

Home Hemodialysis

A Guide for Patients and Their Families



NATIONAL KIDNEY
FOUNDATION®

Contents

Introduction

How hemodialysis works	5
Home hemodialysis	5
A brief history of home hemodialysis	6
Pros and cons of home hemodialysis	8
Different schedules of home hemodialysis	10
Added benefits of short daily and nocturnal home hemodialysis	12

Deciding if home hemodialysis is right for you

Questions to consider	13
New technology	16
Finding a center that offers home hemodialysis	17
Staying in touch with your dialysis center	18

Preparing for home hemodialysis

Getting an access	19
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Paying for home hemodialysis

Insurance coverage	21
------------------------------	----

Summary

Key points to remember	24
----------------------------------	----

For more information

Other resources	26
True or false quiz	28



Introduction

When you are told that you have kidney failure and need treatment to stay alive, it can be a difficult and challenging time in your life. You may have many concerns. These concerns can be physical, emotional, and financial.

If your kidney disease diagnosis is recent, you may feel overwhelmed, confused, and angry. You may worry about how kidney failure and dialysis will change your future and your quality of life. But there are some important things you can do to help yourself. Learn all you can about your treatment options. Take an active role in decisions about your care.

Kidney failure can be treated with hemodialysis, peritoneal dialysis, or kidney transplantation. Reviewing the pros and cons of each of these options can help you and your healthcare professional decide what is best for you.

This booklet is about a special type of hemodialysis—hemodialysis done at home, or “home hemodialysis.” See page 26 for a list of resources on the other treatment options.

How hemodialysis works

Hemodialysis is a treatment that replaces some of the work of your own kidneys. Hemodialysis clears wastes and extra fluid from your blood. Your blood is cleaned by a part of the dialysis machine called the artificial kidney or dialyzer. For blood to flow through the dialysis machine, you need to have an access, or entrance, to your bloodstream. This is created by minor surgery, usually to an arm. (See “Getting an access” on page 19.) At each dialysis treatment, two needles are placed into the dialysis access site in your arm; one needle carries your blood through sterile tubing to the artificial kidney (dialyzer), and your cleaned blood is returned to your body through the second needle.

Home hemodialysis

Hemodialysis can be done at home. When you do home hemodialysis, you may be better able to fit your treatments into your daily schedule. If you work, home hemodialysis may make your treatments easier to plan.

Studies show that the more you know about your treatment and the more you do on your own, the better you are likely to feel on dialysis. If your doctor recommended hemodialysis as the best treatment option for you, hemodialysis at home may be a good choice.

A brief history of home hemodialysis

Home hemodialysis began in the United States in 1964. By 1973, when Medicare first covered dialysis costs, 40 percent of patients received their hemodialysis at home. With the start of Medicare payments for dialysis, more centers began to open.

In 2008, new regulations were established by the Centers for Medicare and Medicaid Services (CMS), the government agency responsible for Medicare. Now, dialysis centers are required to inform patients about the option of home dialysis. Your dialysis team members must provide you with a list of places that will train you how to do home hemodialysis. The regulations require that people with severe kidney disease and kidney failure receive information about all possible treatment options.

Medicare covers up to 80% of the cost of home hemodialysis, just as they do for dialysis in a hospital or other treatment center. Medicare may help cover the cost of minor plumbing or electrical modifications to your home for home hemodialysis.



Pros and cons of home hemodialysis

Different ways of scheduling home hemodialysis treatments are possible (see page 9). All share some important pros and cons compared with in-center hemodialysis:

PROS of Home Hemodialysis

Easier to fit into your daily schedule

Easier to keep working or attend school

Convenience and cost savings of not having to travel to a dialysis center three times a week

Independence and being in control of your treatments

Likelihood of a better health outcome over time

Comfort and privacy of being in your own home during treatment

Having access to telephone, family members, and visitors during treatment

Being able to eat and drink if you choose

Your access may last longer. (See “Getting an access” on page 19.)

CONS of Home Hemodialysis

Initial fears about duties and caring for the dialysis machine

Training for home hemodialysis is not offered by all dialysis centers

More space is needed in your home for equipment and supplies

Training may take three to eight weeks or longer, with three- to five-hour training sessions per week

Some plumbing and wiring changes in your home may be necessary, but newer machines use standard household outlets

Electric, gas, and water bills may increase slightly

Some new machines are portable, but you will have to find a dialysis center for support when traveling

Less social interaction compared with going to the dialysis center



Different schedules of home hemodialysis

You can do hemodialysis at home using one of three types of schedules. Whichever schedule you choose, you will be trained to perform dialysis safely and to handle any problems that may arise. Everyone is different and training time differs between people, but usually takes three to eight weeks.

