

## Disease State Education for Patients & Caregivers

If you have any concerns after reading this fact sheet, please contact your healthcare provider (i.e. Doctor or pharmacist).

### CKD Anemia

#### What is CKD Anemia?

Anemia is a common complication of chronic kidney failure (CKD). It is defined as a condition in which the blood has a lower-than-normal amount of red blood cells or hemoglobin.

Anemia due to CKD is less common in early kidney disease, and it often gets worse as kidney disease progresses and more kidney function is lost.

#### What causes anemia in CKD?

Anemia in people with CKD has multiple causes.

- Damaged kidneys produce less erythropoietin (EPO), a hormone that regulates the production of red blood cells. With less EPO, the body makes fewer red blood cells, and less oxygen is delivered to the organs and tissues.
- Red blood cells of people with anemia and CKD tend to live in the bloodstream for a shorter time than normal, causing the blood cells to die faster than they can be replaced.
- People with anemia and CKD may have low levels of nutrients, such as iron, vitamin B12, and folate, that are needed to make healthy red blood cells.
- Other causes of anemia related to CKD include blood loss, particularly with dialysis, infection, inflammation, malnutrition.

#### What are the symptoms of anemia in CKD?

Symptoms of anemia in CKD may include some or all of the following:

- fatigue or tiredness & unusually pale skin

- reduced ability to exercise, weakness & body aches
- chest pain & shortness of breath
- fast or irregular heartbeat
- dizziness & fainting
- headaches
- sleep problems & trouble concentrating

### How is CKD anemia treated?

Mild anemia causes few symptoms and may not need treatment at first.

Treatments for anemia may include iron, vitamins, prescription medicines, and/ or blood transfusions. The aim of treating anemia is to ease symptoms and improve quality of life.

**Iron-** helps the body make healthy red blood cells. Iron supplements may be given either as a pill or intravenous (IV) infusion. IV iron supplement is given during dialysis treatment.

**Vitamins-** vitamin B12 or folate, both needed to make healthy blood cells

**Prescription medicines-** erythropoiesis-stimulating agent (ESA) may ease anemia symptoms and help avoid blood transfusions. ESAs send a signal to the bone marrow to make more red blood cells. During hemodialysis, ESA is given as an IV or subcutaneous injection.

**Blood transfusions-** blood transfusions may be needed to treat severe anemia in CKD. A blood transfusion can quickly increase the number of red blood cells and temporarily relieve the symptoms of anemia.