



Kidney Failure CHOOSING A TREATMENT THAT'S RIGHT FOR YOU



U.S. Department
of Health and
Human Services

NIDDK NATIONAL INSTITUTE OF
DIABETES AND DIGESTIVE
AND KIDNEY DISEASES

NATIONAL INSTITUTES OF HEALTH
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Information Clearinghouse

Kidney Failure

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Introduction

Your kidneys filter wastes from your blood and regulate other functions of your body. When your kidneys fail, you need treatment to replace the work your kidneys normally perform.

Developing kidney failure means you have some decisions to make about your treatment. You may choose to forgo treatment. If you choose to receive treatment, your choices include hemodialysis, which requires a machine used to filter your blood outside your body; peritoneal dialysis, which uses the lining of your belly to filter your blood inside the body; and kidney transplantation, in which a new kidney is placed in your body. Each treatment has advantages and disadvantages. Your choice of treatment will have a big impact on your day-to-day lifestyle, such as being able to keep a job if you are working. You are the only one who can decide what means most to you. Reading this booklet is a good way to learn about your options so you can make an informed choice. And, if you find that your choice is not a good fit for your life, you can change treatments. With the help of your health care team, family, and friends, you can lead a full, active life.



When Your Kidneys Fail

Healthy kidneys clean your blood by removing excess fluid, minerals, and wastes. They also make hormones that keep your bones strong and your blood healthy. When your kidneys fail, harmful wastes build up in your body, your blood pressure may rise, and your body may retain excess fluid and not make enough red blood cells. When this happens, you need treatment to replace the work of your failed kidneys.

Treatment Choice: Hemodialysis

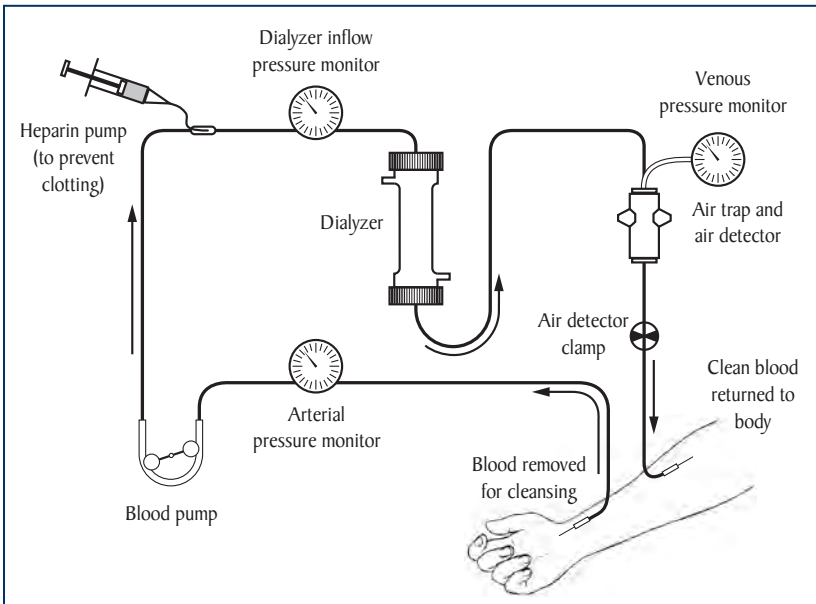
Purpose

Hemodialysis cleans and filters your blood using a machine to temporarily rid your body of harmful wastes, extra salt, and extra water. Hemodialysis helps control blood pressure and helps your body keep the proper balance of important chemicals such as potassium, sodium, calcium, and bicarbonate.

Dialysis can replace part of the function of your kidneys. Diet, medications, and fluid limits are often needed as well. Your diet, fluids, and the number of medications you need will depend on which treatment you choose.

How Hemodialysis Works

Hemodialysis uses a special filter called a dialyzer that functions as an artificial kidney to clean your blood. The dialyzer is a canister connected to the hemodialysis machine.



Hemodialysis.

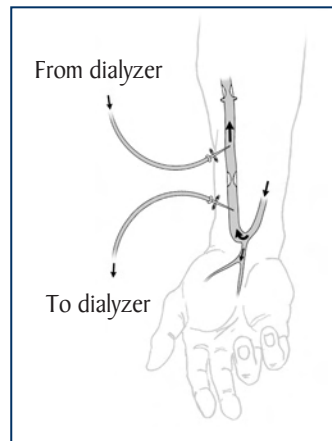
During treatment, your blood travels through tubes into the dialyzer, which filters out wastes, extra salt, and extra water. Then the cleaned blood flows through another set of tubes back into your body. The hemodialysis machine monitors blood flow and removes wastes from the dialyzer.

Hemodialysis is usually done three times a week. Each treatment lasts from 3 to 5 or more hours. During treatment, you can read, write, sleep, talk, or watch TV.

