



## What is chronic kidney disease?

**Chronic kidney disease (CKD)** is a serious health problem where the kidneys cannot filter waste products and excess fluid from the blood. It's the ninth leading cause of death in the U.S. and affects about 37 million people.

Your kidneys and blood vessels work together to keep your body healthy. When your blood vessels get weak, clogged, or damaged, your kidneys don't get the healthy blood flow they need. That can cause kidney problems or make existing kidney disease worse. And it works both ways — if your kidneys aren't working well, waste can build up in your blood and make your blood vessels stiff or damaged.

## Symptoms

CKD can cause different symptoms as it gets worse. Common symptoms include:

-  Feeling very tired or weak
-  Having trouble sleeping
-  Not feeling hungry or wanting to eat more than usual
-  Muscle cramps or twitches
-  Swelling in your feet and ankles
-  Needing to urinate more or less often, or noticing your urine looks different
-  Trouble concentrating or thinking clearly
-  Itchy skin
-  Numbness or tingling in your hands or feet

## Causes and Risks

When kidneys stop working well, people may need dialysis. Dialysis is a treatment that cleans the blood by removing waste and extra fluid that the kidneys can no longer remove.

The two main causes of CKD are diabetes and high blood pressure. Other causes include:

- Kidney infections
- Autoimmune diseases (when the body attacks itself)
- Genetic conditions (passed down in families)
- Certain medicines

Some things can increase your chance of getting CKD and needing dialysis:

- Older age
- A family history of kidney disease
- Extra body weight
- Use of tobacco
- A diet high in salty or processed foods
- Diabetes or poorly controlled high blood pressure

# Recognizing Chronic Kidney Disease

Doctors use several tests to find out if you have CKD and check how well your kidneys are working, including:

- **Blood Tests:** Blood tests measure substances in your blood, like creatinine (a waste product that kidneys should remove and GFR (glomerular filtration rate, which shows how well your kidneys filter blood)
- **Urine Tests:** Urine tests check for protein or albumin (a type of protein) in your urine. Too much protein in urine can be a sign of kidney problems.

- **Imaging Tests:** Tests like ultrasound or MRI take pictures of your kidneys to check their size and structure.
- **Kidney Biopsy:** Sometimes doctors need to take a very small sample of kidney tissue. This helps them figure out what's causing the CKD.

Doctors also ask about symptoms like:

- Feeling very tired
- Changes in how often you urinate
- Swelling in your feet, ankles or other parts of your body

## Role of a Vascular Surgeon



If you have CKD, your doctor may send you to a vascular surgeon to help with treatment and make sure your blood vessels stay healthy during your treatment and recovery. Vascular surgeons are the only specialists trained to recognize and treat the full spectrum of vascular diseases. They make the connection needed for hemodialysis and keep it working properly by creating the arteriovenous fistulas (AVFs) or grafts. These are special connections in your blood vessels that increase the blood flow and are needed for hemodialysis treatment.

## Treatment

Treatment for CKD aims to slow down the disease and manage symptoms. Your doctor may suggest healthy lifestyle changes, including:

- ✓ Eat a healthy diet
- ✓ Exercise regularly
- ✓ Keep your blood pressure under control
- ✓ Keep your blood sugar levels normal (especially if you have diabetes)

Doctors may prescribe medicines to help manage problems caused by CKD. If CKD gets very serious, you may need:

- ✓ Dialysis: A treatment that cleans your blood when your kidneys can't
- ✓ Kidney transplant: Getting a new kidney

Dialysis removes harmful waste from your blood when your kidneys can't do it anymore. During the treatment, your blood is sent through a special machine that removes waste, extra salt, and fluid. Over 500,000 people in the U.S. get dialysis.

To do dialysis, you need a special access point where blood can be removed, cleaned and returned to your body. You and your doctor will decide together which type of dialysis access is best for you. The most common type is called AVF. Vascular surgeons use this connection to remove your blood, clean it with a dialysis machine and return it to your body.