



Ontario Renal Network

Let's talk about

End-Stage Renal Disease



What is end-stage renal disease (ESRD)?

Chronic kidney disease (CKD) is divided into five stages, depending on how well your kidneys are working. Stages 1 and 2 are quite mild, while stages 3, 4 and 5 are more serious.

Stage 5 includes end-stage renal disease (ESRD), which is also called end-stage kidney disease (ESKD) or kidney failure. This is when the kidneys are at the end of their ability to work well enough to support day-to-day life. In order to live, a person with ESRD will need either dialysis or a kidney transplant.

How is ESRD treated?

If you have ESRD, you have several options for treatment:

- Hemodialysis in a hospital
- Hemodialysis or peritoneal dialysis at home (self-care)
- Transplant (surgery to implant a healthy kidney in you)
- Palliative care (focusing on your symptoms and quality of life, without dialysis or transplant)

Did you know?

There are several treatment options for people with ESRD.

Together, you and your kidney care team will discuss the pros and cons of each option and your personal preferences in order to select a treatment that is right for you.

What is dialysis?

Dialysis is a treatment that takes over your kidneys' job of removing toxins and water from your blood. There are two main types of dialysis: **hemodialysis** (HD) and **peritoneal dialysis** (PD).

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What is hemodialysis?

During hemodialysis, you are connected to a machine that gradually (continuously) filters your blood to remove waste and toxins, and then returns the clean blood to your body. Hemodialysis is usually done 3 or 4 times a week and takes about 3-4 hours each time.

You can do hemodialysis in a hospital or at home.

What is peritoneal dialysis?

Peritoneal dialysis uses the lining of your stomach to clean your blood. You insert special dialysis fluid into your belly through a tube to absorb toxins and extra unwanted water from the blood. After a fixed amount of time, you drain out the fluid, removing the toxins and water with it. You usually fill and remove this fluid 3 or 4 times a day, or a machine does it overnight.

Peritoneal dialysis is always done at home, and you can do it while you sleep, work or go about many daily activities.

Will I need an operation to do dialysis?

You will need a "body access" operation to prepare a way to reach the blood for dialysis. For best results, this surgery should be done well in advance of starting dialysis.

For hemodialysis, there are 3 types of body access:

- A fistula, which is made by joining an artery and vein in your arm;
- A graft, which is made by using a piece of soft tube to join an artery and vein in your arm; or
- A catheter, which is soft tube that is placed in a large vein, usually in your chest or neck.

For peritoneal dialysis, you will need to have an operation to insert a soft tube called a catheter into your belly.

Should I dialyze at home?

Studies show that people who manage their dialysis at home (self-care) often report a better quality of life and a greater sense of independence than people who dialyze in a hospital.

If you are thinking of doing either peritoneal dialysis or home hemodialysis, you will need to:

- Be healthy and medically stable.
- Be able to provide your own care or have a support person (such as a family member) who can help you.
- Be able to read and speak English, or have a translator for the entire training program.
- Have a space that is safe, clean and has enough room for equipment and supplies.
- Have electricity, clean water and an area for handwashing.
- Have a working telephone and internet access available at all times (in case there is an emergency).

Home dialysis would not be a good choice for you if you do not meet all of the above criteria or if you have other medical conditions that require care in a hospital.

Home dialysis can be an option for you even if you do not meet all of the above criteria. There may be the option of having supports for dialysis in your home if services are available in your community.

Home hemodialysis is becoming available even in remote areas of Ontario. Check with your kidney care team to see if home hemodialysis is an option in your region.

How do I learn to dialyze at home?

Once you and your healthcare team have decided that home dialysis is a good option for you, you will be enrolled in a dialysis training program.

What about a kidney transplant?

Kidney transplantation provides the best long-term outcome for people with end-stage kidney disease, although it depends on the success of the transplant and your overall health.

There are many factors that determine whether you would be a good candidate for a kidney transplant. These include your physical and mental health and your ability to follow the suggested medical treatment after the transplant.

A transplanted kidney comes from either a living person or someone who has died suddenly but their kidney can be saved. The length of time to receive a transplant is not predictable, as it depends on the availability of donated kidneys and your match with what is available.

What if I would like to end my dialysis treatments, or do not wish to start dialysis at all?