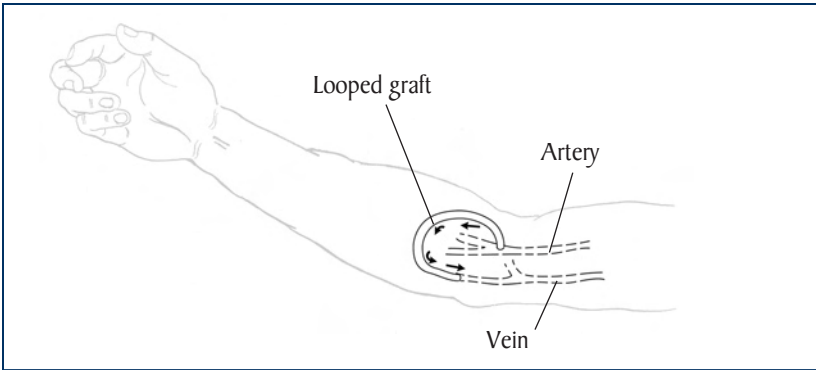
Getting Ready

Several months before your first hemodialysis treatment, an access to your bloodstream will need to be created. You may need to stay overnight in the hospital, but many patients have their access created on an outpatient basis. This access provides an efficient way for blood to be carried from your body to the dialyzer and back without causing discomfort. The two main types of access are a fistula and a graft.

- A surgeon makes a fistula by using your own blood vessels; an artery is connected directly to a vein, usually in your forearm. The increased blood flow makes the vein grow larger and stronger so it can be used for repeated needle insertions. This kind of access is the preferred type. It may take several weeks to be ready for use.
- A graft connects an artery to a vein by using a synthetic tube. It doesn't need to develop as a fistula does, so it can be used sooner after placement. But a graft is more likely to have problems with infection and clotting.



Arteriovenous fistula.

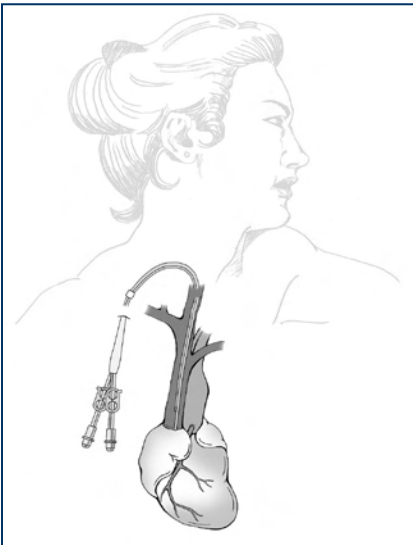


Graft.

Before dialysis, needles are placed into the access to draw out the blood.

If your kidney disease has progressed quickly, you may not have time to get a permanent vascular access before you start hemodialysis treatments. You may need to use a catheter—a small, soft tube inserted into a vein in your neck, chest, or

leg near the groin—as a temporary access. Some people use a catheter for long-term access as well. Catheters that will be needed for more than about 3 weeks are designed to be placed under the skin to increase comfort and reduce complications.



Catheter for temporary access.

For more information about vascular access, see the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) fact sheet *Vascular Access for Hemodialysis*.

Who Performs Hemodialysis

Hemodialysis is most often done in a dialysis center by patient care technicians who are supervised by nurses. Medicare pays for three hemodialysis treatments each week. If you choose in-center treatment, you will have a fixed time slot three times per week on Monday-Wednesday-Friday or Tuesday-Thursday-Saturday. If you do not get the time slot you want at first, you can ask to be put on a waiting list for the time slot you prefer. For a special event, you may be able to trade times with someone else. You will want to think about the dialysis schedule if you work or have children to care for. Some centers offer in-center nocturnal dialysis. This treatment is done for a longer period at night, while you sleep at the center. Getting more dialysis means fewer diet and fluid limits, and this treatment leaves your days free for work, child care, hobbies, or other tasks.

You can choose to learn how to do your own hemodialysis treatments at home. When you are the only patient, it is possible to do longer or more frequent dialysis, which comes closer to replacing the steady work healthy kidneys do. Daily home hemodialysis (DHHD) is done 5 to 7 days per week for 2 to 3 hours at a time, and you set the schedule. If your health plan will pay for more than three treatments, you might do the short treatments in the mornings or in the evenings. Nocturnal home hemodialysis (NHHD) is done 3 to 6 nights per week while you sleep. Either DHHD or NHHD will allow a more normal diet and fluids, with fewer blood pressure and other medications. Most programs want people doing hemodialysis at home to have a trained partner in the home while they do treatments. Learning to do home hemodialysis is like learning to drive a car—it takes a few weeks and is scary at first, but then it becomes routine. The dialysis center provides the machine and training, plus 24-hour support if you have a question or problem. New machines for home dialysis are smaller and easier to use than in-center ones.

