

# MANAGING IRON

*When You Have Kidney Disease or Kidney Failure*



National  
Kidney  
Foundation®

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

## About the Information in this Booklet

Did you know that the National Kidney Foundation (NKF) offers guidelines and commentaries that help your healthcare provider make decisions about your medical treatment? The information in this booklet is based on those recommended guidelines.

## Stages of Kidney Disease

There are five stages of kidney disease. They are shown in the table below. Your healthcare provider determines your stage of kidney disease, based on the presence of kidney damage and your glomerular filtration rate (GFR), which is a measure of your kidney function. Your treatment is based on your stage of kidney disease. Speak to your healthcare provider if you have any questions about your stage of kidney disease or your treatment.

### STAGES OF KIDNEY DISEASE

Stage	Description	Glomerular Filtration Rate (GFR)*
1	Kidney damage (e.g., protein in the urine) with normal GFR	90 or above
2	Kidney damage with mild decrease in GFR	60 to 89
3	Moderate decrease in GFR	30 to 59
4	Severe reduction in GFR	15 to 29
5	Kidney failure	Less than 15

\*Your GFR number tells your healthcare provider how much kidney function you have. As chronic kidney disease progresses, your GFR number decreases.

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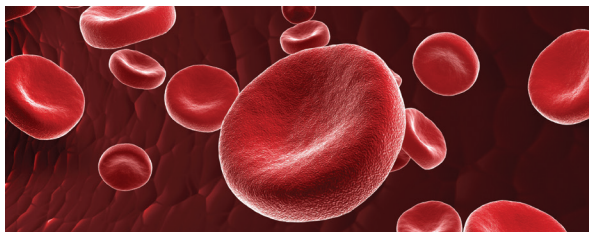
If you have chronic kidney disease or kidney failure, your body may be lacking an important mineral called iron. This booklet will answer some common questions about iron, and how important it is to have healthy iron levels.

## **What is iron?**

Iron is a mineral needed for healthy blood cells and for overall good health. Iron is found in a wide variety of foods. You can also get iron from supplements taken by mouth and from iron medicines prescribed by your healthcare provider.

## **What does iron do?**

Iron helps your body in many ways. One way is to help make red blood cells. Red blood cells carry oxygen from your lungs to all parts of your body. They give you the energy you need for your daily activities. The kidneys tell your body to make red blood cells. Iron helps make red blood cells healthy.



## What is kidney disease?

Your kidneys do many important jobs. They remove waste products and extra fluid from your body and help make red blood cells. They also help to keep the right amounts of minerals in your blood. Minerals are nutrients that you get from food. Your body needs them to work properly. When you have kidney disease, it means your kidneys are damaged. They cannot do these jobs very well.

In the early stages of kidney disease, most people do not have any symptoms. You may not be aware that your kidney function is reduced. If kidney disease gets worse, waste products can build up to high levels in your blood and make you feel sick. This may happen slowly over a long period of time. People with kidney disease may develop other health problems as well. These may include high blood pressure, heart disease, anemia (low red blood cell count), weak bones, and poor nutrition.

### Do you know these words?

Some words that are used in this booklet may be new to you. To help you get to know them, there's a list of "Words to Know" at the end of this booklet.

Finding and treating kidney disease early is important. With treatment, it may be possible to keep kidney disease from getting worse. If kidney disease continues to get worse, it can lead to kidney failure.

## What is kidney failure?

Kidney failure means your kidneys do not work well enough to keep you alive. You will need treatment with dialysis or a kidney transplant to live.

Dialysis is a process that filters waste products and extra fluid from your blood when your kidneys cannot. There are two types of dialysis: hemodialysis and peritoneal dialysis. A kidney transplant is an operation that places a healthy kidney into your body.

### FACT

Your kidneys make an important hormone called erythropoietin (EPO). EPO tells your body to make red blood cells. When you have kidney disease or kidney failure, you may not be able to make enough EPO. As a result, your body makes less red blood cells and anemia can develop. Some people with kidney disease need a medicine called an erythropoiesis-stimulating agent (ESA) to do the work of EPO.

## Why is iron important?

Your body needs iron to make red blood cells. Without enough iron, you may get anemia. Anemia means you do not have enough red blood cells. As a result, your blood cannot carry enough oxygen through your body. Making sure you have enough iron helps to correct anemia.

## How much iron do I need?

You need enough iron to keep a healthy hemoglobin level. Hemoglobin is part of your red blood cells. It's the part that carries oxygen through your body. Hemoglobin is made up of oxygen and iron. Therefore, one way to know if your body has enough iron is to measure how much hemoglobin is in your blood. The normal **hemoglobin level** is **12.0 for women** and **13.5 for men**.

## How else is my iron level tested?

Two important tests can tell if you have enough iron. They are called transferrin saturation (TSAT) and ferritin. You may need extra iron if the results of these tests show that your TSAT and ferritin are low.

## How will I feel if my iron level is low?

If your iron level is low, you may have low hemoglobin. This can cause you to:

- Look pale
- Feel more tired or weak
- Feel “down” or depressed
- Feel short of breath with activity
- Have chest pain
- Feel dizzy or light-headed
- Feel numbness or coldness in your hands and feet
- Have a faster heartbeat

### TIP

Talk to your healthcare provider if you have any of the symptoms listed above. Write down how you feel, your allergies, medications, previous medical procedures, and any health problems. Discuss how you are feeling. Ask your healthcare provider:

- “Do I have enough iron?”
- “What can I do to feel better?”



