

# UNDERSTANDING YOUR HOME HEMODIALYSIS OPTIONS





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## HOW DO THE KIDNEYS FUNCTION?

Most people are born with two kidneys. The kidneys are bean-shaped and about the size of a fist. They are located just below the level of the rib cage deep in the middle of your back. Properly functioning kidneys work 24-hours per day seven days per week. The kidneys are cleaning machines filtering your blood, removing wastes and extra water to make urine. They also help control blood pressure and make hormones your body needs to stay healthy. When the kidneys are damaged, wastes can build up in the body.

Chronic kidney disease (CKD) is described as the gradual loss of kidney function over time. When the kidneys are damaged, they cannot filter blood as they should. This can cause waste to build up in your body which can lead to other health problems. Diabetes and high blood pressure are the most common causes of CKD.

## WHAT HAPPENS DURING KIDNEY FAILURE?

End-stage renal disease (ESRD) or kidney failure is a condition where the kidneys stop working completely. Renal is another term



for kidney, and the terms are used interchangeably. Individuals who suffer from complete renal failure need dialysis or a kidney transplant to survive.

## WHAT IS HEMODIALYSIS?

Hemodialysis is a medical procedure designed to remove wastes, toxins and fluids from blood when the kidneys have failed. It is the most common treatment for kidney failure. Doctors may recommend hemodialysis if your kidneys have failed and can no longer perform the function of removing waste and extra water from the blood to form urine.

## WHAT IS HOME HEMODIALYSIS?

Home hemodialysis, as opposed to in-center hemodialysis, is a growing trend. Home hemodialysis allows patients to dialyze at home instead of going to a dialysis center. Home hemodialysis can be done as either frequent home hemodialysis, nocturnal hemodialysis or conventional home hemodialysis. Most patients who elect home hemodialysis cite many benefits, including the flexibility to have more control over when they get their treatments, being able to spend more time with their family and the ability to continue to work. Home hemodialysis allows patients to learn more about their disease and how it is treated. These patients tend to have more control and say in their health care and this freedom empowers them to maintain their independence and may improve their quality of life.

A patient may elect to dialyze more frequently for longer periods of time at home. The more frequent or longer the dialysis, the better the patient may feel. Home hemodialysis also affords the patient the opportunity to choose

what time of day he will dialyze while in-center dialysis center patients have a set schedule.

## HOME DIALYSIS TRAINING

A patient will go through several weeks of training with a nurse or dialysis technician before beginning a home hemodialysis therapy. A patient selecting home hemodialysis is taking on a lot of responsibility. Home hemodialysis patients must make sure they have the equipment and supplies needed for each treatment. The patient will be in charge of setting up and preparing the dialysis machine for treatment, cleaning the machine and disposing the supplies used during the treatment. A patient who chooses home hemodialysis will still have access to a professionally trained staff at a dialysis center. The patient will visit the dialysis center periodically and will continue to see a doctor once a month. Most companies provide a 24-hour help line the patient can call if there is a problem with the dialysis machine.

There are three home hemodialysis options:

## FREQUENT HOME HEMODIALYSIS

Frequent home hemodialysis (FHHD) is very similar to conventional home dialysis. Instead of dialyzing three days a week, the patient dialyzes five to six days a week for at least two and half to three hours a session. Frequent treatments more closely resemble normal kidney function than three times-a-week treatments. It also means fewer dietary and fluid restrictions as well as fewer medications. A patient and partner will train for several weeks with a nurse or a trained dialysis technician before beginning home treatments. A FHHD patient and their care partner will learn to:

- Setup the dialysis machine
- Place needles in access
- Determine how much fluid to get rid of
- Order supplies
- Take blood pressure
- Recognize potential problems

## TRAVELING

When traveling, the patient may have to temporarily switch to conventional hemodialysis three times a week in a dialysis center. This allows the patient to travel

in the same manner as if he were always on a conventional hemodialysis schedule. When the patient returns home from his trip, he can return to his short daily dialysis schedule. (The NxStage home dialysis machine is small and compacted enough to be checked on an airplane as luggage which will eliminate the need for a patient to switch to in-center hemodialysis while traveling.)

Because the patient is doing dialysis more often, less fluid generally needs to be removed each time. This reduces symptoms like headaches, nausea, cramping and feeling “washed out” after treatment. The patient will also continue to see their doctor on a regular basis for check-ups.

## NOCTURNAL HEMODIALYSIS

Nocturnal hemodialysis is done overnight at home while the patient is sleeping. If nocturnal hemodialysis is done more than three times a week or on alternative nights (four to seven nights a week) it is called nightly hemodialysis. Most patients dialyze anywhere between six to ten hours a night, receiving much more dialysis time. *The more dialysis, the better.*

Nocturnal hemodialysis is twice as long and twice as frequent as conventional hemodialysis. It does a better job of cleaning the blood of wastes, salt and water. It is the closest method to normal kidney function.

Many patients prefer nocturnal dialysis because it keeps them out of the dialysis center and it leaves room to do other activities during the day, including work. It is advised, patients who elect nocturnal hemodialysis have a family member or paid trained worker to help put needles in or if an emergency occurs. Patients are going to sleep through the dialysis. Training can be completed in as little as three weeks and will primarily be aimed at the patient.

