



## Information for patients

# Anaemia

## Patient Information

### What is anaemia?

**Anaemia is the result of either not having enough red blood cells to deliver oxygen around the body or having red blood cells that are unable to carry enough oxygen. Red blood cells contain a special protein called haemoglobin (Hb) which carries the oxygen around the body and anaemia is characterised by a low level of haemoglobin.**

Blood is a complex fluid containing cells and proteins to help our bodies function correctly. These cells include white blood cells which help fight infection, platelets which help form clots when we bleed and red blood cells to carry oxygen. Oxygen is necessary for all our organs and tissues to convert food into energy. Red blood cells last for around 120 days, so the body must constantly make new ones, in the bone marrow, to replace them

## What are the signs and symptoms of anaemia?

The following can be features of anaemia:

- ◆ Fatigue/tiredness
- ◆ Shortness of breath
- ◆ Dizziness
- ◆ Fast heartbeat or sensation of the heart beating in the chest (palpitations)
- ◆ Pounding or 'ringing' in your ears
- ◆ Headache
- ◆ Cold hands or feet
- ◆ Pale or yellow skin
- ◆ Chest pain
- ◆ Lack of concentration
- ◆ Sore tongue or mouth ulcers
- ◆ Irritability.

## Are there different types of anaemia?

Yes, there are many different types of anaemia and they require different treatments. Some of the most common types are listed below.

**Anaemia due to an under-production of red blood cells can have different causes including:**

- ◆ **A shortage of iron or vitamins:** iron deficiency anaemia is common. A lack of iron might be due to not having enough iron in your diet, problems with absorbing iron from your food or iron being lost, for example due to surgery or because of bleeding. A lack of iron can also happen during pregnancy when demand increases to support the baby's development.
- ◆ **Vitamin B12 or folate deficiency:** this can be a result of not eating enough food containing vitamin B12 and folate, or the inability of the body to absorb it, for example in conditions such as pernicious anaemia and coeliac disease.
- ◆ **Anaemia of chronic illness:** this is sometimes called 'functional iron deficiency'. Iron stores are available, but inflammation caused by chronic illnesses or infections can block the body's access to the iron. This means that the bone marrow cannot produce good quality red blood cells
- ◆ **Anaemia of kidney disease:** patients with kidney dysfunction may be unable to produce enough of the hormone erythropoietin which is the messenger telling the bone marrow to produce more red blood cells.

**Anaemia due to a problem in the bone marrow, where red blood cells are made**, for example:

- ◆ Cancer may invade the bone marrow and stop it working properly
- ◆ Some drugs such as those used in chemotherapy may slow down the rate at which red blood cells are made
- ◆ Bone marrow disease that can cause anaemia such as myelodysplastic syndrome or aplastic anaemia.

**Anaemia due to inherited disorders:** these can affect haemoglobin production, for example thalassaemia.

**Anaemia due to increased destruction of red blood cells:** this is also called 'haemolysis' and has several causes, including, inherited disorders like sickle cell anaemia, and rarely, as a reaction to medicines or infection.

**Anaemia due to bleeding:** this can be severe and sudden such as bleeding from a stomach ulcer or sudden trauma. It can also be at a slower rate for example, due to heavy periods or hidden blood loss from the bowel. When blood loss is slow, the anaemia develops gradually and is often associated with a shortage of iron because the iron is lost from the red blood cells.

## Am I at risk of anaemia?

Anaemia can be caused in many ways. It is more common in young children and babies as they may not have built up iron stores. It is seen in those who have a diet lacking in iron, essential vitamins and minerals, or who suffer from diseases such as inflammatory bowel disease, bone marrow disorders, rheumatoid arthritis, heart disease, chronic liver diseases or recurrent infections.

You are also at risk if you are losing blood, for example you have bowel cancer or have recently had major surgery.

Girls and women having heavy periods can also become anaemic. Pregnant women may become anaemic as the developing baby requires a lot of iron for their own development.

## What tests may be done to see if I am anaemic?

### Blood Tests

- ◆ Full blood count – checks the number and size of red cells in your blood and measures the haemoglobin level
- ◆ Vitamin B12 and folate levels – checks to see if you have enough to help make red blood cells
- ◆ Ferritin – checks the amount of iron
- ◆ Blood chemistry tests to demonstrate whether organs such as the liver and kidneys are working well.

## Bone marrow biopsy

- ◆ This is rarely required and will only be carried out by a specialist in a hospital if a problem with the bone marrow is suspected.

## Other investigations

These may include tests to see if there is bleeding somewhere – for example:

- ◆ Bowel investigations such as endoscopy or gastroscopy (OGD) and colonoscopy (camera tests looking at the stomach and large bowel)
- ◆ Blood tests looking for coeliac disease
- ◆ Urine tests looking for evidence of blood in the urine
- ◆ Referral to hospital if symptoms do not improve following treatment from your GP.

## What treatments are available?

There are two general approaches to the treatment of anaemia:

1. **Replacement therapy:** depending on the type of anaemia, there are several treatment options available, oral or intravenous iron, folate or vitamin B12 tablets, injections of vitamin B12 and, rarely, blood transfusion.
2. **Treatment of the underlying problem or disease:** these treatments will be guided by the condition that you have, and your doctor will explain them so you can discuss the treatment options available to you.

## What can I do to help?

There are several things you can do to help yourself including:

- ◆ eating a healthy balanced diet including fruit, vegetables, eggs, fish or meat and carbohydrates such as potatoes or pasta. NHS Blood and Transplant provide an information leaflet called 'Iron in your diet' to assist you with this. See details below on how to access this leaflet
- ◆ talking to your doctor, nurse or midwife if you think you have any of the symptoms of anaemia listed in this leaflet, if you have noticed blood in your bowel motions or urine, or if you have persistent heavy periods
- ◆ always discussing any alternative medicine, herbal preparation or over the counter treatments for anaemia with a healthcare professional before taking them, as they may react with any prescribed medications.

## Patient Blood Management (PBM)

PBM provides a set of standards for best practice to ensure the appropriate use of blood. If a transfusion is required, PBM measures are in place to ensure patients are only given a blood transfusion they really need, and that the transfusion is given safely.

During your treatment a blood transfusion may be required. If so, there are other patient information leaflets available from NHS Blood and Transplant such as “Will I need a blood transfusion?” that may help explain things for you. Please ask your doctor or nurse for a copy of the other leaflets that are suitable for your proposed treatment pathway or use the QR code at the end of this leaflet to access all our leaflets online.

## Contact us

**We would welcome your feedback and comments on this leaflet. You can contact us:**

By post to:

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By email to: [nhsbt.customerservice@nhsbt.nhs.uk](mailto:nhsbt.customerservice@nhsbt.nhs.uk)

Or by phone: **01865 381010**

You can obtain the evidence sources for this leaflet via the postal or email addresses above.

This leaflet was prepared by NHS Blood and Transplant in collaboration with the National Blood Transfusion Committee. Further supplies can be obtained by accessing <https://hospital.nhsbtleaflets.co.uk>

Individual copies of this leaflet can be obtained by calling 01865 381010.

**NHS Blood and Transplant** (NHSBT) is a joint England and Wales Special Health Authority. We provide the blood donation service for England and the organ donation service for the UK. We also provide donated tissues, stem cells and cord blood. We are an essential part of the NHS, saving and improving lives through public donation. NHS Blood and Transplant enables around 5,000 organ transplants a year in the UK and collects around 1.4 million units of blood each year to meet the needs of patients across England.

For more information

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