- 1. Conventional home hemodialysis:** You perform hemodialysis three times a week for three to four hours or longer each time.
- 2. Short daily home hemodialysis:** This schedule calls for hemodialysis five to seven times a week, using machines designed for short, daily home treatment. Treatments usually last about two hours each. Because you are receiving dialysis more often, less fluid needs to be removed from

your blood each time. This reduces recovery symptoms like headaches, nausea, cramping, and feeling “washed out” after your treatment.

- 3. Nocturnal (nighttime) home hemodialysis:** These are longer, slower treatments done at night while you sleep. You may receive this kind of dialysis six nights a week or every other night. It depends on what your doctor recommends for you.

Treatments usually last about six to eight hours. Some centers monitor your treatments by having information from your dialysis machine sent to a staffed location via telephone modem or the Internet. More hours of dialysis each week can increase waste removal from your blood.

It’s also possible to combine daily and nocturnal home hemodialysis. Whether you can combine treatments depends on your needs, your health, and your dialysis machine.

Whatever treatment schedule you choose, it’s important to know if you are receiving the right amount of dialysis. Blood tests are done regularly during the year to check on the amount of dialysis you receive and to help decide if any adjustments to your treatment plan are needed. For more information on how the amount of dialysis is measured, speak with your doctor and your dialysis care team.

Added benefits of short daily and nocturnal home hemodialysis

Having frequent dialysis is closer to how your kidneys functioned when they were healthy. Many reports indicate that people who use short daily and nocturnal home hemodialysis:

- Take less medication to control high blood pressure and anemia (low red blood cell count)
- Take less medication to keep high blood phosphorus under control
- Have improved blood pressure, nerve damage, and symptoms of restless leg syndrome
- Feel better during dialysis and less “washed out” after dialysis
- Have fewer limits on what they can eat and drink
- Have more energy
- Sleep better
- Have fewer and shorter hospital stays
- Have a better quality of life
- Live longer

“With daily home hemodialysis, you don’t have the swings in your blood chemistries and fluids like you do when you don’t dialyze every day, so you feel a lot better. Home dialysis is for people who want to be in control of the process and be at home.”

—David J., patient on daily home hemodialysis



Deciding if home hemodialysis is right for you

Home hemodialysis is not a good fit for everyone. You will need to find a dialysis center that offers training and support in home hemodialysis. You must also be willing to be responsible for your own treatment. The following are questions you may want to discuss with your doctor, your employer, and healthcare team.

Questions to consider

YOUR JOB:

- Can I keep my job and do home hemodialysis?
- Can I get paid time off to train for home hemodialysis?
- If I quit working, how long can I keep my health insurance? Can I get other health insurance?
- How will this change affect my family and me?



FINDING A HOME HEMODIALYSIS PROGRAM

- Does my local dialysis center offer home hemodialysis training? If not, where is the closest center with training?
- Am I willing to change centers, or even doctors, to get home hemodialysis?
- How far would I be willing to go for training that takes several weeks and for clinic visits every four to six weeks?
- How long does training take? What is the training schedule?
- How will I learn to put the needles in my arm for hemodialysis?
- Who will be my trainer? Can I make an appointment to talk with them?

CHANGES AT HOME

- What will it take to install a dialysis machine in my house?
- Will my landlord allow me to put a dialysis machine in my apartment?
- Where can I put the equipment and supplies?
- What are the rules about the disposal of medical waste in my area?
- How much will my insurance pay for training and home hemodialysis supplies?

COSTS

- What out-of-pocket costs will I need to pay?
- Will insurance pay for any necessary changes in my home?
- How much will my electric, gas, and water bills increase?

WORKING WITH THE DIALYSIS CENTER

- How will the dialysis center staff support me once I'm doing treatment at home?
- Who repairs my machine when it breaks? How long do repairs usually take?
- Where can I get dialysis if my machine is broken?
- How often do I need to come back to the center for clinic visits?
- Is transportation assistance available if I need a ride to the clinic?
- Can I see my local doctor monthly, so I won't have to come to the clinic as often?

LONG-TERM CONCERNS:

- What treatment does my kidney doctor believe is best? Why?
- Will I do better long-term with home hemodialysis?

New technology

More user-friendly dialysis machines are being developed for home use. These machines are easier to set up, clean, and disinfect and have easy-to-use alarms to alert you to a problem. With some newer machines, there are fewer supplies to store. If you and your doctor think home hemodialysis is a good choice for you, ask your dialysis training staff about the best equipment for you.

“With daily dialysis, I’ve noticed that I have increased energy, better sleep, and improved concentration at work. People shouldn’t have to live to dialyze. Daily home hemodialysis on your own schedule makes it possible to live life as best you can.”

