



Your Kidney Health

Your Choices

Your doctor may have told you that you have chronic kidney disease (CKD or advanced kidney disease; or, you may be in kidney failure, and may have to make a decision about dialysis rather quickly. This is a big decision that will have an impact on your daily life.

Why is it important to think about this decision now?

When your kidneys start to fail, it is difficult to predict when they will fail completely. The sooner you begin to think about your options, the more time you will have to plan for the treatment that best fits your lifestyle and preferences.

You may be feeling a lot of emotions at this time: overwhelmed, shocked, confused, angry. You may also be feeling a sense of loss or grief. This is ok. Many people in your situation have had some of these same feelings.

Remember, this is your choice, but you are not alone. Your health care team is there to help you with this decision, and you should feel free to ask them any questions. Your loved ones may be a part of the decision, too. No matter who else is involved, we encourage you to have a strong voice in choosing the type of dialysis that is right for you.

In the United States, more than 96% of patients who need treatment for kidney failure (also called renal failure) start either in-center hemodialysis (HD) or peritoneal dialysis (PD). We focus on these two types of dialysis since they are the most common. However, keep in mind that there are other options not included on this website:

- hemodialysis done at home (home hemodialysis)
- kidney transplant
- conservative management (when dialysis is not started)

When it's not your choice

Sometimes, a person's body may not allow for a certain type of dialysis. Other times, someone might be in an emergency situation, and the health care team has to make the choice. If this is your situation, it doesn't mean that you have lost control of the rest of your dialysis journey. Remember, you will still have the opportunity to be the leader in your dialysis care.

Chronic Kidney Disease

Where are the kidneys?

Kidneys are internal organs that lie on the side of the spine in the lower back. Most people are born with two kidneys; each is about the size of a fist.



What do your kidneys do?

- When healthy kidneys filter and clean the blood, waste products and excess water leave your body in the urine.
- Kidneys contribute to good health by balancing the levels of different minerals, like sodium (salt), potassium, and phosphorus.
- Kidneys release hormones to control blood pressure, make red blood cells, and keep your bones healthy.

What happens when your kidneys aren't working properly?

Many diseases, including diabetes and high blood pressure, can damage the kidneys. When the kidneys cannot do their usual jobs, harmful toxins and excess fluid build up in the body and can make you sick.

Most of the time, the kidneys do not stop working all at once. Chronic kidney disease (CKD) is a long-term health problem. For some people with CKD, the damaged kidneys eventually stop working altogether. This is called "kidney failure" or end-stage renal disease (ESRD). In some cases, there is acute damage to the kidneys that leads to sudden kidney failure.

What are the stages of Chronic Kidney Disease (CKD)?

CKD is divided into 5 stages. Each stage tells you how well the kidneys are working. Doctors often estimate kidney function based on the glomerular filtration rate (GFR), a test based on levels of creatinine (a waste product that is normally removed by the kidneys) in the blood. As kidney disease gets worse, GFR decreases. To explain how well your kidneys are working, their function can be described as a percentage of normal function. For example, when the kidneys are working normally, they can be described as working at 100%.

Many people don't have any signs and symptoms and learn they have kidney disease when it is advanced. When kidney function is very low, symptoms may include:

- Changes in urination
- Difficulty breathing
- Swelling
- Feeling tired and having less energy
- Sleeping problems
- Dry, itchy skin
- Changes in appetite
- Nausea or upset stomach
- Muscle cramps
- Sexual or intimacy issues
- Trouble concentrating or thinking clearly
- Memory loss/forgetfulness

It's important to remember that these symptoms can also be caused by other illnesses and are common as people age.

It is common for people with kidney failure to experience these feelings and emotions:

- Shock
- Fear
- Depression
- Mood swings
- Irritability
- Anxiety



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How can people with advanced kidney disease take care of their health?

You may not be feeling well right now, but you will not feel like this forever. Although every day may be different, people starting dialysis often feel better day-by-day. There are also other ways you can take care of your overall health and well-being.

Learn About Dialysis

Types of Dialysis

What is dialysis?

Dialysis is one of the treatments that are available when kidneys have almost stopped working. Other options include kidney transplant and conservative management. Dialysis does not do everything that healthy kidneys normally do, but it cleans the blood and filters out harmful wastes and excess fluids. Most people who start dialysis remain on dialysis for the rest of their lives, or until they receive a kidney transplant.

What are the most common types of dialysis?

This website focuses on the two types of dialysis that are used by the majority of patients with kidney failure: in-center HD and PD. Since these treatments are very different, we want to help you understand how each might fit your preferences and lifestyle.

Hemodialysis (HD)

What is hemodialysis?

HD is a treatment that uses a machine to take blood out of the body, filter out wastes and excess fluid, and put the clean blood back into the body.

