Together, we can change the course of the HIV epidemic...one woman at a time.
What Is Viral Load?

Viral load is the amount of HIV (number of viruses or copies) in your bloodstream

• HIV enters immune system cells called **CD4 cells** (also called T cells) and turns them into “virus factories” that produce thousands of copies of HIV

• As the virus grows, it damages or kills CD4 cells, weakening your immune system

• The higher the amount of HIV, the more your immune system becomes damaged
How Is Viral Load Measured?

- Viral load can be measured by different lab tests:
  - Polymerase chain reaction (PCR) test
  - Branched DNA (bDNA) test
  - Nucleic acid sequence-based assay (NASBA)

- Each lab test measures the amount of virus differently
  - It is best to stick with the same kind of test 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
What Does “Undetectable” Mean?

• If you have fewer than 50 copies of HIV per ml in your blood, your viral load is considered "undetectable"
  – Being undetectable is a great result; it means your virus is under control
  – Undetectable means that there is not enough HIV in your bloodstream to be measured by the test
  – It does not mean that you have been cured of HIV; HIV is still in your body
  – If you stop taking your HIV drugs, the virus usually starts reproducing and your viral load will increase

• With effective HIV treatment regimens, viral load can be reduced to undetectable in many people

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What Does “Undetectable” Mean?

• Labs that test viral load may have different cut-offs below which they cannot detect HIV

• For example, you could have 35 copies of HIV in your blood, and:
  – At Lab #1, which cannot detect any HIV below 50 copies, your viral load would be considered undetectable
  – At 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)

- Having an undetectable viral load reduces your chance of passing HIV to sexual partners to effectively zero
- In recent large studies looking at couples in which one partner is HIV-negative and the other is living with HIV and has an undetectable viral load while on HIV treatment over time, **no HIV-negative partner acquired HIV through sexual relations with their partner**
  - Studies did not look at undetectable viral load and risk of passing HIV through use of shared injection drug equipment
  - More research needed on HIV transmission through breast milk – though risk is very low when parent taking HIV drugs

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How Are Viral Load Results Used?

**To Check HIV Progression:**

- A viral load test tells you how active HIV is in your body.
- When compared over time, viral load results show whether 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.

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How Are Viral Load Results Used?

To Measure How Well HIV Drugs Are Working:

• Your viral load will usually go down within a week of starting your drug regimen

• If your viral load goes up while taking HIV drugs, your drugs may not be working as well as they should
  – Possible reasons may include problems with drug absorption, adherence, drug resistance, or interactions with other drugs
  – Talk to your healthcare provider about next steps

• Viral load can be reduced to undetectable in many people

• If you stop taking your HIV drugs, viral load will usually go up again

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How Are Viral Load Results Used?

*To Enhance Motivation and Promote Treatment Adherence:*

• Finding out that you have an undetectable viral load can be both reassuring and motivating

• Shows that your efforts to control the virus by taking your HIV drugs as prescribed are working well
When Should You Be Tested?

In the US:

• **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 2-8 weeks after starting treatment; repeat test every 1-2 months until viral load becomes undetectable

• **Once you are on a stable treatment regimen and your viral load is undetectable**, have a viral load test
  – Every 3-6 months

• **When you change HIV drugs**, have a viral load test
  – 2-8 weeks after treatment change; repeat test every 1-2 months until viral load becomes undetectable
Women and Viral Load

- Some studies comparing viral load levels between men and women have found sex differences in viral load:
  - At similar CD4 cell counts, women tend to have lower viral load levels than men.
  - Differences seem greatest during the early course of HIV acquisition.
  - These early differences do not result in any overall sex-based difference in the speed at which HIV advances.
Women and Viral Load

• Studies have shown that when taking HIV drugs, men and women are equally likely to achieve **viral suppression** (viral load below 200 copies)
  – Studies **have not** found that pregnancy causes HIV to become more advanced

• The strongest single factor that predicts the health of people living with HIV – women or men – is taking HIV drugs
Women and Viral Load

• One study: HIV lives and multiplies more often in female genital fluids than in semen (cum), even at an undetectable viral load

• Later studies: female genital tract serves as a reservoir (place where HIV continues to live and reproduce despite effective HIV therapy)

• Viral load and the level of certain HIV drugs go up and down during the course of a single menstrual cycle
  – Could affect drug dosing and the timing of viral load tests in women
Future Research

- Understanding more about sex differences in viral load may lead to better care for women living with HIV.
- Following guidelines for viral load testing is important for monitoring your HIV.
- Viral load testing helps your health care provider work with you to keep you healthy.

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Learn More!

• To learn more about this topic, please read the full fact sheet on this topic:
  – Fact sheet: Women and Viral Load

• For more fact sheets and to connect to our community of women living with HIV, visit:
  – www.thewellproject.org
  – www.facebook.com/thewellproject
  – www.twitter.com/thewellproject