Many of the symptoms caused by the lack of kidney function such as nausea, vomiting, shortness of breath, itchiness, dry skin, tiredness, lack of energy disappear. Appetite and ability to taste improve. Sexual drive and function may also improve. Symptoms related to hemodialysis itself also improve dramatically. Muscle cramps, low blood pressure during dialysis and exhaustion after dialysis often disappear. Patients often do not have to rest or go to sleep after dialysis to recover.

There are risks associated with nocturnal dialysis including

disconnecting the dialysis tubing from the access. This can be a problem if it is not dealt with right away (This happens at dialysis units too). Machine alarms as well as proper taping of the needle, and the use of the ‘enuresis alarm’ make the method safe. The enuresis alarm is a moisture sensor that is taped on top of the dialysis needle and alarms if there is even a small blood leak.

## CONVENTIONAL HOME HEMODIALYSIS

Conventional home hemodialysis is similar to hemodialysis done at a dialysis center. Instead of traveling to a center, the patient is able to stay home. Home hemodialysis is usually done three times a week for three to four hours each time, although the prescription can vary from patient to patient. This is the least common form of HHD, since it does not take advantage of the ability to provide more frequent or longer treatments.

## WHAT ARE THE RISKS TO HOME HEMODIALYSIS?

Home hemodialysis is not for everyone. There are some risks to the therapy. The most serious risk is the possibility of an air

## HOME HEMODIALYSIS

### PROS

- More energy after treatment
- Better control blood pressure
- Less stress on the heart
- Fewer diet and fluid restrictions
- Better mental and physical health
- You don't have to drive to and from the clinic
- Better quality of life

### CHALLENGES

- Patients may need a partner to be there for each treatment
- Treatment may cause stress on your family
- Training can take a few weeks which may mean taking time off of work
- You will need to learn to put in the dialysis needles
- You need space to store the machine and supplies

embolism. An air embolism is a condition in which air gets into the blood stream accidentally, preventing the heart from pumping enough blood. There is also the risk of blood loss if a catheter separates. The patient and the care partner will be trained to address these problem if it happens.

## WHO CAN DO HOME HEMODIALYSIS?

Home hemodialysis will not work for everyone. People

who are successful doing home hemodialysis usually are highly motivated who wants to maintain the lifestyle they had before renal failure. The patient and their doctor will decide together if home hemodialysis is the correct therapy option. Doctors usually look to see if a patient encompasses the following qualifications:

- Willingness to train and learn how to do the therapy at home
- Manual dexterity and vision to operate the equipment
- Basic reading and writing skills

- Desire to take greater responsibility for their care

## WHAT IS INVOLVED IN TRAINING?

The patient and care partner will train together with a home dialysis training nurse or social worker. The training is done until the patient and dialysis nurse feels he or she is ready to go home for self-treatment. Training takes between four to six weeks. During training, you will learn to:

- Care for your access
- Take your blood pressure
- Setup your dialysis machine and test the alarms
- Insert your needles
- Monitor your treatments and take notes
- Order supplies
- Recognize problems or potential problems and report them to your nurse or doctor
- Safely dispose of medical wastes

## HOW MUCH IS HOME HEMODIALYSIS AND WHO PAYS FOR IT?

Dialysis services (in-center and home dialysis services) are paid for by an individual's

private insurance plan or Medicare. Medicaid, Veterans Health Benefits and state kidney programs also pay for dialysis.

Medicare will pay for outpatient dialysis treatments, home dialysis equipment and supplies which may include alcohol wipes, sterile drapes and rubber gloves. Medicare also pays for some home support services include visits by trained dialysis staff support and certain drugs.

At the present time, Medicare does not pay for an aid to help with home dialysis, loss of pay during your home dialysis training or transportation to a dialysis facility. If you get your coverage through a Medicare Advantage plan, call the plan and ask them what they cover. Most plans cover what Medicare does not.



# NOTES

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# GLOSSARY

**Chronic Kidney Disease:** A progressive condition, not requiring dialysis, in which the kidneys are not functioning effectively and may be unable to produce red blood cells, to control blood pressure or to rid the body of waste through urination.

**Dialysis:** Process of cleaning wastes from the blood artificially.

**Dialyzer:** A specially designed filter that acts as an artificial kidney.

**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 kidney.

**Hemodialysis:** A procedure that requires a machine to filter waste and fluid from your blood when your kidneys are no longer healthy enough to do the work on their own. Hemodialysis is the most common way to treat permanent kidney failure.

**Kidneys:** Two organs in the lower back that clean waste and poisons from the blood. The kidneys are shaped like two large beans and they act as the body's filter. They also control the level of some chemicals in the blood such as sodium, potassium and phosphate. Kidneys also control blood pressure and regulate red blood cell production.

**Nephrons:** A tiny part of the kidney. Each kidney is made up of about one million nephrons, which are the working units of the kidneys, removing wastes and extra fluid from the blood.

**Urine:** The liquid waste product filtered from the blood by the kidneys.

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