

## Stages and Treatment



### Five Stages of Kidney Disease

Your kidneys are essential to your health and survival. They filter your blood, produce urine, regulate blood pressure, and help with other important body functions. When your kidneys don't work well, waste products and extra fluid are not removed from your body.

Chronic kidney disease occurs when your kidneys are damaged. If chronic kidney disease goes untreated, it can progress to end-stage renal disease.

A blood test that checks your glomerular filtration rate can show how well your kidneys are working. The higher the number, the better your kidneys are doing.

There are five stages of chronic kidney disease:

- In stages 1 and 2, damage to the kidneys is mild and they still work well. You may feel normal and do not have any symptoms. Making healthy lifestyle changes at this stage can prevent or prolong more damage to the kidneys. At stage 1, your glomerular filtration rate is 90-100%. At stage 2, your glomerular filtration rate is 60-89%.
- At stage 3, the damage to the kidneys is mild to moderate. The kidneys do not work as well and blood is not filtered adequately. This may cause you to feel weak and tired. Your hands and feet may swell and your urine might be darker. At this stage, work closely with your doctor, get the right care, and make healthy lifestyle changes to help stop of the disease from getting worse. At stage 3, your glomerular filtration rate is 30-59%.
- At stage 4, your kidneys have moderate to severe damage. Symptoms may include weakness, fatigue, itchy skin, muscle cramps, weight loss, poor appetite, and swelling of the hands and feet. You may urinate more often and the urine might be darker or foamy. You should work closely with your kidney doctor (nephrologist) to slow down the damage to your kidneys. At stage 4, your glomerular filtration rate is 15-29%.
- Stage 5 is known as end-stage renal disease. The kidneys are close to failure or no longer work. You'll need treatment such as dialysis or a kidney transplant. Discuss with your nephrologist which treatment is best for you. At stage 5, your glomerular filtration rate is less than 15%.

# Chronic Kidney Disease

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## Dialysis

Dialysis is a treatment to help the body filter excess water and waste products. Proper treatment is linked to better quality of life, increased well-being, reduced symptoms, and more energy. For best results, eat the right foods and take your medication as prescribed.

There are two types of dialysis – hemodialysis and peritoneal. These treatments act as an artificial kidney to rid your body of waste and excess fluid. During dialysis, a solution known as a dialyzer cleanses the blood using either a machine or your own body via the peritoneum.

Dialysis requires an access port that's surgically placed by a doctor. There are three diverse types of access ports:

- Arteriovenous fistula
- Arteriovenous graft
- Peritoneal dialysis catheter

The type of access port you get depends on the type of dialysis. Hemodialysis includes either an arteriovenous fistula or an arteriovenous graft. If you're having peritoneal dialysis, you will have a peritoneal dialysis catheter. An arteriovenous fistula is an access port in your arm that requires a surgical procedure to join an artery and a vein. A peritoneal dialysis catheter is a flexible, hollow tube that a surgeon places in the lining of your abdomen wall.

It's important to tell your doctor right away if you notice any signs and symptoms of infection at your access port, such as:

- Increased pain, swelling, redness, or warmth on or near the site.
- Red streaks from fistula or catheter site.
- A fever.

Peritoneal dialysis filters your blood through tiny blood vessels. Unlike hemodialysis, peritoneal dialysis uses the lining of your abdomen called the peritoneum as a filter. The dialysate flows through your peritoneal dialysis catheter and into the lining of your belly. The solution washes in and out of your belly in cycles to cleanse and filter your blood. Peritoneal dialysis treatment is done daily.

There are two types of peritoneal dialysis:

- Continuous ambulatory peritoneal dialysis.

This is a manual treatment and does not need a machine. The treatment is portable and can be done as you go about your day. This treatment inserts two quarts of a solution into your belly through the peritoneal dialysis catheter. You can do this by attaching the bag of solution to the catheter and using gravity to let it flow into your belly. The solution then stays in your belly and cleanses your blood for four to six hours. When done, the solution is drained and thrown away. The filling, cleansing, and draining process is called an "exchange."

