

Factsheet **Viral load**

Key points

- Effective HIV treatment results in a fall in viral load
- An undetectable viral load is the aim of HIV treatment.
- People who are taking effective HIV treatment and have an undetectable viral load do not pass on HIV.



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. 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

HIV treatment is recommended for everyone diagnosed with HIV. If you have chosen not to take HIV treatment at the moment, 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. Your doctor will check your viral load within a month of starting treatment, and again three and six months after starting treatment.

Your viral load four weeks after starting HIV treatment is a good indicator of whether it will become undetectable on this combination of anti-HIV drugs.

The aim of HIV treatment is an undetectable viral load. Your viral load should have fallen to undetectable levels within three to six months of starting HIV treatment. If this doesn't happen, your doctor will talk to you about possible reasons for this and discuss what to do next.

Once you have an undetectable viral load, you will have your viral load monitored every three to four months. If you have had an undetectable viral load for some time and are doing well on treatment, your doctor may offer you the option to have your viral load measured every six months or every year.

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.

Viral load blips

People with an undetectable viral load sometimes experience what are called 'blips' in their viral load. Their viral load increases from undetectable to a low but detectable level before becoming undetectable again on the next test.

Viral load blips do not necessarily show that your HIV treatment has stopped working.

There are a number of theories about the reasons for blips. These include variations in the laboratory processes, or having an infection like a cold or the flu.

If your viral load stays above detectable on two consecutive tests, or possibly if you have fairly frequent blips, your doctor will want to discuss possible causes and whether you need to change your treatment.

Resistance testing

If you are taking HIV treatment and your viral load rises and doesn't fall again, it may be because your HIV has become resistant to a drug. Resistance tests will show which drugs are no longer effective. 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, the 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 and in most cases the risk is reduced to zero. 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.

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