

# UNDERSTANDING YOUR HEMODIALYSIS OPTIONS





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Hemodialysis is a treatment for people whose kidneys are no longer working. The treatment removes waste products and fluid from the blood using an artificial kidney machine. It is the most common treatment for people who have end-stage renal disease (ESRD), or whose kidneys no longer work.

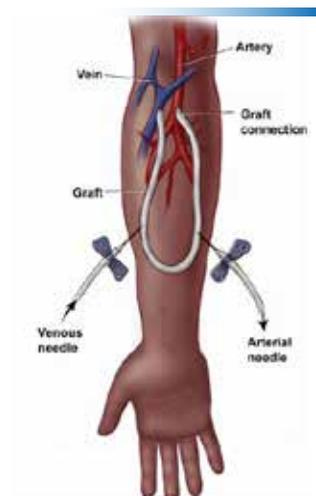
There are four types of hemodialysis treatment options. AAKP created this brochure to explain each of your treatment options, and to show you the pros and cons of each option.

## CREATING AN ACCESS

Before you begin hemodialysis treatment, a surgeon must create an access for the machine. Don't be afraid. Access for the machine will be at a place on your body close to a vein and artery. It allows access to your blood stream. Blood goes from your body through the access and to the dialysis machine. Once inside the artificial kidney machine, the machine cleans the blood and returns the clean blood back to your body through a separate tube. Some people call the vascular access site your "lifeline."

You have three access options: a fistula, a graft, or a catheter. **Fistulas** and **grafts** are permanent accesses, meaning doctors expect them to last a very long time. A permanent

access involves making a connection between an artery and a vein under the skin. A surgeon will make your fistula or graft by sewing one of your arteries to one of your veins. It's a simple medical procedure. Your surgeon chooses which artery and vein to connect depending on how fast your blood flows through the artery and vein.



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A **catheter** is the other type of access. A catheter is a thin, flexible tube that can be put through a small hole in your body. A surgeon inserts the catheter through your skin into a large vein in the neck, chest or groin. It may look a little scary, but it is a safe procedure. The tube or catheter sticks out through your skin all day and every day. Doctors use catheters on people who need short-term dialysis. It can also be used on people who are on long-term dialysis and no longer have a place to insert a fistula or graft. If you

would like more information about the different kinds of access for dialysis, please read “Understanding Your Hemodialysis Access Options” brochure, which is available by calling AAKP at 800-749-2257 or by visiting [www.aakp.org/education/brochures.html](http://www.aakp.org/education/brochures.html).

It might look like there is a lot of blood outside your body during dialysis but don't be alarmed. Actually, there is only about one cup of blood in the tubing and dialyzer at any time during the treatment. You cannot feel blood being pumped-out to the machine.

Dialysis machines have many gauges and alarms. You may find this overwhelming at first. The machine makes sure your treatment is safe by monitoring the pressure in your veins. It also monitors how quickly your blood moves through the tubing and how much water is removed during the treatment.

## **YOUR HEMODIALYSIS OPTIONS**

You can perform hemodialysis in a dialysis unit or at home. You will begin your dialysis treatments in a dialysis center because your doctor needs to keep an eye on your health status in the beginning. Your doctor also needs to keep a close eye on your access to ensure it is working

correctly. Once your doctor clears you, you can talk to your health care team about other hemodialysis treatment options. There are three types of hemodialysis treatment: conventional hemodialysis, short daily hemodialysis and nocturnal (nightly) hemodialysis.

You can use conventional hemodialysis at a dialysis facility or a hospital out-patient unit. The treatment is three or four times a week. This is the most common type of hemodialysis. It is what most people think of when they hear the term hemodialysis. Patients using conventional hemodialysis are treated three times a week. Each treatment is, on average, four hours in length. Your kidney doctor, or nephrologist, prescribes the length of your treatment. The time you spend during each treatment depends on your body size, laboratory results and medical condition.

Another option for hemodialysis treatment is short daily hemodialysis. As the name implies, you can use this type of treatment five to six times per week for a short amount of time. Patients usually do this treatment at home.

Nocturnal or nightly hemodialysis is the third type of hemodialysis. You can use this treatment during the

night while you sleep. It is available in the home and in some dialysis centers.

Home therapies, including short daily and nocturnal, may not be available in all areas. If you need help in finding a facility in your area which provides this treatment, visit the AAKP website and click on the [Find a Dialysis Center](#) button at the top of the page.