Continuous ambulatory peritoneal dialysis is completed several times a day. Discuss the number and length of treatments with your doctor.

- Continuous cycling peritoneal dialysis, which is also known as automated peritoneal dialysis.

This type of peritoneal dialysis requires a small at-home machine called an automated cycler. With the automated cycler, you can connect, disconnect, and program it by yourself. You will attach the automated cycler to your catheter and cycle at night for eight to nine hours while you sleep. The treatment should be done when you wake up the next day. You'll disconnect the machine and throw away the used bag of dialysate.



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## Hemodialysis

Hemodialysis is done in a clinic or a hospital. Hemodialysis involves a vascular access, either an arteriovenous fistula or an arteriovenous graft, and a machine. During dialysis, a nurse will insert a soft, flexible tube, also known as an intravenous line, into your vascular access site. Through the IV, your blood will circulate into a machine called a dialyzer. The dialyzer will function as your kidney during the treatment. To clean your blood, the dialyzer removes waste and extra fluid using a solution called dialysate. Once the blood is filtered, it circulates back into your body. During dialysis, a nurse monitors you for high blood pressure (hypertension) or low blood pressure (hypotension).

After hemodialysis, some people experience low blood pressure. This can cause you to feel dizzy, nauseous, or even faint. If this happens, it's important to avoid falling and have someone with you.

Other possible side effects that are not as common include back pain, cramps, headache, and/or itchy skin. If you experience any of these side effects, let your treatment team know.

Treatments can vary from three or four times a week and three to six hours a session. Your nephrologist will decide how often you'll need dialysis.

## Kidney transplant

A kidney transplant is a procedure that can give you a healthy kidney. During the transplant, you will receive a kidney that will replace your nonfunctional kidney. The life span of a transplanted kidney can be 12 to 25 years. Dialysis is not needed while the transplanted kidney is working.

A kidney can come from a living donor. Having someone you know who's a match and will donate a kidney to you is the fastest way to get a kidney transplant. Other donors can be those who've recently died and have donated their organs. The wait list for donated organs from strangers is about three to five years.



After a transplant, you'll take medication daily to prevent your body from rejecting the kidney.

There are steps to getting a kidney. First, you must qualify. Some health conditions such as cancer and advanced heart disease may disqualify you. Contact your nephrologist to discuss if a transplant is ideal for you. Your nephrologist may refer you to a transplant center that will evaluate you to decide if you are a transplant candidate. If you qualify for a transplant, you'll either find a living donor or are added to the waitlist. Once a kidney is found, you will move forward with the transplant.

Benefits of a kidney transplant include no longer needing dialysis, toxins no longer being built up in the body, more energy, and more freedom. Food and diet are also less restricted. Overall, transplanted kidneys can help you lead a longer and healthier life.

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## Palliative Care

Palliative care provides comfort care and support for those who live with a serious illness, including kidney disease. The goal of palliative care is to improve your quality of life and to decrease pain and emotional stress for both you and your loved ones. It's a special type of medical care that helps manage pain and other conditions such as blood pressure and diabetes. The treatment team consists of doctors, nurses, social workers, and case managers who work together to give you extra support and care to help you manage your condition better. You can ask for a palliative care consultation at any time after diagnosis.

## Hospice Care

Hospice care focuses on relieving symptoms and maximizing your quality of life. Unlike palliative care, hospice care is only available to those with a life expectancy of six months or less. Hospice care can help you address your physical ailments and meet your emotional and spiritual needs. During hospice care, you'll have a team to provide extra support and comfort. The team will support you in your choice of treatment whether it's in a hospice facility or the comfort of your home. The hospice care team consists of a doctor, a nurse, a social worker, a health aid, and a spiritual support counselor.



## Resources

Fresenius Kidney Care: [freseniuskidneycare.com](http://freseniuskidneycare.com)

National Kidney Foundation: [kidney.org](http://kidney.org)

Mayo Clinic: Search for hemodialysis at [mayoclinic.org](http://mayoclinic.org)

United Kingdom National Health Service:

Search for kidney disease at [nhs.uk](http://nhs.uk)