You have a choice of dialysis centers, and most towns have more than one center to choose from. You can visit a center to see if it has the treatments you want or the time slot you need. Some centers will let you use a laptop or cell phone or have visitors, and others will not. Medicare has a list of all U.S. centers on its Dialysis Facility Compare website (www.medicare.gov/dialysis) with quality ratings for each. Your health plan may have a list of centers you can use. If you choose in-center treatment, you may want the center to be close to your home to reduce your travel time. If you do a home treatment, once you are trained you only need to visit the center once a month. So, the center can be as far away as you are willing to travel once a month.

Possible Complications

Vascular access problems are the most common reason for hospitalization among people on hemodialysis. Common problems include infection, blockage from clotting, and poor blood flow. These problems can keep your treatments from working. You may need to undergo repeated surgeries in order to get a properly functioning access.

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

You'll probably need a few months to adjust to hemodialysis. Side effects can often be treated quickly and easily, so you should always report them to your doctor and dialysis staff. You can avoid many side effects if you follow a proper diet, limit your liquid intake, and take your medicines as directed.

Diet for Hemodialysis

Hemodialysis and a proper diet help reduce the wastes that build up in your blood. A dietitian is available at all dialysis centers to help you plan meals according to your doctor's orders. When choosing foods, remember to

- eat balanced amounts of high-protein foods such as meat, chicken, and fish.
- control the amount of potassium you eat. Potassium is a mineral found in salt substitutes; some fruits, such as bananas and oranges; vegetables; chocolate; and nuts. **Too much potassium can be dangerous to your heart.**
- limit how much you drink. When your kidneys aren't working, water builds up quickly in your body. Too much liquid makes your tissues swell and can lead to high blood pressure, heart trouble, and cramps and low blood pressure during dialysis.
- avoid salt. Salty foods make you thirsty and make your body hold water.
- limit foods such as milk, cheese, nuts, dried beans, and dark colas. These foods contain large amounts of the mineral phosphorus. Too much phosphorus in your blood causes calcium to be pulled from your bones, which makes them weak and brittle and can cause arthritis. To prevent bone problems, your doctor may give you special medicines, which you must take with meals every day as directed.

For more information about choosing the right foods, see the NIDDK booklet *Eat Right to Feel Right on Hemodialysis*.

Pros and Cons

Each person responds differently to similar situations. What may be a negative factor for one person may be a positive one for another. See a list of the general advantages and disadvantages of in-center and home hemodialysis below.

In-Center Hemodialysis

Pros

- + Facilities are widely available.
- + Trained professionals are with you at all times.
- + You can get to know other patients.
- + You don't have to have a partner or keep equipment in your home.

Cons

- Treatments are scheduled by the center and are relatively fixed.
- You must travel to the center for treatment.
- This treatment has the strictest diet and fluid limits of all.
- You will need to take—and pay for—more medications.
- You may have more frequent ups and downs in how you feel from day to day.
- It may take a few hours to feel better after a treatment.

Home Hemodialysis

Pros

- + You can do it at the times 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.
- + Newer machines require less space.
- + You will have fewer ups and downs in how you feel from day to day.
- + Home hemodialysis is more work-friendly than in-center treatment.
- + Your diet and fluids will be much closer to normal.
- + You can take along new, portable machines on car trips, in campers, or on airplanes.
- + You can spend more time with your loved ones.

Cons

- You must have a partner.
- Helping with treatments may be stressful to your family.
- You and your partner need training.
- You need space for storing the machine and supplies at home.
- You may need to take a leave of absence from work to complete training.
- You will need to learn to put in the dialysis needles.
- Daily and nocturnal home hemodialysis are not yet offered in all locations.

Working with Your Health Care Team

Questions you may want to ask:

- Is hemodialysis the best treatment choice for me? Why?
- If I'm treated at a center, can I go to the center of my choice?
- What should I look for in a dialysis center?
- Will my kidney doctor see me at dialysis?
- What does hemodialysis feel like?
- What is self-care dialysis?
- Is home hemodialysis available in my area? How long does it take to learn? 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?
- How much should I exercise?
- Who will be on my health care team? How can these people help me?
- With whom can I talk about finances, sexuality, or family concerns?
- How/where can I talk with other people who have faced this decision?

For more information about hemodialysis, see the NIDDK booklet *Treatment Methods for Kidney Failure: Hemodialysis*. Or see the chart on pages 22 and 23 that summarizes three treatment options.