Where is it done?

We focus on in-center HD that is done in a specialized clinic, called a dialysis center. In some cases, when a person is very ill, HD is done at the hospital. HD can also be done at home. For more information on home hemodialysis, see Resources

Who is involved?

Dialysis nurses and patient care technicians (PCT) are responsible for performing dialysis treatment, following a doctor's prescription.



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How is it done?

To take blood out of the body and put it back in, an access site to the blood stream is needed. There are two types of accesses:

1. Fistula or Graft: Connects a vein to an artery, causing strong blood flow that is needed for HD. Fistulas/grafts are placed during outpatient surgery, usually in one arm. It takes some time (usually weeks, sometimes months) for a fistula/graft to get strong enough for dialysis. With time, the large amount of blood causes the vein to bulge. Fistulas/grafts are the preferred access because there are lower chances of infection.

2. Catheter: A plastic tube is inserted into a large vein to take blood in and out of the body. It is placed during outpatient surgery, most often in the chest or neck. Catheters increase the risk of getting very serious infections, which is why they are usually only a temporary option.

Hemodialysis (HD) Schedule

Most people on HD receive 3 treatments per week. Usually, people do HD either on a Monday/Wednesday/Friday schedule or a Tuesday/Thursday/Saturday schedule. In most cases, each dialysis treatment lasts for about 3-5 hours.

Most HD centers have different shifts starting early in the morning, mid-day, and mid-afternoon. Some centers also have an evening or night shift. If you choose HD, let your health care team know what shift would be best for you. Although it may not always be possible, they will do all they can to accommodate your needs, so that dialysis can fit to your schedule.

Side effects of hemodialysis (HD)

Side effects of HD during the session may include:

- Pain from inserting needles
- Changes in blood pressure, which can make you feel hot and lightheaded
- Cramping during and after dialysis

After the HD treatment, it is common to feel tired or washed out, and some people need to rest a lot.

Daily Life on Hemodialysis (HD)

Getting to the dialysis center

If you choose HD, you will need reliable transportation to the dialysis center. Some people can drive themselves or take public transportation. Others will need someone to drive them. In some cases, transportation may be arranged for you.



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Travel out of town

Travel for people on HD is possible, with some advanced planning to schedule dialysis at a center near your destination. It's not always easy for another dialysis center to fit a transient patient in their schedule, and they will need all of your clinical information. Make sure to plan with plenty of time in advance. Your health care team can help you to plan and arrange treatments.

Peritoneal Dialysis (PD)

What is peritoneal dialysis?

PD uses the membrane that lines the inside of the belly (peritoneum) to clean the blood. A sterile fluid ("dialysate") is put into the belly, pulls wastes and excess fluid from the blood through the peritoneum, and is then removed from the belly. This process is called "PD exchange."

Where is it done?

PD is usually done at home, but it can also be performed in other places, such as at the workplace.

Who is involved?

If you choose PD, you will be responsible for performing your own treatment every day. A member of your health care team will always be available by phone, and you will go to the clinic for appointments, usually once or twice a month.

How is PD done?

PD catheter

For the dialysate fluid to go in and out of the belly, a plastic tube ("PD catheter") is placed through surgery. One end of the catheter is inserted under the skin into the peritoneum, while the other end sticks out from the skin, usually below the belly button. Since the catheter is directly connected to the belly, there is a risk of getting very serious infections if the catheter is not properly cared for.

There are two types of PD: continuous ambulatory peritoneal dialysis (CAPD) and automated peritoneal dialysis (APD). In CAPD, the catheter is connected to a bag of dialysate and a bag for drainage. In APD, a machine (called a cycler) is connected to the bags, fills the belly with dialysate, and then drains it out.

CAPD or APD may be better for a specific person, depending on physical condition and personal characteristics. If you choose PD, your doctor will indicate what modality is best for you.



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As with hemodialysis (HD), there isn't an exact timeline. Events may take place at different times for each person.

Peritoneal dialysis (PD) Schedule

PD is done every day. The process of draining and filling fluid from the belly is called PD exchange.

In continuous ambulatory peritoneal dialysis (CAPD), an exchange is usually done 3 to 4 times each day, every 4 to 6 hours. Each exchange takes about 30 minutes. Usually, the dialysate fluid is also put into the belly at night and drained out in the morning.

Automated Peritoneal Dialysis (APD) is done at night while the person sleeps, usually for 8 to 12 hours. In the morning, dialysate fluid is often left in the belly for the entire day.

Side effects of peritoneal dialysis (PD)

During a PD exchange, a good amount of dialysate fluid is put into the belly. A common side effect is feeling full or having an uncomfortable feeling in the stomach.

