

Hemodialysis For End-Stage Renal Disease (ESRD)

This information is from the National Diabetes Information Clearinghouse (NDIC), a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), part of the National Institutes of Health (NIH).

When Your Kidneys Fail

Healthy kidneys clean the blood by filtering out extra water and wastes. They also make hormones that keep your bones strong and blood healthy. When both of your kidneys fail, your body holds fluid. Your blood pressure rises. Harmful wastes build up in your body. Your body doesn't make enough red blood cells. When this happens, you need treatment to replace the work of your failed kidneys.

There are three main treatment choices when your kidneys fail: hemodialysis, peritoneal dialysis, and kidney transplantation. This section discusses hemodialysis. Other sections address peritoneal dialysis and kidney transplantation.

Hemodialysis

Purpose

Hemodialysis is a procedure that cleans and filters your blood. It rids your body of harmful wastes and extra salt and fluids. It also controls blood pressure and helps your body keep the proper balance of chemicals such as potassium, sodium, and chloride.

How It Works

Hemodialysis uses a dialyzer, or special filter, to clean your blood. The dialyzer connects to a machine. During treatment, your blood travels through tubes into the dialyzer. The dialyzer filters out wastes and extra fluids. Then the newly cleaned blood flows through another set of tubes and back into your body.

Getting Ready

Before your first treatment, an access to your bloodstream must be made. The access provides a way for blood to be carried from your body to the dialysis machine and then back into your body. The access can be internal (inside the body—usually under your skin) or external (outside the body).

Who Performs It

Hemodialysis can be done at home or at a center. At a center, nurses or trained technicians perform the treatment. At home, you perform hemodialysis with the help of a partner, usually a family member or friend. If you decide to do home dialysis, you and your partner will receive special training.

The Time It Takes

Hemodialysis usually is done three times a week. Each treatment lasts from 2 to 4 hours. During treatment, you can read, write, sleep, talk, or watch TV.

Possible Complications

Side effects can be caused by rapid changes in your body's fluid and chemical balance during treatment. Muscle cramps and hypotension are two common side effects. Hypotension, a sudden drop in blood pressure, can make you feel weak, dizzy, or sick to your stomach.

It usually takes a few months to adjust to hemodialysis. You can avoid many of the side effects if you follow the proper diet and take your medicines as directed. You should always report side effects to your doctor. They often can be treated quickly and easily.

Your Diet

Hemodialysis and a proper diet help reduce the wastes that build up in your blood. A dietitian can help you plan meals according to your doctor's orders. When choosing foods, you should remember to:

- Eat balanced amounts of foods high in protein such as meat and chicken. Animal protein is better used by your body than the protein found in vegetables and grains.
- Watch the amount of potassium you eat. Potassium is a mineral found in salt substitutes, some fruits, vegetables, milk, chocolate, and nuts. Too much or too little potassium can be harmful to your heart.
- Limit how much you drink. Fluids build up quickly in your body when your kidneys aren't working. Too much fluid makes your tissues swell. It also can cause high blood pressure and heart trouble.
- Avoid salt. Salty foods make you thirsty and cause your body to hold water.
- Limit foods such as milk, cheese, nuts, dried beans, and soft drinks. These foods contain the mineral phosphorus. Too much phosphorus in your blood causes calcium to be pulled from your bones. Calcium helps keep bones strong and healthy. To prevent bone problems, your doctor may give you special medicines. You must take these medicines everyday as directed.

Pros & Cons Of Hemodialysis

Each person responds differently to similar situations. What may be a negative factor for one person may be positive for another. However, in general, the following are pros and cons for each type of hemodialysis.

In-Center Hemodialysis

Pros

- You have trained professionals with you at all times.
- You can get to know other patients.

Cons

- Treatments are scheduled by the center.
- You must travel to the center for treatment.

Home Hemodialysis

Pros

- You can do it at the hours you choose. (But you still must do it as often as your doctor orders.)
- You don't have to travel to a center.
- You gain a sense of independence and control over your treatment.

Cons

- Helping with treatments may be stressful to your family.
- You need training.
- You need space for storing the machine and supplies at home.

Working With Your Health Care Team

Questions You May Want To Ask

- Is hemodialysis the best treatment choice for me? Why or why not?
- If I am treated at a center, can I go to the center of my choice?
- What does hemodialysis feel like? Does it hurt?
- What is self-care dialysis?
- How long does it take to learn home hemodialysis? Who will train my partner and me? What kind of blood access is best for me?
- As a hemodialysis patient, will I be able to keep working? Can I have treatments at night if I plan to keep working?
- How much should I exercise?
- Who will be on my health care team? How can they help me?
- Who can I talk with about sexuality, family problems, or money concerns?

- How/where can I talk to other people who have faced this decision?

Dialysis Is Not A Cure

Hemodialysis and peritoneal dialysis are treatments that try to replace your failed kidneys. These treatments help you feel better and live longer, but they are not cures for ESRD. While patients with ESRD are now living longer than ever, ESRD can cause problems over the years. Some problems are bone disease, high blood pressure, nerve damage, and anemia (having too few red blood cells). Although these problems won't go away with dialysis, doctors now have new and better ways to treat or prevent them. You should discuss these treatments with your doctor.

Conclusion

It's not always easy to decide which type of treatment is best for you. Your decision depends on your medical condition, lifestyle, and personal likes and dislikes. Discuss the pros and cons of each with your health care team. If you start one form of treatment and decide you'd like to try another, talk it over with your doctor. The key is to learn as much as you can about your choices. With that knowledge, you and your doctor will choose a treatment that suits you best.

Source: "End-Stage Renal Disease: Choosing a Treatment That's Right For You," Brochure, NIH Publication No. 94-2412, National Diabetes Information Clearinghouse, June 1994.

MSI-NDIC039