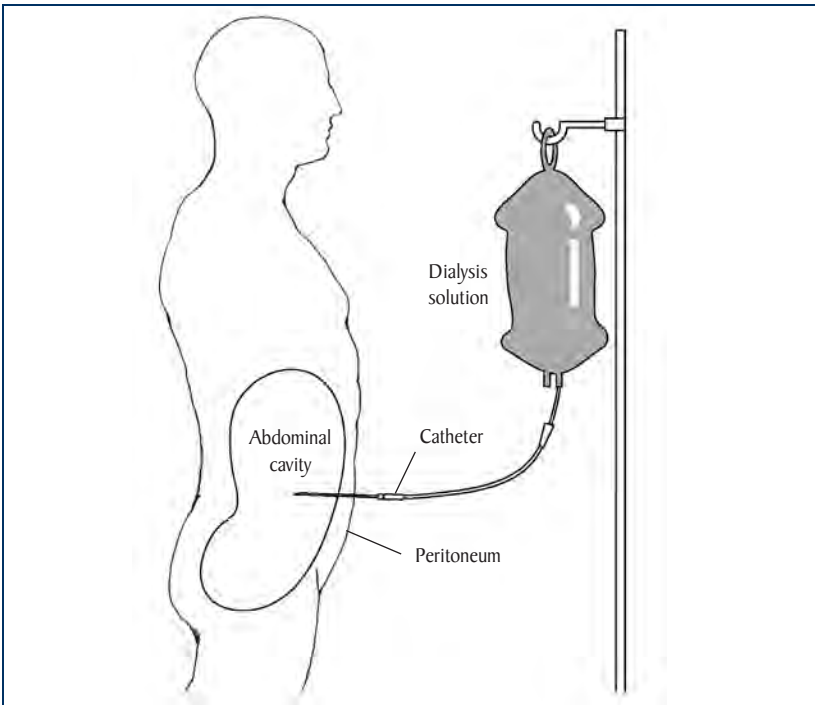
Treatment Choice: Peritoneal Dialysis

Purpose

Peritoneal dialysis is another procedure that removes wastes, chemicals, and extra water from your body. This type of dialysis uses the lining of your abdomen, or belly, to filter your blood. This lining is called the peritoneal membrane and acts as the artificial kidney.

How Peritoneal Dialysis Works

A mixture of minerals and sugar dissolved in water, called dialysis solution, travels through a catheter into your belly. The sugar—called dextrose—draws wastes, chemicals, and extra water from the tiny blood vessels in your peritoneal



Peritoneal dialysis.

membrane into the dialysis solution. After several hours, the used solution is drained from your abdomen through the tube, taking the wastes from your blood with it. Then your abdomen is refilled with fresh dialysis solution, and the cycle is repeated. The process of draining and refilling is called an exchange.

Getting Ready

Before your first treatment, a surgeon places a catheter into your abdomen or chest. The catheter tends to work better if there is adequate time—usually from 10 days to 2 or 3 weeks—for the insertion site to heal. Planning your dialysis access can improve treatment success. This catheter stays there permanently to help transport the dialysis solution to and from your abdomen.

Types of Peritoneal Dialysis

Three types of peritoneal dialysis are available.

- **Continuous Ambulatory Peritoneal Dialysis (CAPD)**
CAPD requires no machine and can be done in any clean, well-lit place. With CAPD, your blood is always being cleaned. The dialysis solution passes from a plastic bag through the catheter and into your abdomen, where it stays for several hours with the catheter sealed. The time period that dialysis solution is in your abdomen is called the dwell time. Next, you drain the dialysis solution into an empty bag for disposal. You then refill your abdomen with fresh dialysis solution so the cleaning process can begin again. With CAPD, the dialysis solution stays in your abdomen for a dwell time of 4 to 6 hours, or more. The process of draining the used dialysis solution and replacing it with fresh solution takes about 30 to 40 minutes. Most people change the dialysis solution at least four times a day and sleep with solution in their abdomens at night. With CAPD, it's not

necessary to wake up and perform dialysis tasks during the night.

- **Continuous Cycler-assisted Peritoneal Dialysis (CCPD)**
CCPD uses a machine called a cycler to fill and empty your abdomen three to five times during the night while you sleep. In the morning, you begin one exchange with a dwell time that lasts the entire day. You may do an additional exchange in the middle of the afternoon without the cycler to increase the amount of waste removed and to reduce the amount of fluid left behind in your body.
- **Combination of CAPD and CCPD**
If you weigh more than 175 pounds or if your peritoneum filters wastes slowly, you may need a combination of CAPD and CCPD to get the right dialysis dose. For example, some people use a cycler at night but also perform one exchange during the day. Others do four exchanges during the day and use a minicycler to perform one or more exchanges during the night. You'll work with your health care team to determine the best schedule for you.

Who Performs Peritoneal Dialysis

Both types of peritoneal dialysis are usually performed by the patient without help from a partner. CAPD is a form of self-treatment that needs no machine. However, with CCPD, you need a machine to drain and refill your abdomen.

Possible Complications

The most common problem with peritoneal dialysis is peritonitis, a serious abdominal infection. This infection can occur if the opening where the catheter enters your body becomes infected or if contamination occurs as the catheter is connected or disconnected from the bags. Infection is less

common in presternal catheters, which are placed in the chest. Peritonitis requires antibiotic treatment by your doctor.

To avoid peritonitis, you must be careful to follow procedures exactly and learn to recognize the early signs of peritonitis, which include fever, unusual color or cloudiness of the used fluid, and redness or pain around the catheter. Report these signs to your doctor or nurse immediately so that peritonitis can be treated quickly to avoid additional problems.

