

Does EPO need to be refrigerated?

Yes. However, a temporary loss of electricity will not cause EPO to “go bad.” Please do not let EPO freeze or get too warm. If you inject EPO yourself, always inspect your EPO vial before using it for your injection. Never use any EPO that is cloudy or discolored or has particles in it. If you have any questions about this, ask your doctor or nurse.

Do any other medications interfere with EPO, and does EPO interfere with any medications?

In general, EPO *does not interfere with any other medications*. At the present time, other medications do not seem to affect the action of EPO.

What else do I need to know?

You will feel better with EPO treatment. You may become interested in an exercise program or returning to paid employment. For more information on these topics, see National Kidney Foundation brochures: *Fitness After Kidney Failure: Building Strength Through Exercise* and *Working With Kidney Disease: Rehabilitation and Employment*. If you are still employed, you may find that EPO therapy will enable you to keep working.

Rehabilitation and adjustment to kidney failure require hard work, determination and cooperation with your doctor. However, the continuous effort you make to adjust can be well worth the effort.

This chapter is a reprint of a pamphlet published by the National Kidney Foundation.

Do I need to take EPO if I am hospitalized?

Continuing your EPO injection schedule while you are in the hospital *may prevent a further decrease in your hematocrit* as a result of hospitalization.

How can I take EPO if I go on a trip?

The social worker at your dialysis unit may be able to help you arrange to *receive your EPO at a dialysis unit you visit* during your trip. It also may be possible for you to *arrange to take the EPO with you (in a cooler)* and inject it yourself. However, you should check with the health care team at your dialysis unit about this.

If I feel better, will I need to dialyze as long?

Absolutely. In fact, *some patients need to dialyze for more hours* to clear their bodies of the wastes from increased food as their appetites improve.

Will EPO cure or improve my kidney failure?

No. EPO is not a substitute for dialysis or for other therapy. However, it should make you feel much better.

Will I ever need blood transfusions again?

EPO should eliminate the need for blood transfusions unless you have a severe loss of blood such as that caused by bleeding ulcers or some surgical procedures. In these situations, a transfusion may be necessary since EPO acts slowly to increase the hematocrit.

Are there other uses for EPO besides kidney failure?

Yes. EPO seems to work in some bone marrow diseases. EPO also has been used to increase the number of units of blood for patients who are saving their own blood for elective surgery. However, its main use seems to be for patients with kidney failure.

Why must my iron count be checked all the time?

If your body does not have enough iron, EPO is wasted. If your iron count shows that you need extra iron, it can be given to you by injection or pills.

I hear some patients clot their fistulas. Will this happen to me?

This is *not likely to occur*. Studies have not shown an increase in fistula clotting related to EPO therapy or to a higher hematocrit.

I have had a seizure in the past. Am I likely to have more seizures from EPO?

No. *EPO does not cause an increase in seizures.* If you have had seizures, you should be taking anti-seizure medication. If high blood pressure develops suddenly, it could lead to a seizure. So, the best way to prevent a seizure is to make sure that your blood pressure stays under control.

I am on a special diet to control my potassium level. Can I take EPO and still control my potassium?

Yes. However, you may become more hungry when your hematocrit goes up from EPO therapy. If you eat more foods containing potassium, you may have problems with high potassium. Your doctor may recommend the following measures to prevent your potassium level from becoming too high: a special diet low in potassium; increasing the hours of dialysis; changing the dialysis bath; or sometimes, the use of a special medication to remove potassium from the body.

What happens if my hematocrit gets too high?

A hematocrit above 50 percent *may cause clotting of blood* in the arteries and veins and other complications such as strokes. That is why your hematocrit should be checked on a regular basis.

If I am receiving peritoneal dialysis, can I still take EPO?

Yes. Peritoneal dialysis patients can receive EPO. Usually, it is given by subcutaneous injections.

How long before I notice a difference in how I feel?

Often, there is a period of several weeks before your hematocrit begins to rise. Most patients will begin to feel better when the hematocrit has risen by five or more points. This *may take from one to two months*. Some patients may be started on EPO before their hematocrit falls below 29 or 30 percent. In this case, EPO will prevent the feeling of fatigue and low energy levels caused by anemia.

Does treatment with EPO have side effects?

Rarely, patients develop *flu-like symptoms*, such as muscular aches, from 60 to 90 minutes after the intravenous injection. These symptoms usually are not serious and generally go away with continued use of EPO. The increase in hematocrit can cause an *increase in blood pressure*. This occurs in about a third of patients as the hematocrit level rises toward 30 or above. In general, increases in blood pressure can be handled by the doctor. Be sure to take your blood pressure medication as your doctor tells you.

Can I do anything to prevent my blood pressure from increasing on EPO therapy?

Your blood pressure must be checked at each dialysis treatment. You can help prevent a rise by *watching your salt and water intake* and by *taking all your medications*. If your blood pressure does go up on EPO therapy, your doctor may increase your blood pressure medication or order a new blood pressure medication. If you are overweight, losing weight can help reduce high blood pressure.

Where can I get EPO?

Most patients get EPO at their dialysis unit. Starting July 1, 1991, home dialysis patients became able to get EPO from a *dialysis center*, *physician's office*, or through their *dialysis supplier*.

How much does EPO cost?

The cost *will depend on how much EPO you need*. It is estimated that the annual cost of EPO will be about \$5,000.

How can I afford EPO?

For the dialysis patient, *Medicare will pay for part of the cost* of EPO. You should also check with your insurance company to find out if they will pay for the rest of the cost. The social worker at your dialysis unit may know other resources that can help you.

Do all kidney patients need EPO?

No. EPO is needed only by those patients whose *hematocrit is less than 30 percent*.

What is the lowest dose that will work?

The dose of EPO needed *varies among individual patients*. Most patients require between 25 to 125 Units of EPO per kilogram of body weight, three times a week. (A kilogram is 2.2 lbs.) In order for EPO to be effective, the body must have enough iron. Many dialysis patients need to take iron supplements once EPO therapy is started.

Will I always take the same dose of EPO?

The initial dose needed to increase your hematocrit can be reduced when the blood count is stable. Sometimes, *the dose will need to be adjusted* again, depending on your response to the treatment. An increase in the dose may become necessary if you develop an infection or other complication.

EPO:
TREATING ANEMIA IN CHRONIC RENAL FAILURE

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What is erythropoietin? Why is it important?

Erythropoietin (EPO) is a hormone that prevents anemia (low blood count) by helping you make red blood cells. Anemia causes fatigue and low energy levels. It occurs when there are not enough red blood cells to carry oxygen from the lungs to supply all the body's needs.

Why do patients with kidney disease develop anemia?

Almost all the body's EPO is made in the kidneys. *Kidney disease may damage the cells that make EPO, leading to anemia.* Before EPO was synthesized and made available for injection, many patients with kidney disease had to receive blood transfusions to treat anemia. Now that EPO can be made, people with kidney disease can be given this form of EPO to correct anemia. The injectable form is called recombinant human erythropoietin and is almost identical to what a normal kidney makes.

How is EPO used? Who will give it to me?

EPO is *given by injection.* It may be injected directly into a vein (intravenous) during dialysis or under the skin (subcutaneous). It may be given by a dialysis nurse or by the patients themselves.

How long will I need EPO?

Probably for *as long as you are on dialysis.* EPO should be given regularly to maintain your red blood cell count (hematocrit) at a stable level, usually between 30 and 36 percent. If you have a successful kidney transplant, your new kidney will produce EPO and you will no longer need recombinant human erythropoietin.