

## **Anemia of Chronic Kidney Disease**

This guide can help you learn more about anemia caused by chronic kidney disease and how it is treated.

### **What is anemia of chronic kidney disease?**

Anemia happens when the body does not have enough healthy red blood cells. Red blood cells carry oxygen to tissues in the body. Anemia of chronic kidney disease is a blood disorder. It is the result of a long-term (chronic) medical condition that decreases the number of red blood cells.

### **How do I know if I have anemia?**

You may notice some of these signs and symptoms of anemia.

- Pale skin
- Decreased hunger
- Feeling tired
- Trouble sleeping
- Trouble concentrating
- Shortness of breath or chest pain

### **Why do I have anemia and some transplant patients don't?**

- You may have had anemia before your transplant.
- Chronic kidney disease may happen in your transplant kidney over time.

### **Why do I have chronic kidney disease?**

This is a list of some of the risk factors for kidney disease:

- Other health problems like diabetes and high blood pressure.
- Taking medicines to prevent rejection.
- If you had a kidney transplant and have had rejection in the past.

### **Why do people with kidney disease have anemia?**

People with kidney disease may not make enough erythropoietin. It is a hormone made in your kidneys that tells your bone marrow to make red blood cells.

- When your kidneys show signs of disease, they make less erythropoietin.
- With less erythropoietin, your body makes fewer red blood cells.
- With fewer red blood cells, you may become anemic and feel tired.

### **What is the treatment for anemia?**

Anemia is treated with erythropoiesis stimulating agents (ESAs). These medicines tell the bone marrow to make more blood cells. There are two of these medicines that treat anemia caused by chronic kidney disease:

- Darbepoetin (Aranesp<sup>®</sup>)
- Epoetin (Procrit<sup>®</sup>, Retacrit<sup>®</sup>, or Epogen<sup>®</sup>)

ESAs are given as an injection under your skin. Your dose and injection schedule may change based on your lab results. You may be able to do your injection at home or you may need to come to clinic.

### **Are there side effects with ESAs?**

Most people do not have side effects with ESAs. Side effects that may happen are high blood pressure, headache, and diarrhea.

Some people feel a sting during the injection but it will quickly go away.

If ESAs are given at too high of a dose, you have an increased risk of blood clots, stroke, or heart problems.

To make sure you are getting the right dose, your lab tests are closely watched and your blood pressure is checked at each visit. If your blood pressure is too high, you will not get an injection until your blood pressure is normal.

**What lab tests will I need?**

**Each month:**

You will have a blood test done to check for anemia. This blood test measures your hemoglobin (Hgb) level. For people with kidney disease, the hemoglobin level should be between 9.5 and 11 g/dL (grams/deciliter).

**Every three months:**

If you do not have enough iron in your body, the ESA injections will not help. Two tests check iron levels:

- A ferritin test checks how much iron is stored in your body. The ferritin should be 100 ng/mL (nanograms/milliliter) or more.
- A transferrin saturation (TSAT) test shows how well your body is using the iron you have. The TSAT should be 20 percent or more.

**Why is iron part of treating anemia?**

Your body needs iron to make red blood cells. Once you start getting ESAs, your body will make more red blood cells. Iron stored in your body will be used up faster. You likely will need to take an iron supplement with your ESA injections.

**What do I need to know about taking iron?**

Many people get enough iron by taking iron pills. It works best to take iron on an empty stomach, but you may notice side effects:

- Stomach upset
- Cramping
- Constipation
- Nausea
- Diarrhea and bloating
- Dark green or black stools

If you have side effects when taking iron, you may try taking it with food or right after meals. It may also help to try a different type of iron pill. You may need to try a few from the list below before you find one that works best for you. You may need a stool softener if iron pills cause constipation.

<b>Iron Products</b>	<b>Brand Name (amount of elemental iron)</b>	<b>Cost</b>
Ferrous Sulfate	Generic 325mg (65 mg)	+
Ferrous Gluconate	Fergon 240 mg (27 mg)	++
Ferrous Fumerate	Generic 200 mg (66 mg)	++
Iron polysaccharide complex	Niferex (50 mg)	+++
Sustained release iron	Feosol 200 mg (65 mg)	+++
Sustained release iron	Slow FE 160 mg (50 mg)	+++

These foods should not be eaten at the same time you take iron pills.

- Cheese
- Milk
- Eggs
- Yogurt
- Whole grain breads

Some people may need iron through an IV. IV iron can be given at the Transplant Clinic. It is given as two separate doses. Each dose takes about three hours.

### **What if I don't reach my anemia treatment goal?**

If you don't reach your target hemoglobin range your doctor, coordinator, or pharmacist will check to see if you have:

- Enough iron.
- Infection or inflammation in your body.
- Bleeding in your body.
- High levels of parathyroid hormone (PTH) in your blood.
- A health problem that affects how your body makes red blood cells.

### **How can I get more information about anemia of chronic kidney disease?**

- Ask your health care team.
- The National Kidney Foundation (NKF) is a great resource to find out more about kidney disease. The website is [www.kidney.org](http://www.kidney.org).
- [www.kidneyschool.org](http://www.kidneyschool.org)

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 11/2019. University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#7143