Diet for Peritoneal Dialysis

A peritoneal dialysis diet is slightly different from an in-center hemodialysis diet.

- You'll still need to limit salt and liquids, but you may be able to have more of each, compared with in-center hemodialysis.
- You must eat more protein.
- You may have different restrictions on potassium. You may even need to eat high-potassium foods.
- You may need to cut back on the number of calories you eat because there are calories in the dialysis fluid that may cause you to gain weight.

Your doctor and a dietitian who specializes in helping people with kidney failure will be able to help you plan your meals.

Pros and Cons

Each type of peritoneal dialysis has advantages and disadvantages.

Peritoneal Dialysis

CAPD

Pros

- + You can do it alone.
- + You can do it at times you choose as long as you perform the required number of exchanges each day.
- + You can do it in many locations.
- + You don't need a machine.
- + You won't have the ups and downs that many patients on hemodialysis feel.
- + You don't need to travel to a center three times a week.

Cons

- It can disrupt your daily schedule.
- It is a continuous treatment, and all exchanges must be performed 7 days a week.

CCPD

Pros

- + You can do it at night, mainly while you sleep.
- + You are free from performing exchanges during the day.

Cons

- You need a machine.
- Your movement at night is limited by your connection to the cyclor.

Working with Your Health Care Team

Questions you may want to ask:

- Is peritoneal dialysis the best treatment choice for me? Why? If yes, which type is best?
- How long will it take me to learn how to do peritoneal dialysis?
- What does peritoneal dialysis feel like?
- How will peritoneal dialysis affect my blood pressure?
- How will I know if I have peritonitis? How is it treated?
- As a peritoneal dialysis patient, will I be able to continue working?
- How much should I exercise?
- Where do I store supplies?
- How often do I see my doctor?
- Who will be on my health care team? How can these people help me?
- Whom do I contact with problems?
- With whom can I talk about finances, sexuality, or family concerns?
- How/where can I talk with other people who have faced this decision?

For more information about peritoneal dialysis, see the NIDDK booklet *Treatment Methods for Kidney Failure: Peritoneal Dialysis*. Or see the chart on pages 22 and 23 that summarizes three treatment options.

Dialysis Is Not a Cure

Hemodialysis and peritoneal dialysis are treatments that help replace the work your kidneys did. These treatments help you feel better and live longer, but they don't cure kidney failure. Although patients with kidney failure are now living longer than ever, over the years kidney disease can cause problems such as heart disease, bone disease, arthritis, nerve damage, infertility, and malnutrition. These problems won't go away with dialysis, but doctors now have new and better ways to prevent or treat them. You should discuss these complications and their treatments with your doctor.

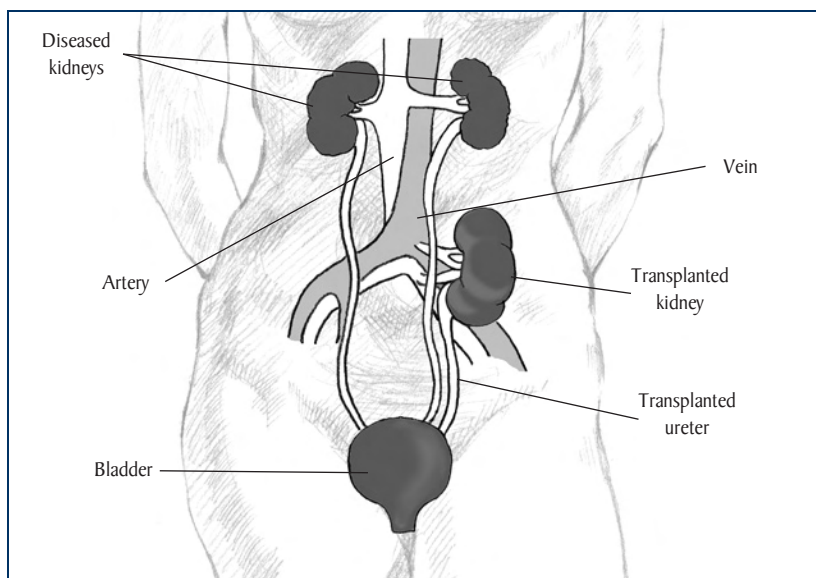
Treatment Choice: Kidney Transplantation

Purpose

Kidney transplantation surgically places a healthy kidney from another person into your body. The donated kidney does enough of the work that your two failed kidneys used to do to keep you healthy and symptom free.

How Kidney Transplantation Works

A surgeon places the new kidney inside your lower abdomen and connects the artery and vein of the new kidney to your artery and vein. Your blood flows through the donated kidney, which makes urine, just like your own kidneys did when they were healthy. The new kidney may start working right away or may take up to a few weeks to make urine. Unless your own kidneys are causing infection or high blood pressure, they are left in place.



Kidney transplantation.

