
Kidney failure

Summary

- Kidney failure can be sudden or gradual.
 - Acute kidney failure is often short-lived, but requires treatment until kidney function returns.
 - Chronic kidney disease develops over time and is related to a number of risk factors, including diabetes and high blood pressure.
 - If chronic kidney disease is detected early, medication and lifestyle changes can increase the life of your kidneys.
 - Treatment options for kidney failure include dialysis, transplant or non-dialysis supportive care.
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What is kidney failure?

Kidney failure, also known as end-stage kidney disease, occurs when the kidneys are no longer able to adequately remove waste from your blood and control the level of fluid in your body. Kidney failure can happen suddenly or gradually. People with kidney failure need dialysis or a kidney transplant to stay alive.

If you have kidney disease, it does not mean that you will develop kidney failure. One in ten Australians aged 18 and over (approximately 1.7 million people) has at least one sign of chronic kidney disease, and over 23,000 Australians receive dialysis or a kidney transplant for kidney failure.

You can lose up to 90 per cent of your kidney function before experiencing symptoms. In many cases, the signs of disease aren't noticed until the kidneys are close to failure.

Symptoms of kidney disease

In the early stages of kidney disease, people can have no symptoms. In fact, some people have no symptoms until over 90 per cent of their kidney function has gone. This is unfortunate because early detection of kidney disease and treatment is the key to preventing kidney failure.

Symptoms of kidney disease can include:

- tiredness
- loss of appetite
- difficulty sleeping
- headaches
- lack of concentration
- shortness of breath
- nausea and vomiting
- changes in the amount and number of times urine is passed
- changes in the appearance of urine or blood in the urine
- puffiness in the legs and ankles
- pain in the kidney area
- high blood pressure
- itching
- bad breath
- a metallic taste in the mouth.

These symptoms can be caused by other conditions, but if you are in a high-risk group for kidney disease, speak

with your doctor.

Treatment for kidney failure

The treatment choices for kidney failure include:

- dialysis
- kidney transplantation
- non-dialysis supportive care.

Dialysis or kidney transplantation is needed when there is less than 10 per cent of kidney function left. These options are also known as renal replacement therapy (RRT). Some people choose non-dialysis supportive care rather than dialysis or kidney transplantation.

Dialysis for kidney failure

Dialysis artificially removes waste from your blood. There are two forms of dialysis – haemodialysis and peritoneal dialysis. Peritoneal dialysis is further broken down into two main types, continuous ambulatory peritoneal dialysis (CAPD) and automated peritoneal dialysis (APD).

The choice of dialysis method depends of factors such as your age, health and lifestyle. Over 2,000 Australian adults start renal replacement therapy each year.

Kidney transplant

A kidney transplant is a treatment for kidney failure, but it is not a cure. A transplant offers a more active life, and freedom from dialysis and restrictions on fluid and dietary intake. It is important to remember that a new kidney requires a lifetime of management and care.

Non-dialysis supportive care for kidney failure

Non-dialysis supportive care is the treatment choice for kidney failure when a person has decided, in consultation with their healthcare team, that the options of dialysis and transplant are not appropriate for them.

Non-dialysis supportive care means that your care continues to be supervised and supported by health professionals. You may have medications and a restricted diet to improve your quality of life. Non-dialysis supportive care will not artificially prolong your life when your kidneys fail completely.

Causes of kidney failure

Some of the causes of kidney failure include:

- **diabetes** (diabetic kidney disease) – even if it is well managed, diabetes can cause kidney damage
- **high blood pressure** (hypertension)
- glomerulonephritis – swelling or inflammation of the tiny filtering units (nephrons) in the kidney. Also known as nephritis
- **polycystic kidney disease** – an inherited condition that causes thousands of cysts to form in the kidneys
- **urinary reflux** (reflux nephropathy) – a bladder-valve problem that allows urine to flow back into the kidneys, causing scarring
- medications – some drugs such as lithium and cyclosporin can cause kidney failure. Continued misuse of compound analgesic preparations (now banned) was once a common cause of permanent kidney damage. Non-steroidal anti-inflammatory drugs (NSAIDs), taken in normal therapeutic doses, may occasionally cause acute kidney failure
- medullary cystic kidney disease (MCKD) – an inherited kidney disease that leads to the kidneys gradually losing their ability to work properly due to cysts in the centre of the kidneys.

Chronic kidney disease (CKD)

Often, the development of kidney disease is gradual and kidney function worsens over a number of years. If you permanently lose more than 40 per cent of your kidney function, it is called 'chronic kidney disease' (CKD). This can lead to kidney failure.

You are more at risk of CKD if you:

- have diabetes
- have high blood pressure
- are obese
- are over 60 years of age
- have a family history of end-stage kidney disease or hereditary kidney disease in a first or second degree relative
- have established heart problems (heart failure or a past heart attack) or have had a stroke
- smoke
- have a history of acute kidney injury
- are of Aboriginal or Torres Strait Islander origin.

The risk of CKD resulting in kidney failure depends on your level of kidney damage. If kidney disease is found early, medication, combined with diet and lifestyle changes, can prolong the life of your kidneys.

If you have one or more of the risk factors for developing CKD, it is important to ask your doctor to check your kidney function.

Acute kidney failure

A sudden drop in kidney function is called acute kidney failure. This can be life threatening and requires immediate treatment. Causes of acute kidney failure can be divided into three groups:

- pre-renal (decreases to the kidney's blood supply)
- renal (damage to the kidney itself)
- post-renal (obstructions in other parts of the urinary tract).

Acute kidney failure is often short-lived and many people with acute kidney failure need dialysis while they are waiting for their kidneys to recover. Sometimes, treatment is a matter of controlling blood pressure and blood chemistry, while waiting for kidney function to return.

The outcome for people with acute kidney failure depends on the underlying cause and presence or absence of other medical conditions. In cases where the cause is pre-renal or post-renal, the kidneys often recover well once the factor causing it is removed. Acute kidney failure is less common than chronic (ongoing) kidney failure.

Diagnosis of kidney failure

A number of tests can be used to measure kidney function. If CKD is found, tests may be used to determine:

- the cause of the kidney damage
- the amount of kidney damage
- treatment options.

Tests can include:

- blood tests to establish the estimated **glomerular filtration rate** (eGFR), which measures how well the kidneys filter wastes from the blood
- urine tests for albumin, blood, glucose and red or white blood cells
- a blood pressure check
- ultrasound, computed tomography (CT scan), x-ray and other imaging techniques to take pictures of your kidneys
- a kidney biopsy, where a needle is used to remove a small piece of kidney tissue for examination under a microscope.

Where to get help

- Your doctor
- Your local community health centre
- **Kidney Health Australia** helpline Tel. 1800 454 363

This page has been produced in consultation with and approved by:

Kidney Health Australia

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