

# Anemia in Patients with Kidney Disease

## Understanding Anemia

Anemia refers to a lack of red blood cells. Red blood cells are crucial to your health and wellness as they carry oxygen from your blood to your organs and tissues. If your organs and tissues are not receiving enough oxygen it can reduce their ability to function properly.

Anemia can be dangerous as patients with anemia have a higher risk of heart problems including irregular heartbeat, enlargement of muscles in the heart and heart failure. Patients with Chronic Kidney Disease (CKD) commonly also suffer from anemia.

## Causes of Anemia

- 1. Chronic Kidney Disease:** One of the many things kidneys do for your body is release a hormone called Erythropoietin (EPO). EPO helps trigger alerts in your bone marrow to produce red blood cells. If your kidneys aren't releasing EPO, your body is not creating enough red blood cells and, over time, you may become anemic.
- 2. End Stage Renal Disease:** Patients who have late stage CKD and are on dialysis may also develop anemia from blood loss caused by hemodialysis.
- 3. Decreased Vitamin B12, Iron and Folic Acid:** Patients who have low levels of vitamin B12, iron and folic acid may also become anemic. These nutrients help create hemoglobin which is one of the main proteins that help your red blood cells carry the oxygen molecules which is crucial to organ and tissue function.

## Signs and Symptoms

The signs and symptoms of anemia overlap with symptoms of many other diseases. Please consult your healthcare professional if you are experiencing any of the below as anemia can only be diagnosed with blood work.

- **Weakness or general fatigue**
- **Headache**
- **Difficulty concentrating**
- **Dizziness**
- **Difficulty breathing or shortness of breath (if you are experiencing this symptom you should consult immediate medical care)**
- **Chest pain (if you are experiencing this symptom, immediately call 9-1-1)**

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## Diagnosis

Your physician can diagnose anemia by a combination of a blood test, physical exam and understanding of medical history. While anemia is confirmed by a blood test (to measure your hemoglobin count and iron levels) your physician will also need to know any symptoms you have experienced and your history to make a diagnosis.

## Treatment

Treatment options for anemia vary greatly based on the patient and situation. Below are a few of the common treatments. Before beginning any treatment, ensure your provider is well versed in recent publications as research about anemia treatment is changing treatment recommendations.

- **Iron:** iron can be prescribed as a pill or given as an IV. Raising iron levels can help raise hemoglobin levels to combat anemia.
- **EPO:** Patients can be given doses of EPO to help trigger your body to produce more red blood cells. EPO can be given as an injection or, for patients on dialysis, it can also be administered during dialysis.
- **B12 and Folic Acid supplements:** These are available over the counter and may be recommended to some patients to help with anemia.
- **Red Blood Cell Transfusion:** If a patient's hemoglobin levels fall too low, a physician may prescribe a red blood cell transfusion to help increase the amount of oxygen being delivered to organs and tissues.

Patients with anemia need to work closely with their physician and care team to manage their Anemia.

## Sources:

<https://www.niddk.nih.gov/health-information/kidney-disease/chronic-kidney-disease-ckd/anemia>

[https://www.kidney.org/atoz/content/what\\_anemia\\_ckd](https://www.kidney.org/atoz/content/what_anemia_ckd)

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