

Anemia and Chronic Kidney Disease (patient's information)

What is anemia?

Anemia happens when your body is not making enough red blood cells. Red blood cells carry oxygen to all the cells in the body. The body's cells use oxygen to change the glucose we get from food into energy. Fewer red blood cells means less oxygen is sent to the cells. Without enough oxygen, your tissues and organs have less energy to perform their jobs.

Symptoms of anemia can include the following:

- Feeling weak
- Feeling tired or fatigued
- Shortness of breath
- Dizziness
- Rapid heartbeat
- Pale skin and gums
- Inability to think clearly

Untreated anemia can affect major organs like your heart and brain. Blood tests such as a complete blood count (CBC), hemoglobin test (Hb) and hematocrit test (Hct) can determine if you have anemia.

What causes anemia?

The most common causes of anemia are:

- loss of blood through surgery, accidents and other causes
- conditions such as chronic kidney disease, liver disease, cancer, HIV/AIDS
- not enough iron, vitamin B12 or folic acid
- a poor diet
- diseases that destroy red blood cells, such as sickle cell anemia

Chronic kidney disease and anemia

So why is anemia a common problem for people with chronic kidney disease? Because renal disease can cause low levels of erythropoietin and/or iron in the body.

Healthy kidneys produce a hormone called erythropoietin, or epo for short. When the body senses low oxygen levels, it tells the kidneys to release epo. This hormone tells your bone marrow to make more red blood cells. More red blood cells in the bloodstream mean more oxygen can be transported. However, if the kidneys are damaged, they may make little or no epo.

Iron is a mineral found in protein-rich foods that helps make hemoglobin, the protein in the red blood cell that carries oxygen. A major source of iron is red meat. Since patients in the early stages of kidney disease are advised to reduce the amount of protein they eat, they may not be getting adequate amounts of iron from their diet.

The build up of waste in the bloodstream can also affect red blood cells. Healthy kidneys filter toxins from the bloodstream but kidneys affected with chronic kidney disease are unable to filter as well as they should. Since the body is unable to get rid of this waste, it remains in the bloodstream where it can shorten the lifespan of the existing red blood cells.

Anemia can develop in the early stages of kidney disease and get worse as renal disease progresses. Nearly all patients in end stage renal disease (the point where dialysis becomes necessary) have anemia.

Treating anemia in CKD patients

Depending on the cause of your anemia (low epo levels, low iron levels or a combination of both), your doctor will prescribe medication or supplements. Your doctor may prescribe EPOGEN® or Procrit®, which will add to the amount of erythropoietin your body makes naturally. Your doctor may also have you take iron supplements, especially if you are taking EPOGEN or Procrit. Adequate amounts of iron are needed in order for EPOGEN or Procrit to work effectively.

If you are not getting enough iron, your doctor will refer you to a renal dietitian. Together, you will work on a meal plan that will include kidney-friendly foods rich in iron, vitamin B12 and folic acid.

Your kidney doctor will monitor your condition and make any changes to your treatment plan as necessary. Discuss any concerns or questions you have with your doctor and your renal dietitian before taking over-the-counter iron tablets, multi-mineral or B vitamins or making any changes to your eating plan.

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