

# Anaemia and chronic kidney disease



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Kidney disease can lead to a shortage of red blood cells in your body. This is known as renal anaemia or anaemia of kidney disease. Anaemia is more common in advanced kidney disease and affects most patients on dialysis.

This leaflet gives more information about anaemia and its treatment.



## How does kidney disease cause anaemia?

Anaemia is a common side effect of chronic kidney disease (CKD).

If your kidneys are damaged, they produce less of a hormone called erythropoietin which is needed to make red blood cells. This results in fewer cells being made and causes anaemia. Red blood cells contain haemoglobin which carries oxygen around your body.

Kidney disease also affects the way in which your body uses iron. If you have kidney disease you may therefore need more iron to make the same amount of haemoglobin as people without kidney disease.

You can also become anaemic for the same reasons as people without kidney disease - blood loss, inflammation, infections, poor nutrition or problems with your bone marrow. Your doctor might think about these causes of anaemia as well.



## What are the symptoms of anaemia?

Symptoms can include:

- Feeling more tired than normal
- Lacking energy
- Shortness of breath, especially after exercise
- Headaches
- Dizziness
- Awareness of the heart beating
- Chest pain
- Feeling cold

These symptoms can happen for other reasons and you should discuss them with your doctor.

Diagnosing anaemia early is important because it can affect your quality of life. Anaemia can also put extra strain on your other organs, including the heart.

## How is anaemia diagnosed?

Anaemia is diagnosed by blood tests. These will measure your blood count (haemoglobin; Hb), iron levels (including ferritin) and levels of vitamin B12 and folate (a type of vitamin B). This can confirm the type and severity of anaemia.

If you are receiving dialysis you will have regular blood tests to monitor your anaemia. If you are not having dialysis you will probably just have your blood count measured in clinic, so if you experience any of the above symptoms you should discuss them with your doctor.



## How is anaemia treated?

Mild anaemia may not need any treatment, particularly if you do not have any symptoms. If you are low on vitamin B12 or folate your doctor may prescribe you supplements as either tablets or injections.

For more severe anaemia, the main treatments are iron supplements and, if needed, injections of ESA (also called EPO), a replacement for the erythropoietin hormone that was previously made by your kidneys.

In earlier stages of kidney disease, iron may be given in tablet form. However, if you have advanced kidney disease or if you are receiving dialysis, you are likely to need iron infusions given into a vein (intravenously), rather than as tablets.

ESA treatment can be injected just underneath your skin, but for convenience it can be given via your dialysis machine for haemodialysis patients.

ESA injections can also be done at home. You can inject yourself or a family member or nurse can do it for you.

You are likely to have regular blood pressure monitoring at either your GPs or in clinic. This will probably be monthly at first until your results are stable and then every 6-12 weeks.



## Are there any side effects of anaemia treatment?

Iron tablets can cause nausea (feeling sick), indigestion, constipation and dark stools (black poo). Iron injections can give you a temporary metallic taste in your mouth, and, rarely, an allergic reaction, which can be serious.

Most people respond well to ESA but some people can develop high blood pressure, flu-like symptoms and skin reactions at the injection site. People with kidney disease can vary in how well they respond to ESA and frequently require dose adjustments.

The main aim of iron and ESA treatment is to improve your quality of life by reducing your symptoms.

## What about blood transfusions?

If you have severe anaemia, suffer complications or the treatments described above are not working, then your doctor may recommend a blood transfusion to replace the red blood cells your body cannot produce.

Blood transfusions are avoided, where possible, due to the risk of allergic reactions, iron overload and to reduce the risk of producing antibodies that might limit the donors you could receive a transplant from.



## What can I do to help manage my anaemia?

Changes to diet can sometimes help to prevent anaemia, but you should talk to your doctor or dietitian before making changes. The Renal Nutrition Group **does not** recommend a high iron diet for patients with CKD.

It is important to follow the treatment recommended by your doctor. You should store ESA injections or iron as recommended by the manufacturer - some products need to be stored in the fridge for example.

You should let your doctor or nurse know immediately if you notice any bleeding or if you experience symptoms of anaemia.

### Key points

- Anaemia is common, particularly in advanced kidney disease, and affects almost all patients receiving dialysis.
- Anaemia can affect your quality of life and general health, so should be treated where possible.
- Treatments, where needed, usually consist of iron medication and ESA injections.
- People respond differently to treatment, often requiring dose adjustments in iron or ESA.
- Blood transfusions are often not used, and given only if there is no response or a bad reaction to other treatments


## Where can I find out more information?

- Kidney Care UK - About Kidney Health:  
[www.kidneycareuk.org/about-kidney-health](http://www.kidneycareuk.org/about-kidney-health)
- NHS Choices - Anaemia:  
[www.nhs.uk/conditions/iron-deficiency-anaemia/](http://www.nhs.uk/conditions/iron-deficiency-anaemia/)
- Renal Association/Kidney Care UK Patient Information Leaflets:  
includes leaflets on **Haemodialysis** and **Medicines for treating anaemia**:  
[www.renal.org/information-resources/patient-leaflets](http://www.renal.org/information-resources/patient-leaflets)
- Patient View:  
[www.patientview.org](http://www.patientview.org)  
Online access to your health records. Ask your renal unit for details about how to join
- More technical information can be found in the Renal Association Anaemia Guideline: <https://renal.org/guidelines>



 [www.kidneycareuk.org](http://www.kidneycareuk.org)

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