factsheet 11
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viral load

Viral load is the term used to describe the amount of HIV in your blood. The more HIV in your blood, the faster you lose CD4 T-cells, immune system cells which fight infection (see NAM Factsheet 3, CD4 T-cell counts which was last updated in June 2002), and the greater your risk of developing symptoms in the next few years.

The result of a viral load test is described as the number of 'copies' of HIV RNA per millilitre (copies/ml). 10,000 copies/ml and below is generally considered low, and 50,000 copies/ml or greater is 'high.'

There are a number of different viral load tests in use at the moment, each using a slightly different technique to measure the number of HIV particles in the blood. All the tests are equally reliable at determining if a viral load is high, medium or low. However each test has a limit below which it cannot reliably detect HIV. For most tests this is now 50 copies/ml. Any sample with HIV levels below this threshold is said to be 'undetectable.' This does not mean that there is no HIV in the sample, just that the number of copies is somewhere between 0 and 49.

Vaccinations and infections can cause temporary increases in viral load and it is best to avoid having a viral load test for at least one month after the illness of vaccination.

All the viral load tests are equally able to measure types of HIV which are most common in Africa and Asia.

Viral load tests and people not currently taking anti-HIV treatments

If you are not taking anti-HIV drugs, your viral load will be monitored at your regular clinic visits because this can provide clues to the likely course of HIV infection if left untreated. Among people with the same CD4 count, those with higher viral loads tend to have more rapid disease progression than those with lower viral loads.

Changes in your viral load over time, along with other indications, particularly your CD4 count and the presence of HIV-related symptoms, can help you decide whether or not to start anti-HIV treatments (CD4 counts are the subject of NAM Factsheet 3 which was last updated in June 2002).

Monitoring treatment

Effective anti-HIV treatment results in a reduction in viral load. If you are starting treatments or about to switch treatments, your doctor should perform a viral load test to determine a 'baseline' before starting or changing drugs, followed by a further tests four to twelve weeks later to see how much your viral load has gone down.

For some people anti-HIV treatments can reduce the amount of HIV in the body to 'undetectable.' Doctors think that undetectable viral load should be the aim of treatments. It is desirable to have an undetectable viral load as HIV is much less likely to develop resistance to the drugs used to treat it, and also, the risk of becoming ill because of HIV is reduced.

The amount of time it takes to achieve an undetectable viral load can vary and after six months on your first combination your viral load should ideally have gone down to below 50 copies/ml.

Viral load blips

People with undetectable viral loads may experience small increases in their viral load from time to time. These are called blips and typically the viral load will increase from undetectable up to 100 or 200 copies/ml before going back down to undetectable on the next test. This does not indicate that treatment is failing. However, if viral load increases above 50 but below 500 copies/ml and remains there, this could indicate your treatment is failing and you should discuss with your doctor switching or intensifying treatment.

Resistance testing

If your viral load rises above 1,000 copies/ml then resistance tests can be performed to see which drug or drugs you are taking you have become resistant to. HIV which has developed resistance to one drug may also be resistant to other similar drugs you have not taken, this is called cross-resistance and a resistance test should also indicate which drugs will be effective for you.

In order to keep your future treatment options as open as possible, some doctors argue that the aim of treatment should always be an undetectable viral load. However, some doctors argue that in some people, particularly those who are on their second or later combination, this might not be possible and will mean that people switch from drugs which still are useful, until they eventually run out of treatment options.

Viral load and HIV transmission

Routine viral load tests only measure the amount of HIV in the blood and not the amount of the virus in the body's cells or the brain or genital fluids. The effects of anti-HIV drugs in these places may vary so people with an undetectable viral load may remain infectious to other people.

NAM publishes a wide range of publications on treatment for HIV

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