BMJ Best Practice

Patient information from BMJ

Last published: Apr 29, 2025

Chronic kidney disease: what treatments work?

Chronic kidney disease (CKD) is a serious condition where the kidneys stop working properly. The risk of developing CKD increases as you get older and if you have certain conditions.

More background information on CKD is available in our patient information *Chronic kidney disease: what is it?*

There is no cure for CKD, but there are treatments that can help slow the disease. You can use our information to talk to your doctor about which treatments are best for you.

What are the treatment options for CKD?

The main goal of treatment for CKD is to slow the disease (i.e., stop your CKD from getting worse).

Treatment also aims to:

- manage any underlying causes, like diabetes and high blood pressure
- treat other problems, like anaemia.

Your doctor will recommend different types of medicines to achieve these goals.

If you have end-stage kidney disease, your kidneys no longer work well enough to meet your body's needs. In this case, you will be offered kidney replacement therapy.

CKD puts you at higher risk of serious conditions like heart disease, heart failure, and stroke. So maintaining a healthy lifestyle is important.

Being educated about CKD and the different treatment options is very important. Understanding your condition properly and being actively involved in your management can help you achieve your treatment goals.

Slowing CKD progression

Your doctor will usually recommend taking a type of medicine that can help stop your CKD from getting worse. These include:

- ACE inhibitors
- Angiotensin-II receptor antagonists (ARBs)
- SGLT-2 inhibitors.

The type of medicine your doctor prescribes will depend on factors such as whether:

- your CKD is progressing
- you have a lot of protein in your urine (kidneys leak protein when they've been damaged)
- you have other conditions like diabetes, high blood pressure, or heart failure.

You may have heard of these medicines being used to treat other conditions too.

ACEs inhibitors and ARBs are medicines that are normally used to treat blood pressure. And SGLT-2 inhibitors may be prescribed for patients with diabetes. But research shows that these medicines can also benefit people with CKD who don't have these conditions.

In some cases, your doctor may also recommend combining these medicines to give your kidneys more protection.

Treating other conditions

People with CKD often have other medical conditions like diabetes or high blood pressure. Managing these properly is important to slow further damage to the kidneys.

Protecting your heart and blood vessels

Having CKD puts you at higher risk of developing heart disease. So your doctor may prescribe medicines called **statins** to help lower this risk.

Statins are normally prescribed for people who have high cholesterol. But research shows they still benefit patients with CKD who have normal cholesterol levels too.

Your doctor will also discuss **lifestyle** changes you can make to reduce your risk of heart problems. For example, they may advise:

- stopping smoking if you currently are
- losing weight if you're overweight or obese
- eating healthily
- keeping physically active.

Treating problems caused by CKD

CKD can cause different problems throughout the body. So you may need other treatments to help manage these.

Below are some examples of problems caused by CKD, and their treatments.

- **Anaemia:** Anaemia is when you don't have enough red blood cells. This can make you feel very tired and become breathless easily.

  Anaemia often happens to people with CKD because the kidneys aren't making enough of a hormone called erythropoietin (**EPO**). EPO helps regulate how many red blood cells your body makes.

  Treatment for anaemia involves getting injections with a medicine that works like EPO (called an erythropoiesis-stimulating agent).

  Iron is also important for making red blood cells. So if you are low on iron you will need iron replacement. This may be with tablets, an injection, or with a drip (known as an IV infusion).
- **Renal osteodystrophy (weakened bones):** Vitamin D, phosphate, and calcium are all essential for strong bones. If your kidneys are damaged, your supply of these vitamins and minerals can get out of balance and cause problems.

  In particular, the calcium level in your blood may get too low. This triggers the release of a chemical called parathyroid hormone (PTH).

  PTH removes calcium from your bones to increase levels in your blood. Over time, this can lead to bone pain, bone deformities, and weakness.

  To treat these imbalances, your doctor will recommend eating a **low** calcium and phosphate diet (e.g., a diet that is low in processed meats and dairy products, and high in fresh fruit and vegetables). This is to stop levels of these minerals getting too high.

  If this doesn't help, you may be offered a **phosphate binder**. This is a type of medicine that lowers the amount of phosphate in your blood.

  Your doctor may also recommend taking a **vitamin D supplement** if you have low levels of vitamin D.
- **Metabolic acidosis (high levels of acid in the blood):** If your kidneys aren't removing enough acid from your body, you could develop a condition called metabolic acidosis.

  Often there are no clear symptoms of this. But if your blood becomes too acidic, you might develop symptoms such as a fast heartbeat, confusion, nausea, and breathing changes.

  Treatment with an **antacid** called sodium bicarbonate can help if you develop high acid levels.

Treating end-stage kidney disease

Over time, damage to the kidneys usually gets worse and leads to **end-stage kidney disease**. This is the last stage of CKD where your kidneys no longer work well enough to meet your body's needs.

If this happens, you will need **kidney replacement therapy**. There are two options for this:

- dialysis: this is a treatment that removes waste products and extra fluid from your blood.
- kidney transplantation: this is a surgery where your damaged kidneys are replaced with a new, healthy kidney.

Your doctor will discuss kidney replacement therapy with you before you reach end-stage kidney disease. This means there will already be a treatment plan in place if you reach this stage.

Choice of treatment will depend on different factors such as age, whether you have other conditions, and your preferences.

What happens next?

CKD is a serious long-term illness. There is no cure as damage to the kidneys is irreversible. But diagnosing and treating CKD as **early** as possible can help to slow further damage. Early treatment will help you to live a healthier, longer life.

Your doctor will want to follow up with you regularly. This is to check whether your CKD is progressing. How often you see your doctor will depend on how severe your condition is.

It's important that you're **actively** involved in your care. This is because CKD is a serious condition that needs to be managed properly. Speak to your doctor to learn more about your condition. You can also ask them any questions you have.

Many people often join self-help groups to learn about CKD. These groups allow you to share your experiences with other people who have the condition too.

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