Viral Load

WHAT IS VIRAL LOAD?

The viral load test measures the amount of HIV in your blood. It is the preferred way to know if antiretroviral therapy (ART) is working. The test measures the number of HIV copies in one milliliter of blood.

Viral load test results help your healthcare provider follow what's happening with your infection, know if your HIV treatment is working, and decide on treatment choices.

Keeping your viral load low will keep your immune system healthy, make complications and opportunistic infections (OIs) less likely, and help you live longer. It is possible if you adhere to your treatment to obtain a normal or near-normal life expectancy.

HOW IS VIRAL LOAD TESTED?

HIV viral load tests look for RNA, the part of HIV that has the recipe for reproducing itself. The tests add an enzyme, a kind of protein, to make more copies of the RNA. This makes it easier to measure how much HIV is in your blood sample.

These real-time polymerase chain reaction (RT-PCR) tests are much more sensitive than HIV tests used in the past. They can find as few as 20 copies of HIV RNA in a milliliter of blood.

Your healthcare provider should use the same HIV viral load test each time, because tests made by different manufacturers might give you slightly different results. If your viral load changes, you want to be confident it's from what's happening inside your body, not because the testing method is slightly different. Scientists are working on new, even more sensitive methods all the time.

WHAT DO THE RESULTS MEAN?

A high HIV viral load is generally considered above 100,000 copies per milliliter of blood, but you could have 1 million or more. The virus is at work making copies of itself and the disease may progress quickly.

An undetectable HIV viral load is generally considered to be less than 50 or 20 or 5 copies per milliliter of blood. This is called viral suppression. Viral suppression and an undetectable viral load are always the goals of ART. This does **not** mean that there is no virus in your body; it just means that there is not enough for the test to find and count. **People with HIV who achieve and maintain an undetectable viral load cannot transmit HIV sexually to their partners**. Continuing to take ART as prescribed to keep the virus undetectable is very important.

HOW IS THE TEST USED?

Studies have found viral load levels to be a predictor of the time to progression to AIDS that is independent of CD4 cell counts.

Viral load measurements are primarily used for monitoring the response to treatment. Viral load is the most important indicator of initial and sustained response to ART and should be measured in all people diagnosed with HIV at entry into care, at initiation of ART, and on a regular basis thereafter.

Right after being diagnosed with HIV, you should get a viral load test for a baseline measurement. That gives your healthcare provider something to compare future test results to.

Individuals who are adherent to their ART regimens and do not harbor resistance mutations to the component drugs generally achieve viral suppression 8-24 weeks after ART initiation; rarely, in some patients it may take longer. Viral load should be measured before initiation of ART and within 2-4 weeks but no later than 8 weeks after treatment initiation or modification. The purpose of the measurements is to confirm an adequate initial response to ART, indicating you are on an effective ART regimen. Repeat viral load tests should be performed at 4-8-week intervals until viral load level falls to undetectable.

Viral load measurement should be performed within 4-8 weeks after changing therapy. The purpose of viral load monitoring at this point is to confirm the effectiveness of the new regimen.

In people on a stable, suppressive ART regimen, viral load should be repeated every 6-12 months or as recommended by your healthcare provider to confirm continuous viral suppression.

VIRAL LOAD BLIPS

Occasionally, your viral load measurement may go from undetectable to a low level (typically less than 400 copies/mL) and then return to undetectable. These blips are not uncommon in successfully treated people with HIV and are not predictive of virologic failure or that the virus is developing resistance.

ARE THERE LIMITATIONS WITH THE VIRAL LOAD TEST?

Only about 2% of the HIV in your body is in the blood. The viral load test does not measure how much HIV is in body tissues like the lymph nodes, spleen, or brain. HIV levels in lymph tissue and semen go down when blood levels go down, but not at the same time or the same rate.

The viral load test results can be inaccurate if your body is fighting an infection or if you have just received an immunization (like a flu shot). You should not have blood taken for a viral load test within 4 weeks of any infection or immunization.

THE BOTTOM LINE

HIV viral load refers to the number of viral particles found in each milliliter of blood. The more viral particles in the blood, the faster the immune system is likely destroyed and the faster the progress toward AIDS.

The viral load test helps you and your healthcare provider get a complete picture of how your immune system is fighting HIV. Monitoring viral load levels during ART helps your healthcare provider assess how well you are responding to their prescribed treatment.

ART is now recommended for all people with HIV. If you are on ART and successfully maintain viral suppression for at least 2 years, you may get viral load measurements less often.

MORE INFORMATION

HIV.gov: Laboratory Testing Guidelines

Lab Tests Online: HIV Viral Load

MedlinePlus: HIV Viral Load

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