Bill P., a patient on daily home hemodialysis



Finding a center that offers home hemodialysis

Your healthcare professional will help you find a dialysis center that has a home hemodialysis program certified by CMS. If your center does not offer home hemodialysis, see page 26 for websites that can help you find centers that offer home hemodialysis.

Visit the center. Talk with the home training nurse and other staff. Ask to speak to patients who do home dialysis. Two things will ensure your success:

1. a dialysis center and nurse willing to train you and follow your care; and
2. your commitment to learn and do hemodialysis at home.



Staying in touch with your dialysis center

You will need to visit your dialysis center about once a month for a check-up, lab tests, and to see your kidney doctor, nurse, dietitian, and social worker. You may also need to receive some of your medicines, such as intravenous iron, at your center. Between visits to the center, your healthcare team is there to help. If you have a question about your diet or treatment, call your center.

When you go home after your training, your center will give you phone numbers that you can call if you have questions. Some centers monitor care over the Internet. Keep a list of important phone numbers in a handy place (see page 30). You can use the chart at the end of this booklet to get started.



Preparing for home hemodialysis

Getting an access

To do any type of hemodialysis, you need to have a way to gain access to your bloodstream. Your access is created by a doctor called a vascular surgeon. There are three types of access:

Fistula: This is the first choice for an access for most people. It has fewer problems and lasts the longest, especially if you are the only person inserting the needles. A fistula involves surgery to connect an artery and a nearby vein, usually in your arm. Have your fistula created early, so it has time to heal and is ready to use when you need to start treatment.

Graft: If the surgeon evaluates your blood vessels and a fistula is not possible, a graft is the second best access choice for hemodialysis. A graft also requires surgery. It is made by connecting an artery and nearby vein with a small, soft tube made of synthetic material. However, a graft is more prone to infection and clotting than a fistula. If that happens, you may need treatment or more surgery to fix or replace the graft.

Catheter: Another way to access your bloodstream is to have a plastic tube called a catheter put into a large vein in your neck or chest. Catheters are only used long-term if no other access can be made. Catheters are more prone to infections and clots. If you have a catheter, you must follow strict catheter care instructions to stay healthy.

You will learn how to:

- Set up your equipment in your home
- Insert and remove your needles
- Figure out how much fluid to remove from your blood during dialysis
- Use and care for your dialysis machine and water system (if needed)
- Notice and handle medical and equipment problems that may occur
- Store and order your supplies
- Check your blood pressure



Paying for home hemodialysis

Insurance coverage

The social worker at your dialysis center should give you information about coverage for home hemodialysis and other costs that may be related to receiving your treatment at home. Medicare pays for part of the cost of home hemodialysis and training. Medicare is not just for people who are 65 and older. The program also helps Americans and legal residents of all ages who need dialysis or a kidney transplant and qualify for coverage.

Other sources that help pay for dialysis include:

- Private insurance
- Some managed care organizations
- Medicaid
- Veterans Administration
- Indian Health Service (IHS)



If you have an employer group health plan, it will be the primary coverage for the first 30 months of your treatment, with Medicare as your secondary insurer. After those first 30 months, Medicare will become your primary insurance.

Your home training nurse will tell you if your home will need plumbing or wiring changes for home hemodialysis. Some of these costs may be covered by private insurance or your center. You may be given the option of receiving your dialysis supplies from your dialysis center or dealing directly with a supply company. You can expect your monthly water and electric bills to increase a little. Speak to your social worker if you have additional questions or concerns about coverage for home hemodialysis.

“ I started feeling stronger and more energetic. I had less bone pain, so I was able to walk more and started exercising regularly. I stopped taking some medications and I generally feel good. With home dialysis, you do everything from setting up the machine, connecting and disconnecting yourself to the machine, and disinfecting the machine afterwards. But taken as a whole, the positives far outweigh the negatives.”

Henry E., a patient on nocturnal home hemodialysis

Summary

Key points to remember

- Pros of home hemodialysis
 - » It's easier to fit into your daily or weekly schedule.
 - » There are fewer restrictions on what you can eat and drink, especially for those doing daily or nocturnal treatment.
 - » You are in control of your own treatment and have more independence.
 - » Your health over time is likely to be better.
 - » Many patients say they feel better and have more energy.
- Three basic types of hemodialysis can be performed at home:
 - » Conventional—three times a week for three to four hours or longer each time
 - » Short daily—five to seven times a week for about two hours each time
 - » Nocturnal—three to six nights a week for six to eight hours each time.
- Talk to your healthcare practitioner about whether home hemodialysis would be a good treatment choice for you. They can also help you choose the best type of home hemodialysis for your needs.
- To perform hemodialysis, you will need to have a permanent access to your blood created. Doctors recommend a fistula for most patients.

