

# Factsheet Blood problems and HIV

## Key points

- People living with HIV who have a low CD4 count sometimes also have low levels of other blood cells.
- Some of these problems may be caused by damage to the bone marrow.
- These problems include anaemia, neutropenia and thrombocytopenia.



In people living with HIV who have CD4 counts over 350 cells/mm<sup>3</sup>, blood problems such as those described below are not common. In people taking HIV treatment, these problems are rare, with the exception of anaemia, which can be a side-effect of the anti-HIV drug zidovudine (AZT, *Retrovir*).

However, people living with HIV who have a lower CD4 count (where some damage to the immune system has occurred) sometimes also experience reductions in the numbers of certain other cells in their blood. Some of these problems may be caused by damage to the bone marrow where blood cells are produced.

*"These problems are all detected using standard blood tests that you should have as part of your normal HIV care."*

HIV can damage the bone marrow by infecting its cells directly, or by disrupting levels of natural chemicals (called growth factors) that help bone marrow cells develop. The bone marrow may also be affected by some drugs or the illnesses that can develop if you have a weak immune system (opportunistic infections). A decrease in blood cells can also be caused by the destruction of cells in the circulation or by bleeding disorders such as haemophilia.

Apart from a decline in CD4 cells, the three most common blood problems among people living with HIV are [anaemia](#), neutropenia and thrombocytopenia. They are all detected using standard blood tests that you should have as part of your normal HIV care.

## Anaemia

Anaemia means a shortage of red blood cells. Red blood cells transport oxygen around the body, so anaemia can cause symptoms of tiredness and breathlessness. It can be a [side-effect](#) of zidovudine, although it is rare among people with [CD4 counts](#) above 200. Zidovudine is now rarely used if you are [starting HIV treatment](#). If you are taking zidovudine and develop anaemia you may be able to change to a different drug. But zidovudine is an important drug option for some people, particularly during [pregnancy](#).

To treat anaemia, doctors can prescribe an injected drug called erythropoietin. This stimulates the body to produce more red blood cells. People with severe anaemia may need blood transfusions to top up their red blood cells. If the anaemia was caused by taking a drug, after the anaemia has been treated it may be possible to resume taking the drug, this time at a lower dose.

Anaemia can also be caused by some opportunistic infections. If these are treated, the anaemia normally improves.

Anaemia can have other causes, unrelated to HIV and drug treatments. Iron deficiency is a common cause of anaemia in the UK. It is often caused by bleeding, for example from a stomach ulcer or heavy periods. It is also quite common in pregnancy. If you are diagnosed as having iron deficiency anaemia, your doctor may recommend supplements or changes to your diet.

## Neutropenia

Neutropenia means a shortage of neutrophils. These are a type of white blood cell that mainly attack bacteria and fungi, so people who have neutropenia are at increased risk from these infections. The most common cause is the anti-HIV drug zidovudine, the anti-cytomegalovirus (CMV) drug ganciclovir or drugs used to treat cancers and tumours. People living with HIV often have slightly lower levels of neutrophils than people who don't have HIV, but serious neutropenia is rare among people with CD4 counts above 200.

Neutropenia can be treated by stopping the drug which is causing it or reducing the dose. Alternatively, if the neutrophil count falls very low (below 500) doctors may prescribe G-CSF (granulocyte-colony stimulating factor), a drug which stimulates the body to produce white blood cells and has been shown to improve neutropenia and reduce the risk of infections. An alternative drug called GM-CSF also encourages the production of neutrophils, but has the unwanted effect of increasing levels of HIV [viral load](#) too, unless this is suppressed using HIV treatment. Both of these drugs are given by injection.

## Thrombocytopenia

Thrombocytopenia means a shortage of platelets, which are cells that help the blood to clot. People who have thrombocytopenia may bruise very easily or, in serious cases, develop uncontrollable bleeding. HIV can infect the cells in the bone marrow that produce platelets. HIV can also confuse the immune system into attacking platelets in the circulation and removing

them using the spleen. Thrombocytopenia can also be caused by drugs such as ganciclovir.

Thrombocytopenia caused by HIV can be treated with anti-HIV drugs. If it is caused by other treatments, it is treated by reducing their dose or using other drugs. Some cases may be treated using mild doses of steroids or intravenous immunoglobulin.

## Find out more

**Health checks** Basic leaflet with pictures

**CD4, viral load & other tests** Information booklet

**Diagnosed with HIV at a low CD4 count** Simple factsheet