Getting Ready

The transplantation process has many steps. First, talk with your doctor because transplantation isn't for everyone. You could have a condition that would make transplantation dangerous or unlikely to succeed.

You may receive a kidney from a deceased donor—a person who has recently died—or from a living donor. A living donor may be related or unrelated—usually a spouse or a friend. If you don't have a living donor, you're placed on a waiting list for a deceased donor kidney. The wait for a deceased donor kidney can be several years.

The transplant team considers three factors in matching kidneys with potential recipients. These factors help predict whether your body's immune system will accept the new kidney or reject it.

- **Blood type.** Your blood type (A, B, AB, or O) must be compatible with the donor's. Blood type is the most important matching factor.
- **Human leukocyte antigens (HLAs).** Your cells carry six important HLAs, three inherited from each parent. Family members are most likely to have a complete match. You may still receive a kidney if the HLAs aren't a complete match as long as your blood type is compatible with the organ donor's and other tests show no problems with matching.
- **Cross-matching antigens.** The last test before implanting an organ is the cross-match. A small sample of your blood will be mixed with a sample of the organ donor's blood in a tube to see if there's a reaction. If no reaction occurs, the result is called a negative cross-match, and the transplant operation can proceed.

The Time Kidney Transplantation Takes

How long you'll have to wait for a kidney varies. Because there aren't enough deceased donors for every person who needs a transplant, you must be placed on a waiting list. However, if a voluntary donor gives you a kidney, the transplant can be scheduled as soon as you're both ready. Avoiding the long wait is a major advantage of living donation.

The surgery takes 3 to 4 hours. The usual hospital stay is about a week. After you leave the hospital, you'll have regular follow-up visits.

In a living donation, the donor will probably stay in the hospital about the same amount of time. However, a new technique for removing a kidney for donation uses a smaller incision and may make it possible for the donor to leave the hospital in 2 to 3 days.

Between 85 and 90 percent of transplants from deceased donors are working 1 year after surgery. Transplants from living relatives often work better than transplants from unrelated or deceased donors because they're usually a closer match.

Possible Complications

Transplantation is the closest thing to a cure. But no matter how good the match, your body may reject your new kidney. A common cause of rejection is not taking medication as prescribed.

Your doctor will give you medicines called immunosuppressants to help prevent your body's immune system from attacking the kidney, a process called rejection. You'll need to take immunosuppressants every day for as long as the transplanted kidney is functioning. Sometimes, however, even these medicines can't stop your body from rejecting the new kidney. If this happens, you'll go back to some form of dialysis and possibly wait for another transplant.

Immunosuppressants weaken your immune system, which can lead to infections. Some medicines may also change your appearance. Your face may get fuller; you may gain weight or develop acne or facial hair. Not all patients have these problems, though, and diet and makeup can help.

Immunosuppressants work by diminishing the ability of immune cells to function. In some patients, over long periods of time, this diminished immunity can increase the risk of developing cancer. Some immunosuppressants can cause cataracts, diabetes, extra stomach acid, high blood pressure, and bone disease. When used over time, these drugs may also cause liver or kidney damage in a few patients.

Diet for Kidney Transplantation

Diet for transplant patients is less limited than it is for dialysis patients, although you may still have to cut back on some foods.

Your diet will probably change as your medicines, blood values, weight, and blood pressure change.

- **You may need to count calories.** Your medicine may give you a bigger appetite and cause you to gain weight.
- **You may have to eat less salt.** Your medications may cause your body to retain sodium, leading to high blood pressure.

Pros and Cons

Kidney transplantation has advantages and disadvantages. See the list below.

Kidney Transplantation

Pros

- + A transplanted kidney works like a normal kidney.
- + You may feel healthier and “more normal.”
- + You have fewer diet restrictions.
- + You won’t need dialysis.
- + Patients who successfully go through the selection process have a higher chance of living a longer life.

Cons

- It requires major surgery.
- You may need to wait for a donor.
- Your body may reject the new kidney, so one transplant may not last a lifetime.
- You’ll need to take immunosuppressants, which may cause complications.

Working with Your Health Care Team

Questions you may want to ask:

- Is transplantation the best treatment choice for me? Why?
- What are my chances of having a successful transplant?

	Hemodialysis	
	In Center	Home
Schedule	Three treatments a week for 3 to 5 hours or more.	More flexibility in determining your schedule of treatments.
Location	Dialysis center.	Home.
Availability	Available in most communities; may require travel in some rural areas.	Generally available, but not widely used because of equipment requirements.
Equipment and Supplies	No equipment or supplies in the home.	Hemodialysis machine connected to plumbing; chair.
Training Required	Little training required; clinic staff perform most tasks.	You and a helper must attend several training sessions.
Diet	Must limit fluids, sodium, potassium, and phosphorus.	
Level of Freedom	Little freedom during treatments. Greater freedom on nontreatment days.	More freedom to set your own schedule. You're still linked to a machine for several hours a week.
Level of Responsibility	Some patients prefer to let clinic staff perform all tasks.	You and your helper are responsible for cleaning and setting up equipment and monitoring vital signs. Can be stressful on family helpers.