- Both you and a care partner (in most cases) will need to be trained to do home hemodialysis. Your care partner may be a family member, friend, or a healthcare worker whom you hire to assist you.
- Medicare, private insurance, and several other sources pay for home hemodialysis. Speak to your social worker if you have any questions.
- Even though you will be at home, you still need to keep in touch with your dialysis center for monthly checkups, questions, and in case of problems.



For more information

If you have questions, speak to your doctor and other members of your healthcare team. You may also call the NKF Cares Patient Help Line toll-free at **855.NKF.CARES** (855.653.2273) or email nkfcares@kidney.org

Other resources

DIALYSIS FACILITY COMPARE

Find information about dialysis centers that offer home hemodialysis training programs.

[medicare.gov](https://www.medicare.gov)

HOME DIALYSIS CENTRAL

Learn about home dialysis options, talk to other patients, find out if a dialysis center near you offers a home hemodialysis program.

[homedialysis.org](https://www.homedialysis.org)

MEDICARE

Read a patient booklet about coverage for kidney failure treatment.

[medicare.gov/publications/pubs/pdf/10128.pdf](https://www.medicare.gov/publications/pubs/pdf/10128.pdf)

ESRD NETWORKS

Find out who oversees dialysis quality and collects data, and learn about your own Network at the Forum of ESRD Networks website.

[esrdnetworks.org](https://www.esrdnetworks.org)

AMERICAN ASSOCIATION OF KIDNEY PATIENTS (AAKP)

Learn about kidney disease and treatment.

[aakp.org](https://www.aakp.org)

U.S. NATIONAL KIDNEY AND UROLOGIC DISEASES INFORMATION CLEARINGHOUSE

Download or order booklets on kidney disease.

kidney.niddk.nih.gov/kudiseases/pubs/kidneyfailure/index.htm

RENALWEB

Find resources on home hemodialysis.

renalweb.com/topics/homedialysis/homedialysis.htm

THE NATIONAL KIDNEY FOUNDATION'S PATIENT & FAMILY COUNCIL

Join the National Kidney Foundation's Patient & Family Council, the largest patient organization dedicated to issues affecting patients with chronic kidney disease and their families. Membership in the Council is free.

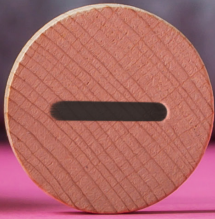
kidney.org/patients or call the NKF Cares Patient Help Line toll-free at **855.NKF.CARES** (855.653.2273).



True or false quiz

Take this quiz and see how much you learned. Check your answers at the end.

1. Conventional home hemodialysis is done every day.
 True False
2. Daily home hemodialysis treatments last about two hours each.
 True False
3. Nocturnal home hemodialysis is done while you sleep.
 True False
4. With home hemodialysis, your diet may be more restricted.
 True False
5. Training for home hemodialysis takes about a year.
 True False



6. A fistula is the preferred type of access for hemodialysis.
 True False

7. In hemodialysis, wastes and excess fluid are removed from your blood by a filter, called a dialyzer.
 True False

8. People on home hemodialysis visit the dialysis center once every six months for a checkup.
 True False

9. With home hemodialysis, your electric and water bills will probably be lower.
 True False

Answers

1=F 2=T 3=T 4=F 5=F 6=T 7=T 8=F 9=F

IMPORTANT NAMES AND PHONE NUMBERS

KIDNEY DOCTOR:

name: _____

phone: _____

HOME TRAINING NURSE:

name: _____

phone: _____

SOCIAL WORKER:

name: _____

phone: _____

DIETITIAN:

name: _____

phone: _____

MACHINE TECHNICIAN:

name: _____

phone: _____

SUPPLY COMPANY:

name: _____

phone: _____

24-HOUR CONTACT:

name: _____

phone: _____

Setting a standard for care

The National Kidney Foundation, through its *Kidney Disease Outcomes Quality Initiative* (KDOQI®), defines stages of kidney disease and offers guidelines that help your doctor and healthcare team make important decisions about your medical treatment.

The information in this booklet is based on those recommended guidelines.



The information contained in this publication is based on current data and expert guidance available at the time of publication. The information is intended to help patients become aware of their disease and its management. This publication is not intended to set out a preferred standard of care and should not be construed as one. Neither should the information be interpreted as prescribing an exclusive course of management. Patients should always consult with their healthcare providers regarding decisions about their individual plan of care.



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The National Kidney Foundation is revolutionizing the fight to save lives by eliminating preventable kidney disease, accelerating innovation for the dignity of the patient experience, and dismantling structural inequities in kidney care, dialysis, and transplantation.

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