

## Understanding CKD Anemia

You or someone you care about may have been diagnosed with CKD anemia, or anemia due to chronic kidney disease. This brochure will help you better understand CKD anemia and how it affects your body.

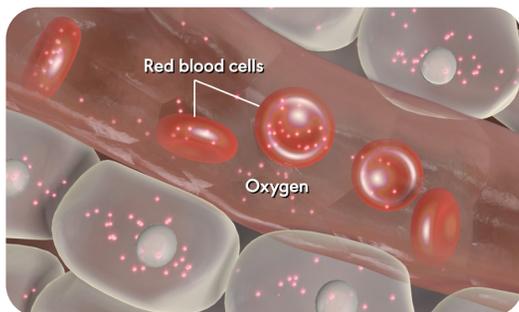
### Normal Red Blood Cells and Their Normal Function in the Body

Anemia happens when you don't have enough red blood cells. Red blood cells are made in the center of bones, called bone marrow. In red blood cells, iron is needed to make a protein that carries oxygen, called hemoglobin.

Red blood cells flow through the bloodstream to the lungs to pick up oxygen. As blood flows through the lungs, oxygen moves from air sacs into the blood. Then, oxygen attaches to the hemoglobin in red blood cells.

These red blood cells deliver oxygen to cells throughout the body.

Cells need oxygen to function and survive

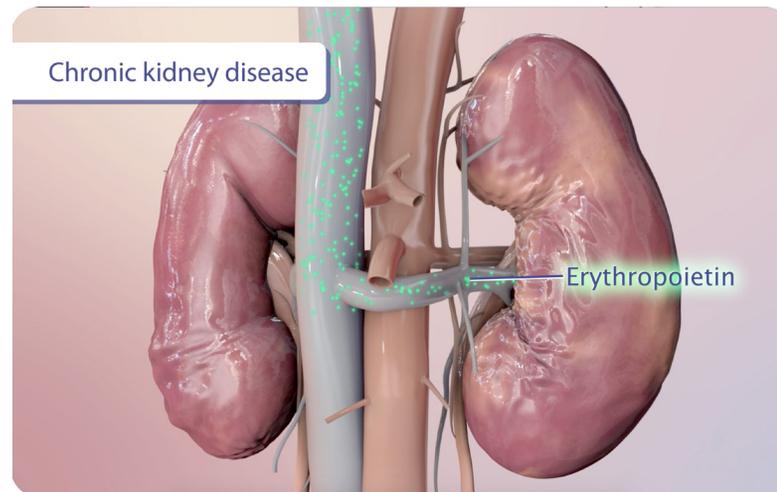


### Cause of CKD Anemia

In anemia, there are not enough healthy red blood cells to deliver oxygen to the body. This means that organs and tissues may not work as well as they should.

While many conditions may cause anemia, it is often caused by chronic kidney disease.

The kidneys make a hormone called erythropoietin, or EPO. Bone marrow uses EPO to make red blood cells. Chronic kidney disease damages the kidneys, so they don't make enough EPO. As a result, the bone marrow makes less red blood cells, causing anemia.



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### Symptoms of CKD Anemia May Include:

- feeling tired or weak
- problems concentrating or thinking
- loss of appetite
- shortness of breath with activity
- feeling lightheaded when you stand up
- pale skin color
- headaches
- chest pain
- a fast heartbeat

### Hemoglobin Test and Levels

A doctor may test a sample of your blood to see if you have CKD anemia. For example, a complete blood count test can measure the amount of hemoglobin and red blood cells in a sample.

A normal hemoglobin range in healthy adults is:

- 13.8 - 17.2 g/dL for men
- 12.1 - 15.1 g/dL for women

A low hemoglobin level in chronic kidney disease is below thirteen for men and below twelve for women.

Your doctor may perform other tests to evaluate CKD anemia.

If you have questions about CKD anemia, when to start treatment, or any medications you have been prescribed, talk to your doctor.

It is important to take your medications as directed, and report any side effects you have.

The information in this handout has been created and peer reviewed by graduate-level medical illustrators, followed by reviews from medical subject experts, either physicians or PhDs on the Nucleus Medical Review Board, to ensure medical accuracy and audience level appropriateness.

The handout is intended to supplement the information you receive from your healthcare provider and should never be considered personal medical advice. Always contact your healthcare provider with health questions and concerns.