- How do I find out whether a family member or friend can donate?
- What are the risks to a family member or friend who donates?

Peritoneal Dialysis		Kidney Transplantation	
CAPD	CCPD	Deceased	Living
Four to six exchanges a day, every day.	Three to five exchanges a night, every night, with an additional exchange begun first thing in the morning.	You may wait several years before a suitable kidney is available.	If a friend or family member is donating, you can schedule the operation when you're both ready.
Any clean environment that allows solution exchanges.		After the operation, you'll have regular checkups with your doctor.	
Widely available.	Widely available.	The transplant operation takes place in a hospital.	
Bags of dialysis solution take up storage space.	Cycling machine; bags of dialysis solution.	Transplant centers are located throughout the country. However, the demand for kidneys is far greater than the supply.	
You'll need to attend several training sessions.		No equipment or supplies needed.	
Must limit sodium and calories.		You'll need to learn about your medications and when to take them.	
You can move around, exercise, work, drive, etc., with solution in your abdomen.	You're linked to a machine during the night. You're free from exchanges during the day.	Fewer dietary restrictions.	
You must perform exchanges four to six times a day, every day.	You must set up your cyclor every night.	Offers the greatest amount of freedom.	
		You must take immunosuppressants every day for as long as the transplanted kidney functions.	

- If a family member or friend doesn't donate, how do I get placed on a waiting list for a kidney? How long will I have to wait?
- What symptoms does rejection cause?
- How long does a transplant work?
- What side effects do immunosuppressants cause?
- Who will be on my health care team? How can these people help me?
- With whom can I talk about finances, sexuality, or family concerns?
- How or where can I talk with other people who have faced this decision?

For more information about transplantation, see the NIDDK booklet *Treatment Methods for Kidney Failure: Kidney Transplantation*. Or see the chart on pages 22 and 23 that summarizes three treatment options.

Treatment Choice: Refusing or Withdrawing from Treatment

For many people, dialysis and transplantation not only extend life but also improve quality of life. For others who have serious ailments in addition to kidney failure, dialysis may seem a burden that only prolongs suffering. You have the right to refuse or withdraw from dialysis. You may want to speak with your spouse, family, religious counselor, or social worker as you make this decision.

If you withdraw from dialysis treatments or refuse to begin them, you may live for a few days or for several weeks, depending on your health and your remaining kidney

function. Your doctor can give you medicines to make you more comfortable during this time. You may start or resume your treatments if you change your mind about refusing dialysis.

Even if you're satisfied with your quality of life on dialysis, you should think about circumstances that might make you want to stop dialysis treatments. At some point in a medical crisis, you might lose the ability to express your wishes to your doctor. An advance directive is a statement or document in which you give instructions either to withhold treatment or to provide it, depending on your wishes and the specific circumstances.

An advance directive may be a living will, a document that details the conditions under which you would want to refuse treatment. You may state that you want your health care team to use all available means to sustain your life. Or you may direct that you be withdrawn from dialysis if you become permanently unresponsive or fall into a coma from which you won't awake. In addition to dialysis, other life-sustaining treatments you may choose or refuse include

- cardiopulmonary resuscitation (CPR)
- tube feedings
- mechanical or artificial respiration
- antibiotics
- surgery
- blood transfusions

Another form of advance directive is called a durable power of attorney for health care decisions or a health care proxy. In this type of advance directive, you assign a person to make health care decisions for you if you become unable to make them for yourself. Make sure the person you name

understands your values and is willing to follow through on your instructions.

Each state has its own laws governing advance directives. You can obtain a form for an advance medical directive that's valid in your state from the National Hospice and Palliative Care Organization (see For More Information on pages 27–30).

Paying for Treatment of Kidney Failure

Treatment for kidney failure is expensive, but Medicare and Medicaid pay much of the cost, usually up to 80 percent. Often, private insurance or state programs pay the rest. For more information, see the NIDDK fact sheet *Financial Help for Treatment of Kidney Failure*.

Points to Remember

- Your kidneys filter wastes from your blood and regulate other functions of your body.
- When your kidneys fail, you need treatment to replace the work your kidneys normally perform.
- Your three choices for treatment are hemodialysis, peritoneal dialysis, and kidney transplantation.
- The choice you make will affect your diet, your ability to work, and other life style issues.
- You have the right to refuse or withdraw from treatment if you choose.
- Medicare and Medicaid pay much of the cost of treatment for kidney failure.



For More Information

Organizations That Can Help

American Association of Kidney Patients

3505 East Frontage Road, Suite 315

Tampa, FL 33607

Phone: 1-800-749-2257

Email: info@aakp.org

Internet: www.aakp.org

American Kidney Fund

6110 Executive Boulevard, Suite 1010

Rockville, MD 20852

Phone: 1-800-638-8299

Email: helpline@akfinc.org

Internet: www.kidneyfund.org

Life Options/Rehabilitation Resource Center

c/o Medical Education Institute, Inc.