## IN-CENTER

### *Conventional Hemodialysis*

Most ESRD patients are treated at a dialysis facility (called in-center conventional hemodialysis) three times a week. You will see many health care specialists at the clinic including doctors, nurses, dialysis technicians and a few others. Nurses and technicians place the access needles and tubing, and monitor the machines. Most dialysis centers have technicians who help begin and end the dialysis treatment. Dialysis technicians also monitor your vital signs during the treatment, clean the equipment after each use, and order supplies. You also have the opportunity to interact with other patients experiencing the same treatment.

There are common elements in each dialysis unit. However, each dialysis unit looks and runs differently. For

many people, it is helpful to tour a dialysis unit to see how it looks and sounds before beginning treatment. Most dialysis centers are designed as an open area with reclining chairs along the wall and a dialysis machine beside each chair. There are usually televisions in the center of the room or a small television at each chair.

An example of a fixed conventional hemodialysis schedule is, Monday, Wednesday and Friday from 9:00 a.m. to 1:00 p.m.



## HOME

### *Conventional Home Hemodialysis*

You may also do conventional hemodialysis in your home. This treatment option requires help from a partner. In this setting, a nurse trains you and a partner on how to use a hemodialysis machine. Training generally lasts four to 12 weeks and is done while you are receiving treatments at the center. Each time you are treated during



the training process, you and your partner will gradually take on more responsibility with the treatment. Once you, your partner and the training staff are confident in your abilities to perform the treatment at home, you can begin home hemodialysis.

You will need to choose a dependable partner. This person will need to be with you and assist you each time you dialyze. It is important for you to choose someone with whom you can work well. It needs to be someone who can stay calm and help you to solve problems when issues arise.

When you dialyze at home, you are in charge of many things the people in the dialysis center would do. You are responsible for setting up and preparing your machine for treatment. You will also have to clean the machine afterwards. You must make sure you have the needed equipment and supplies. After the treatment is finished, you

are also responsible for cleaning up and disposing of the used supplies.

When you perform at home, the dialysis company will deliver your equipment and supplies to you. Sometimes the amount of supplies is quite large. You must have a home with enough space for the equipment and storage of supplies. There must be suitable electrical outlets and plumbing to make the dialysis solution and to drain the machine. The home hemodialysis trainer will check for these requirements.

A dialysis nurse will train you and your partner to insert needles into your access for dialysis. You may also give yourself some injections if necessary, but you will go to the center for other injections and for a monthly check-up.

Even if you dialyze at home, you still have access to the same professional team as someone who dialyzes in a facility. There will be a training nurse available by telephone at all times who can answer questions, assist you in dealing with problems, arrange for technical support of the machine and advise you. It is also likely that a training nurse will visit you at home once a year to advise and observe hemodialysis sessions.

While dialyzing at home in a familiar place can be more comfortable and less of a disruption to your life, this treatment option may cause extra stress for your family members and/or helper who must be present during treatments and sometimes assist with them. To prevent “burn out” of the family member or helper, it is important to focus on taking care of yourself. The home program can also arrange for you to dialyze in-center to allow time-off or vacation for your helper.

### *Short Daily Home Hemodialysis*

Short daily home hemodialysis is a term used to describe more frequent hemodialysis five or six days each week, leaving one or two off days when you do not dialyze. Since you will be receiving more frequent dialysis, your dialysis time per treatment will be less. For example, if you dialyzed three times per week for four hours each time on conventional hemodialysis, you might dialyze six times per week for two hours each time on short daily home hemodialysis. Your doctor and health-care team will determine how many days and the length of treatment that is best for you.

The more hemodialysis treatment a patient receives, the less the amount of fluid that gathers in the body between treatments. Therefore, less fluid is removed during the next

treatment. This usually decreases symptoms often experienced both during and after conventional hemodialysis treatments. Symptoms might include headache, nausea and vomiting, cramping, low blood pressure and tiredness after dialysis. Short daily hemodialysis matches normal kidney function more closely than conventional hemodialysis three times a week. Short daily hemodialysis makes you feel and look better.

Fistulas, grafts and catheters have all been used successfully in short daily hemodialysis patients. To date, it appears that problems such as access failure or infections do not occur more often than they do with dialysis three times a week.

When traveling, you may temporarily have to switch to conventional hemodialysis three times a week in a center. This allows you to travel in the same manner as if you were always on a conventional hemodialysis schedule. When you return home from your trip, you go back to your short daily hemodialysis schedule. Some home dialysis machines allow you to take it with you on your travel trips. Talk to your health care provider if this is of importance to you.

Short daily hemodialysis is a home treatment option. If you are an

in-center patient, you have the option to switch to short daily hemodialysis if it is available and with your doctor's approval. There are certain requirements for people who choose any form of home dialysis. You will need a home helper (preferably a family member or close friend). A home dialysis nurse will help you get set-up at home with your own dialysis machine and train you and your partner.