Palliative care is a treatment option which provides comfort care, both physical and emotional, if you decide to let the disease run its natural course.

For some patients, the treatment involved in dialysis or transplant may not offer a good enough quality of life. In other words, the burden of treatment outweighs the benefits of the treatments.

If dialysis has already been started, people have the right to choose to stop it at any time and to be supported with this type of care. You will receive medication and treatments to manage the symptoms.

If you choose this, emotional support for you and your family is key. You and your family will work with your doctor and other members of the healthcare team to develop a treatment plan that honours your wishes, and helps you and your family obtain the support and comfort you need.

How do I decide which treatment is right for me?

It is important to start thinking about your treatment options early, as special preparation (such as training or surgery) is required for each option. Early preparation will lower your chance of getting sick and needing hospitalization.

Your choice of treatment will depend on many factors, such as:

- Your values and lifestyle
- Your concerns about symptoms and side effects
- Who can help you with your care
- Whether you live close to a hospital and have transportation

How well you are feeling and whether you have other medical conditions.

Together, you and your kidney care team will discuss the pros and cons of each option and your personal preferences in order to select a treatment that is right for you.



Where can I get more information?

If you would like more information, talk to your doctor or nurse. They will be able to provide this information or can contact a specialist in chronic kidney disease.

Kidney care terms

Access: Also called “vascular access” or “body access,” this is a way to reach the blood for dialysis. There are three types of access: fistula, graft and catheter.

- **Catheter:** A hollow tube used to move blood or fluid in or out of the body. There are two types—one for hemodialysis, and one for peritoneal dialysis.
- **Fistula:** Commonly used method of providing access to the bloodstream for dialysis, in which a vein and an artery in the arm are surgically joined together.
- **Graft:** A vein and an artery in the arm are joined with a piece of special tubing. The graft provides access to the bloodstream for dialysis.

Acute kidney injury: Rapid, sudden loss of kidney function, usually the result of an injury, surgery or medications.

Albumin: A type of protein. Albuminuria, which means albumin in the urine, is a sign of kidney disease.

Artery: A blood vessel that carries blood away from the heart.

Chronic kidney disease (CKD): A disease in which the kidneys do not properly remove waste and excess fluids from the body.

Diabetes: A disease in which the pancreas does not make enough or any insulin (type 1 diabetes) or the body does not use the insulin the pancreas makes (type 2 diabetes). The body needs insulin to convert food into energy.

Dialysis: A treatment for kidney failure that removes wastes and water from the blood.

Estimated glomerular filtration rate (eGFR): A measurement, taken by blood test, which shows how well the kidneys are working. The lower the eGFR, the poorer the kidneys are working.

End-stage renal disease (ESRD): The end of kidney function (kidney failure), when the kidneys no longer adequately filter wastes from the blood. ESRD is also called end-stage kidney disease or Stage 5 kidney disease.

Hemodialysis: A treatment in which a machine filters wastes and fluid from the blood.

High blood pressure (hypertension): Blood pressure shows how hard your heart has to work in order to pump blood through your body. The harder it is for the blood to flow through the blood vessels, the higher blood pressure will be. For most people, a normal blood pressure reading is around 120/80 mmHg. High blood pressure puts you at high risk for kidney disease, a heart attack or stroke. High blood pressure can also be caused by kidney disease.

Nephrologist: A doctor who specializes in kidney problems.

Palliative care: Care that focuses on symptoms and quality of life, without dialysis or transplant. It is also called conservative care.

Peritoneal dialysis: A treatment that uses the lining of the belly to clean the blood.

Phosphorus (phosphate): A mineral found in many foods. The kidneys control how much phosphorus is in the blood. Normal levels of phosphorus keep bones strong and healthy. At high levels, it causes itching, painful joints and bone disease. People with kidney disease may need to limit the amount of phosphorus they consume in food and drinks.

Polycystic kidney disease (PKD): A type of kidney disease in which many fluid-filled sacs (cysts) form in the kidneys. PKD runs in families and can lead to kidney failure.

Potassium: A mineral found in many foods. The kidneys control how much potassium is in the blood. Normal levels of potassium help nerves and muscles work well. At high levels, it may stop the heart. People with kidney disease may need to limit the amount of potassium they consume in food and drinks.

Urinalysis: a test that looks at urine (pee).

Vein: A blood vessel that returns blood to the heart.