414 D'Onofrio Drive, Suite 200

Madison, WI 53719

Phone: 1-800-468-7777

Email: lifeoptions@MEIresearch.org

Internet: www.lifeoptions.org

www.kidneyschool.org

National Hospice and Palliative Care Organization

1700 Diagonal Road, Suite 625

Alexandria, VA 22314

Phone: 1-800-658-8898

Email: caringinfo@nhpco.org

Internet: www.caringinfo.org

www.nhpco.org

National Kidney Foundation, Inc.

30 East 33rd Street, Suite 1100

New York, NY 10016

Phone: 1-800-622-9010 or 212-889-2210

Internet: www.kidney.org

United Network for Organ Sharing

P.O. Box 2484

Richmond, VA 23218

Phone: 1-888-894-6361

Internet: www.unos.org

Additional Reading

If you would like to learn more about kidney failure and its treatment, you may be interested in reading

AAKP Patient Plan

This is a series of booklets and newsletters that cover the different phases of learning about kidney failure, choosing a treatment, and adjusting to changes.

American Association of Kidney Patients

3505 East Frontage Road, Suite 315

Tampa, FL 33607

Phone: 1-800-749-2257

Email: info@aakp.org

Internet: www.aakp.org

Medicare Coverage of Kidney Dialysis and Kidney Transplant Services

Publication Number CMS-10128

U.S. Department of Health and Human Services

Centers for Medicare & Medicaid Services

7500 Security Boulevard

Baltimore, MD 21244-1850

Phone: 1-800-MEDICARE (633-4227)

TDD: 1-877-486-2048

Internet: www.medicare.gov/publications/pubs/pdf/esrdcoverage.pdf

National Kidney Foundation (NKF) Patient Education Brochures (includes materials based on NKF's Dialysis Outcomes Quality Initiative)

National Kidney Foundation, Inc.

30 East 33rd Street, Suite 1100

New York, NY 10016

Phone: 1-800-622-9010 or 212-889-2210

Internet: www.kidney.org

Newsletters and Magazines

Family Focus Newsletter (published quarterly)

National Kidney Foundation, Inc.

30 East 33rd Street, Suite 1100

New York, NY 10016

Phone: 1-800-622-9010 or 212-889-2210

Internet: www.kidney.org

Renalife (published quarterly)

American Association of Kidney Patients

3505 East Frontage Road, Suite 315

Tampa, FL 33607

Phone: 1-800-749-2257

Email: info@aakp.org

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About the Kidney Failure Series

You and your doctor will work together to choose a treatment that's best for you. The publications of the NIDDK Kidney Failure Series can help you learn about the specific issues you will face.

Booklets

- *Kidney Failure: Choosing a Treatment That's Right for You*
- *Treatment Methods for Kidney Failure: Hemodialysis*
- *Treatment Methods for Kidney Failure: Peritoneal Dialysis*
- *Treatment Methods for Kidney Failure: Transplantation*
- *Eat Right to Feel Right on Hemodialysis*
- *Kidney Failure Glossary*

Fact Sheets

- *Kidney Failure: What to Expect*
- *Vascular Access for Hemodialysis*
- *Home Hemodialysis*
- *Hemodialysis Dose and Adequacy*
- *Peritoneal Dialysis Dose and Adequacy*
- *Amyloidosis and Kidney Disease*
- *Anemia in Kidney Disease and Dialysis*
- *Renal Osteodystrophy*
- *Financial Help for Treatment of Kidney Failure*

Learning as much as you can about your treatment will help make you an important member of your health care team.

The NIDDK will develop additional materials for this series as needed. Please address any comments about this series and requests for copies to the National Kidney and Urologic Diseases Information Clearinghouse. This series is also on the NIDDK website at www.niddk.nih.gov; click on "Kidney and Urologic Diseases" under Health Information for the Public.



National Kidney and Urologic Diseases Information Clearinghouse

3 Information Way
Bethesda, MD 20892-3580
Phone: 1-800-891-5390
Fax: 703-738-4929
Email: nkudic@info.niddk.nih.gov
Internet: www.kidney.niddk.nih.gov

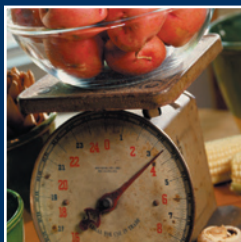
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Publications produced by the Clearinghouse are carefully reviewed by both NIDDK scientists and outside experts.

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This booklet is also available at www.kidney.niddk.nih.gov.

This publication may contain information about medications used to treat a health condition. When this publication was prepared, the NIDDK included the most current information available. Occasionally, new information about medication is released. For updates or for questions about any medications, please contact the U.S. Food and Drug Administration at 1-888-INFO-FDA (463-6332), a toll-free call, or visit their website at www.fda.gov. Consult your doctor for more information.



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