Work \(Blood Tests\) \(POZ\)](#)
- [Viral Load \(aidsmap\)](#)
- [The Need for Routine Viral Load Testing: Questions and Answers \(UNAIDS, PDF\)](#)
- [CD4 vs. Viral Load: What's in a Number? \(healthline\)](#)
- [HIV/AIDS Glossary: Viral Load \(HIV.gov\)](#)
- [Fact Sheet: Undetectable Viral Load \(San Francisco AIDS Foundation\)](#)
- [U=U Resource Center \(Prevention Access Campaign\)](#)
- [Viral Suppression and Barriers to Care \(US Centers for Disease Control and Prev...\)](#)
- [A Majority of Transgender Women With HIV Are Undetectable \(POZ\)](#)
- [Viral Load and Being Undetectable \(Terrence Higgins Trust, UK\)](#)
- [HIV Viral Load \(MedlinePlus\)](#)
- [Viral Suppression and an Undetectable Viral Load \(HIV.gov\)](#)



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