Other symptoms or side effects people on PD feel include:

- Changes in bowel movements
- Weight gain
- Trouble with sleeping

People on dialysis (both HD and PD) have a high risk of infection and will need to watch for signs of infection, which may include fever, chills, irritated skin, and blood or pus around the access sites. Any of these things should immediately be reported to your health care team. It is very important to get any infection under control quickly.

Daily Life on Peritoneal Dialysis (PD)

Home environment

To perform PD, it is very important to have a clean home. Having a clean home helps to prevent infections.

People on PD will need space at home to store PD supplies. PD supplies are delivered in boxes that are similar to the weight and size of boxes that contain printer paper. These can be heavy and take up space.

Travel out of town

PD can be done at any travel destination if you have a clean environment (for example, a hotel room) and the appropriate supplies. People on PD should talk first to their health care team and let them know that they are traveling. Your health care team can help determine how many supplies you will need and organize shipment to your travel destination.



Changes

How will you feel after starting dialysis?

Each person may feel differently when they start dialysis. You might feel scared, overwhelmed, angry, or depressed. Emotions will usually shift over time as you adjust to dialysis. After they start dialysis, some people have more energy and feel like they think more clearly.

Other factors not directly related to dialysis treatment will impact your everyday life. Common for people on both HD and PD are: diet, finances, and the impact on your loved ones.

Diet

Dialysis can only remove a limited amount of wastes and water, so people on dialysis need to limit the amount of fluids they drink and specific types of food. Maintaining a healthy diet is very important.

Finances

While many people are able to continue to work after they start dialysis, some may make less money or have changes in insurance if they reduce their working hours. People on dialysis may have expenses for doctor visits, tests, and medications. Costs depend on many factors, such as insurance coverage. This is very confusing. Your social worker can help answer questions about insurance and financial issues.

Impact on loved ones

When you have kidney failure, life also changes for people who are close to you. From a practical standpoint, they may need to take you to medical appointments or to dialysis. They may need to take on more responsibilities around the house when you are feeling tired. Your partner may be affected if you are experiencing sexual problems.

Emotionally, your loved ones will need to cope with the symptoms of kidney failure (for example, it may be difficult for you to concentrate or remember things). Loved ones may also be affected by the emotions you are going through.

Your social worker is available to talk with you and your family together regarding any concerns that come up and can make suggestions that might help both you and your family.

Your loved ones cannot read your mind. You need to tell them when you want help, and when you don't.

What if I want to change my mind?

As your lifestyle and health change over time, you may change your mind about the type of dialysis that's right for you or how you do dialysis. For example, if you are on HD, you may want



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to change your day or time of dialysis. This is ok. Let your health care team know, and together, you will come up with the best plan.

Sometimes, people may have to change the type of dialysis, as their current treatment may no longer be the best option for them.

Your Care Team

Meet your care team

Remember, you are the leader of your health care team. There will be many other people working alongside of you to help you get the care you need, but you are the most important person! The other members of your team include people who are trained to help you:

- Nephrologist: A doctor who works with people with kidney problems.
- Kidney educator: A trained professional, often a social worker, who teaches patients about kidney disease and dialysis treatments.
- Nurse: A trained medical professional who will assist in your care and dialysis treatment.
- Patient care technician (PCT): A health care worker trained to give care during hemodialysis (HD) treatments.
- Dietitian: A trained professional who gives information on what to eat and drink to maintain a healthier life.
- Social worker: A trained professional who gives all levels of support, including educational and emotional, to patients before and after beginning dialysis.
- Peer mentor: A kidney patient who has been trained to support other patients.

People on HD regularly see many members of this health care team when they go to dialysis.

People on peritoneal dialysis (PD) are responsible for their daily care and see their health care team once or twice a month when they go to their dialysis center. This doesn't mean they are alone! Family members of people on PD may assist them with their daily care, and a member of the health care team will always be available by phone.



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Summary of HD and PD

Here is an overview of HD and PD:

	Hemodialysis (HD)	Peritoneal Dialysis (PD)
Treatment Basics	Uses a machine to clean the blood Performed in a specialized dialysis center Health care team does the treatment	Uses the peritoneum to clean the blood Performed at home or wherever the patient is (example: workplace, vacation) Patient does the treatment
Schedule	Typically 3 times per week Typically 3-5 hours per session	Every day CAPD is usually done 3 to 4 times each day. Each exchange takes about 30 minutes. APD is done while the person sleeps, usually for 8 to 12 hours.
Side Effects	Pain from inserting needles Changes in blood pressure Cramping Feeling tired and washed out	Full belly Changes in bowel movements Weight gain Trouble with sleeping
Daily Life	Transportation to the center Travel out of town	Clean environment Space for supplies Travel out of town