Viral load is the term used to describe the amount of HIV in a body fluid. Viral load tests measure the amount of HIV in a small sample of blood and this is one of the tests that your HIV clinic will carry out regularly to monitor your health and help inform your decisions about treatment.

The result of a viral load test is described as the number of ‘copies’ of HIV’s genetic material (RNA) per millilitre (copies/ml). Normally your doctor will just give your viral load as a number.

There are a number of different viral load tests in use, 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. This is referred to as viral load being ‘undetectable’.

Undetectable viral load is usually defined as below 50 copies/ml. Until recently, this was the lowest detectable level for tests most commonly used in routine viral load monitoring. There are now some ultra-sensitive tests that can measure below 20 copies/ml.

"As well as reducing viral load in your blood, HIV treatment also reduces viral load in other body fluids.”
This does not mean that there is no HIV in the sample, just that the number of copies is somewhere between 0 and 50.

Having an undetectable viral load is a good thing. It should help your immune system to recover and stay strong.

**Viral load tests and people not taking HIV treatment**

If you are not taking HIV treatment, 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.

The more HIV in your blood (the higher your viral load), the faster your CD4 cells (immune system cells that fight infection) reduce, and the greater your risk of becoming ill because of HIV.

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 when to start HIV treatment.

**Monitoring treatment**

Effective HIV treatment results in a fall in viral load. If you are starting treatment 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 test four to twelve weeks later to see how much your viral load has gone down.

For most people, HIV treatment can reduce the amount of HIV to 'undetectable'. An undetectable viral load is the aim of HIV treatment. If you are taking HIV treatment and have an undetectable viral load, 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.

**The best results of HIV treatment are seen in people who take all doses of their anti-HIV drugs as prescribed. This is sometimes referred to as adherence.**

If you’re having problems taking your treatment for any reason, it’s important to talk to your HIV doctor, or someone else in your healthcare team, for advice and support. You might find our online tool *Talking points* ([www.aidsmap.com/talking-points](http://www.aidsmap.com/talking-points)) useful when preparing for an appointment.
Viral load blips

People with undetectable viral loads may experience small increases in their viral load from time to time. These are often 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 not working as well as it should and you and your doctor should discuss whether you need to switch treatment.

Vaccinations and infections can cause temporary increases in viral load and you and your doctor may sometimes decide to delay a viral load test for a month after the illness or vaccination.

Resistance testing

If you are taking HIV treatment and your viral load rises above 200 copies/ml, it may be because your HIV has become resistant to a drug. Resistance tests can be performed to see which of the drugs you are taking the HIV has 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. There are lots of anti-HIV drugs available; you can find out more about these in our Anti-HIV drugs booklet (see www.aidsmap.com/booklets)

Viral load and HIV transmission

If you have a high viral load in your blood, then you may also have a high viral load in other body fluids, including your semen or vaginal fluid. Having a high viral load means HIV can be passed on more easily.

As well as reducing viral load in your blood, HIV treatment also reduces viral load in other body fluids.

For women living with HIV who are pregnant, or planning a pregnancy, taking HIV treatment to reduce viral load is an important part of preventing HIV being passed on to their baby. In the UK, because of high standards of care (as set out in the British HIV Association guidelines), the risk of mother-to-child transmission is very low. For women who are on effective HIV treatment and who have an undetectable viral load, risk of transmission to their baby is 0.1%, or one in a thousand.

There’s been a lot of debate about how likely it is that HIV could be passed on during sex when someone living with HIV is taking effective HIV treatment and has an undetectable viral load. It is clear that having an undetectable viral load greatly reduces the risk of HIV being passed on. For example, a study looking at couples in which one partner has HIV and the other does not found no transmissions over a two-year period.
when the HIV-positive partner was taking HIV treatment and had an undetectable viral load.

However, it is not clear whether having an undetectable viral load completely removes the risk of HIV being passed on. In particular, having an undetectable viral load in blood does not necessarily mean viral load is undetectable in other body fluids. Viral load can fluctuate between regular tests, and other factors can increase the likelihood of HIV being passed on, such as one of the partners having another sexually transmitted infection.

You can read more about this subject in our factsheet *Viral load and transmission – a factsheet for people with HIV* and we would recommend that you talk to someone in your clinic team about it.

### Find out more

- **CD4, viral load & other tests** Information booklet
- **Viral load and transmission – a factsheet for people with HIV** Simple factsheet
- **Undetectable viral load** Basic leaflet with pictures