## If I have kidney disease, what is the treatment for low iron?

If you have low iron and low hemoglobin, your doctor will develop a treatment plan that is right for you. One or more of the following may be suggested:

- Eating more foods that have iron such as red meat, leafy green vegetables, and eggs. However, eating foods that are rich in iron may be hard due to your kidney diet. A dietitian can help you plan meals that include iron and other minerals.
- Iron supplements by mouth in tablet or liquid form.
- A vitamin and mineral supplement with iron, vitamin B12, and folic acid. Your dietitian or healthcare provider will help you choose one that is right for people with kidney disease.
- Iron medicine given by injection into a vein during visits to your healthcare provider's office or clinic.

**TIP**

Iron supplements can affect other medicines you may be taking. Talk to your healthcare provider, dietitian, or pharmacist before taking iron tablets or liquid supplements.

**If I have kidney failure, what is the treatment for low iron?**

If you have kidney failure, you can take extra iron by mouth or have it injected into a vein at the healthcare provider's office (called intravenous iron or IV iron). You and your healthcare provider will decide which method is best for you. Most people on dialysis need extra iron because:

- Lack of iron-rich foods in your diet. Foods that are rich in iron, like red meats and beans, may be limited in your dialysis diet. Without enough iron-rich foods, you are more at risk for low iron. A dietitian can help you choose foods that are good sources of iron, vitamins, and other minerals. Check with your dietitian before making any changes in your diet.

- Blood loss during dialysis. At the end of each hemodialysis treatment a small amount of blood is usually left behind in the dialyzer (artificial kidney). This can be a source of iron loss over time.

### TIP

If you are receiving hemodialysis, IV iron can be given to you as an injection into the blood tubes during your hemodialysis treatment.

### Is IV iron safe?

IV iron is safe for most people. Talk to your healthcare provider if you have any questions about IV iron. Tell them about any medicines that you are allergic to. On rare occasions, some people may have a reaction to IV iron. Reactions may include low blood pressure, nausea, vomiting, or diarrhea.



## Where can I get more information?

If you have questions, the National Kidney Foundation can help. Call the NKF Cares Patient Help Line toll-free at **855.NKF.Cares** (855.653.2273) or email **nkfcares@kidney.org**. A trained professional will listen to your concerns and help answer your questions.

If you want to read more about kidney disease or kidney failure, the National Kidney Foundation has a lot of information on many topics, such as:

- Anemia
- GFR (glomerular filtration rate)
- Nutrition
- High blood pressure
- Diabetes
- Coping with kidney disease and kidney failure
- Treatments for kidney failure, including hemodialysis, peritoneal dialysis, and kidney transplant

You can also learn more at **www.kidney.org**

## Words to Know

**Anemia:** A decrease in the number of your red blood cells, which can make you feel very tired and have other bad effects.

**Dialysis:** A process that filters waste products and extra fluid from your blood when your kidneys are no longer doing their job. It is one of the basic forms of treatment for kidney failure. There are two types of dialysis: hemodialysis and peritoneal dialysis.

**Dietitian:** A professional with special training to help you plan what to eat and drink to help you feel your best.

**EPO (erythropoietin):** EPO is a hormone made by your kidneys. EPO tells your body to make red blood cells. If your kidneys cannot make enough EPO, you will get anemia.

**ESAs (erythropoiesis-stimulating agents):** ESAs are a special type of medicine that can help your body make red blood cells.

**Ferritin:** A protein that stores iron in your body. A simple blood test for ferritin helps your healthcare provider know if you need extra iron.

**Hemodialysis:** A form of dialysis treatment. In hemodialysis, your blood is cleaned of waste products and extra fluid through a dialysis machine.

**Hemoglobin:** Hemoglobin is the part of red blood cells that carries oxygen throughout your body.

**Hormones:** Chemical messengers produced by many different glands in your body, including the kidneys, to trigger certain responses in your body.

**Intravenous injection (IV):** An injection that is given to you directly in your vein.

**Iron:** Iron is a mineral needed for healthy blood cells. You get iron from a variety of foods, including red meat and leafy, green vegetables.

**Kidney disease:** The loss of some or all of your kidney function. Kidney disease can result from conditions such as high blood pressure, diabetes, or an injury to the kidneys.

**Kidney failure:** The stage of kidney disease at which dialysis or a transplant is needed to stay alive.

**Kidney transplant:** An operation that places a healthy kidney in your body. It is one of the basic forms of treatment for kidney failure.

**Minerals:** Minerals, such as iron, are nutrients that you get from food. Your body needs them to work properly.

**Nutrients:** Chemicals that you get from food that are necessary to live and grow. They are used to build and repair tissues, regulate body processes, and for energy. Vitamins and minerals are nutrients.

**Peritoneal dialysis:** A form of dialysis treatment that filters waste products and extra fluid from your blood. It is one of the basic forms of treatment for kidney failure.

**TSAT (transferrin saturation):**

Transferrin is a protein that carries iron in the blood. A simple blood test for transferrin saturation helps your healthcare provider know if you need extra iron.

**Vitamins:** Vitamins are nutrients that your body needs to work properly.

The **National Kidney Foundation** is the leading organization in the U.S. dedicated to the awareness, prevention, and treatment of kidney disease for hundreds of thousands of healthcare professionals, millions of patients and their families, and tens of millions of Americans at risk.

Help fight kidney disease.

Learn more at **[www.kidney.org](http://www.kidney.org)**



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