## NOCTURNAL HEMODIALYSIS

Nocturnal hemodialysis is a form of hemodialysis performed while you sleep. A patient can do it in-center three times per week or at home five to seven times a week. Nocturnal or nightly hemodialysis can offer a very high dose of dialysis because it lasts for a long period. You may experience feeling more energetic, having increased stamina, improved appetites and fewer spells of nausea. There are fewer complaints of itchy, dry skin or "restless leg syndrome." Since dialysis takes place at night during sleeping hours, you can spend more of the daytime at work, leisure or recreation.

To prevent accidental disconnection of the dialysis tubing from the access during the night, your connections



may have to be reinforced with a safety device, like a locking box.

When traveling, you may temporarily have to switch to conventional hemodialysis three times a week in-center. This allows you to travel in the same manner as if you were always on a conventional hemodialysis schedule. When you return home from your trip, you go back to your nocturnal hemodialysis schedule.

### *In-Center*

You can do nocturnal hemodialysis in a dialysis center or hospital unit. Most treatments are three nights a week and last about eight hours. Your doctor will determine the length of treatment that is right for you.

During the dialysis time, you will be in a bed. The unit is in "sleep mode" with the lights off. Nurses and technicians start and end your treatment and watch you while you sleep. Dialysis technicians look after the machine and aides help in the

unit. The dialysis technicians connect your access to the dialysis machine with a secure line that sounds an alarm if it senses any wetness around your access.

It may take time for you to get used to the noises made by the dialysis machine, the nurses walking around and sleeping in the dialysis center.

### *Home*

This treatment is performed five to seven nights a week. The length of the dialysis varies. It can last as long as you want to sleep, anywhere from five to 12 hours, with eight hours being the average. The dialysis treatments take place in your home, eliminating the need to travel to a center to dialyze. All requirements of other home options apply as well.

In some locations, trained hospital staff monitors the dialysis machine using an internet or telephone connection. A member of the dialysis team can observe each stage of your dialysis treatment and is able to evaluate pressures, flows, fluid removal and alarms. The machine will occasionally alert you to any problems. If you do not respond within a reasonable period, the hospital monitor will contact you by phone. You have access via the phone (or clinic appointment) to a nurse, dietitian and social worker to answer questions or to solve

problems you may have with the dialysis treatment.

## **CONCLUSION**

The American Association of Kidney Patients (AAKP) developed this brochure to help patients and their family members, together with their health care team, make educated and informed decisions about the type of treatment available. If you are interested in changing your present treatment, talk to your nephrologist and/or dialysis unit staff.

In evaluating hemodialysis options, please keep in mind:

1. Every patient is unique.
2. Each will have different outcomes and experiences with treatments.
3. Almost all new patients start on conventional in-center hemodialysis.
4. Not all treatment types may be available in all areas; and
5. Some treatment types may not be an option for you.

With the introductions of short daily and nocturnal hemodialysis in the United States, patients have more treatment choices than ever. We hope you found this brochure helpful in explaining your hemodialysis treatment options and remember to talk to your doctor if you have additional questions.

# GLOSSARY

**Access:** General term used to describe the site where the needles for the hemodialysis process are connected to your body.

**Catheter:** A tube that is placed into a central vein in the neck or chest.

**Dialysis:** The process of cleaning wastes from the blood artificially.

**Dialyzer:** A part of the hemodialysis machine that removes wastes and extra fluid from the blood.

**Dietitian:** The renal dietitian can help you make good food choices and understand your blood chemistry results.

**End-stage renal disease (ESRD):** Total chronic kidney failure. When the kidneys fail, the body retains fluid and harmful wastes build up. A person with ESRD needs treatment to replace the work of the failed kidneys.

**Erythropoietin (EPO):** A hormone that working with your kidneys produces causes the bone marrow to produce more red blood cells, and decrease your need for blood transfusion.

**Fistula:** Blood vessel that is formed by linking an artery and a vein under your skin in your arm (or leg).

**Graft:** A piece of artificial vessel that is used for a vascular access. A graft is used to connect your own artery and vein under your skin.

**Hemodialysis:** The use of a machine to filter wastes, salts and fluid from your blood when your kidneys are no longer healthy enough to do this work adequately.

**Kidneys:** The two-bean shaped organs that filter waste from the blood. The kidneys are located near the middle of the back.

**Nephrologist:** A doctor who care for people who have failing kidneys.

**Short Daily Home Hemodialysis:** a home therapy that lasts 1.5 to 3 hours and is performed about five to seven times per week.

**Urea:** A waste product that the body makes when protein is broken down. Levels of urea in the blood are a measure of how well the dialysis treatment is working.

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