Things to Know

About Anemia
What is anemia?

- Anemia is a blood disorder.
- Anemia happens when the body does not have enough healthy red blood cells or hemoglobin.
- Hemoglobin is an important part of red blood cells because it carries oxygen to tissues in the body.
- Anemia can be a 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
- Feeling cold
- Trouble sleeping
- Trouble concentrating
- Shortness of breath or chest pain

Why do people with kidney disease have anemia?

Healthy kidneys make a hormone called erythropoietin. Erythropoietin tells your bone marrow to make red blood cells. People with kidney disease may not make enough erythropoietin. Without enough erythropoietin, your body doesn’t know to make enough red blood cells. This means fewer red blood cells are available for carrying oxygen through your body.
What is the treatment for anemia?

Your anemia may need to be treated with medicines. These are known as erythropoiesis stimulating agents (ESAs). The medicine sends signals to the bone marrow that tell it to make more red blood cells. The Food and Drug Administration (FDA) has approved the following ESAs to treat anemia caused by chronic kidney disease:

- Epoetin alfa (Procrit® or Epogen®)
- Epoetin alfa-epbx (Retacrit®)
- Darbepoetin alfa (Aranesp®)

How will an ESA injection be given?

ESAs are given by an injection under the skin (subcutaneous) in the arm or stomach. The medicine is given in clinic by one of our pharmacists.

Are there side effects with ESAs?

Most people do not have side effects with ESAs. However, there are a number of side effects that have been reported with ESAs. Please review the medication guide for details about serious side effects.

Common side effects of ESAs:

- Joint, muscle or bone pain
- Fever
- Cough
- Rash
- Nausea or vomiting
- Mouth soreness
- Itching
- Headache
- Redness and pain in the skin after the injection

Serious side effects of ESAs:

- Blood clots
- Serious heart problems
- High blood pressure
- Seizures
- Antibodies to ESAs
- Serious allergic reactions
What laboratory tests will I need?

<table>
<thead>
<tr>
<th>Lab Test</th>
<th>What does it mean?</th>
<th>Goal Range</th>
<th>How often is it checked?</th>
</tr>
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<tbody>
<tr>
<td>Hemoglobin (Hgb)</td>
<td>Amount of red blood cells you have in your body.</td>
<td>10.0-10.9 g/dL</td>
<td>At least monthly</td>
</tr>
<tr>
<td>Transferrin saturation (TSAT)</td>
<td>Shows how well your body is using the iron that you have.</td>
<td>Above 20%</td>
<td>Every 3 months</td>
</tr>
<tr>
<td>Ferritin</td>
<td>Checks how much iron is stored in your body.</td>
<td>Above 100 ng/mL</td>
<td>Every 3 months</td>
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</table>

Why is iron important in treating anemia?

Your body needs iron to make red blood cells. Some patients are able to get enough iron by taking iron in a pill form. Some patients may need to receive iron by an intravenous (IV) infusion. It is possible that you may not receive your ESA dose if your iron levels are low. Once you start getting ESAs, your body will make more red blood cells. Iron stored in your body will be used up faster. Therefore, it is common for patients to need iron pills or IV iron at some point during treatment with ESAs.

Why does my ESA injection dose change?

In order to keep your hemoglobin (Hgb) in the right range, you may need an increase or decrease in your ESA dose or give it more or less often. Your ESA dose may be given weekly or less often (for example, every 2 weeks, every 3 weeks or every 4 weeks).

What if I don’t reach my anemia treatment goal?

If you don’t reach your target Hgb range, your doctor, coordinator, or pharmacist will check to see if you:

- Have enough iron
- Have an infection or inflammation in your body
- Are losing blood
- Have high levels of parathyroid hormone, or PTH, in your blood
- Have another health problem that affects your body’s ability to make red blood cells
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