Kidney Health® Australia

Estimated Glomerular Filtration Rate (eGFR)

What is eGFR?

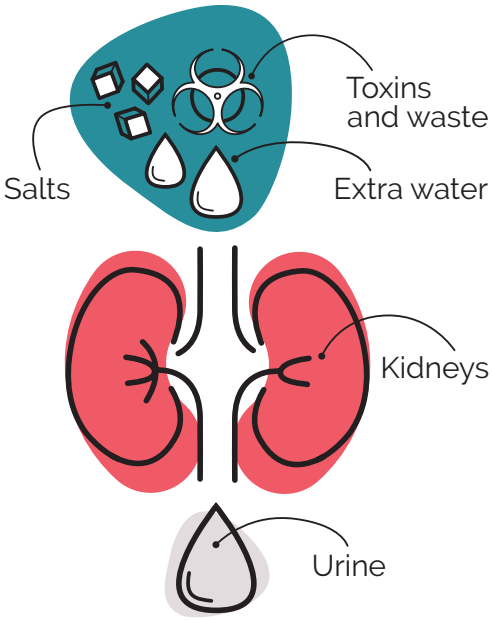
Your kidneys perform many tasks to keep your body healthy and balanced.

One of the main jobs of the kidneys is to filter your blood and remove waste products and extra water. The extra water and waste products then leave your body via the urine and the clean blood continues to go around your body.

How well your kidneys filter the blood is measured by the **glomerular filtration rate** or **GFR**. As GFR is difficult to measure in practice, GFR is usually reported as an estimated GFR (or eGFR).

When you have a **Kidney Health Check** the eGFR is found by a blood test ordered by your doctor.

eGFR measures kidney function.

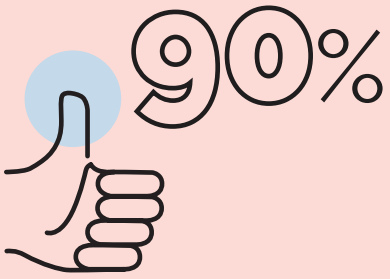


eGFR is considered the best overall measure of how well your kidney functions

eGFR is reported as a number which roughly equals the percentage of kidney function you have.

If your eGFR number is low, your kidneys are not working properly. Normal eGFRs vary but are usually over **90 millilitres** per minute.

eGFR is often looked at alongside other tests such as a urine test and blood pressure measurement. A urine test looks at the levels of protein in your urine, which can be a sign of kidney damage.



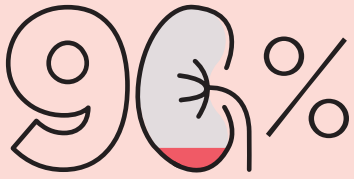
How is eGFR calculated?

- Your blood test results are calculated using an equation that considers your age, sex at birth and the levels of a waste product called creatinine in your blood.
- Creatinine is a waste product made by the muscles. It is usually removed from the blood stream by the kidneys before leaving your body with your urine.
- When your kidneys aren't working well, creatinine isn't removed and stays in the blood.
- A higher level of creatinine in the blood will result in a lower eGFR.

Your doctor may also test for other signs and conditions, including albuminuria, haematuria, high blood pressure and diabetes. This helps to decide if you have chronic or longer-term conditions causing kidney disease.

Things to note about eGFR:

- If you are under 18 years, eGFR is NOT reported on a blood test.
- If you are pregnant your result might be invalid.
- There are some other things that can effect an eGFR result.
- eGFR is calculated on a 'standardised' body size.
- If you have a small build or very large build, your doctor might adjust the calculations from the standard for your individualised result.



of kidney function can be lost without experiencing any symptoms

What does my eGFR result look like?

Your eGFR result shows as a series of numbers, characters and letters on your pathology report. For example, eGFR results of 90 or greater will show the actual value as:

eGFR ≥ 90 mL/min/1.73m²

For an eGFR lower than 90, the pathology report will show the actual value, e.g.

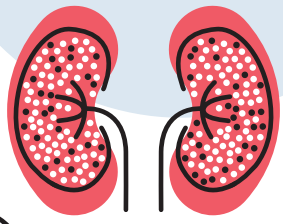
eGFR = 53mL/min/1.73m².

What if my eGFR is above 60?

If your eGFR is between 60 mL/min/1.73m² and 90 mL/min/1.73m² in at least two blood tests over 3 months, your kidney function is normal or close to normal.

Unless additional tests show signs of kidney damage, it is unlikely that your healthcare team will tell you that you have CKD. However, your doctor may still decide to monitor your kidney function, especially if you are at risk of developing CKD.

Kidney damage is tested by a urine sample, ultrasound, or biopsy and shown as albuminuria, haematuria, or abnormal kidney ultrasound or biopsy results.



60% **or less needs further testing and monitoring by your doctor.**

Your doctor may prescribe medications to help your kidneys.

What if my eGFR is below 60?

A value below 60 mL/min/1.73m² suggests some loss of kidney function. To confirm this, your doctor will most likely repeat the blood test.

Monitoring changes to your eGFR also tells your doctor how fast or slowly your condition is progressing. For a diagnosis of chronic kidney disease, you need to have either an eGFR of less than 60 mL/min/1.73m² on 2 - 3 tests over three months AND/OR signs of kidney damage.

Along with your blood test, your doctor will do some tests to check for signs of kidney damage. The most common test is done on your urine (wee), looking for blood or protein in the urine.

Kidney damage can also be found on an ultrasound of your kidneys, or a biopsy of your kidneys. Any abnormal kidney ultrasound or biopsy can also indicate kidney damage.

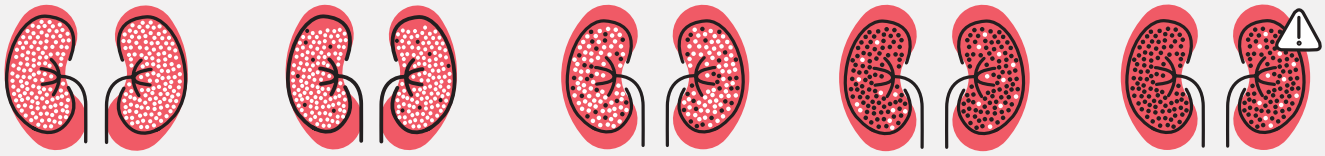
If these tests are abnormal, even if your eGFR is above 60mL/min/1.73m², you may still be diagnosed with chronic kidney disease (CKD).

Stages of chronic kidney disease

Kidney function can be classified into stages depending on your eGFR.

What are the stages of CKD?

There are five stages of CKD. Your healthcare team will be able to tell you your stage of CKD.



Healthy kidney	Stage 1 - 2	Stage 3	Stage 4	Stage 5
Over 60% working	Over 60% working	30-59% working	15-29% working	Less than 15% working
eGFR > 60	**eGFR > 60**	**eGFR 30-59**	**eGFR 15-29**	**eGFR < 15**
no kidney damage*	kidney damage* present	kidney damage* may be present	kidney damage* may be present	kidney failure

* Kidney damage can show as any of the following: albumin in the urine (albuminuria), blood in the urine (haematuria), or abnormal results on tests such as ultrasound or kidney biopsy.

Your eGFR and albuminuria results are combined to provide an overall picture of how well your kidneys are working. If you have chronic kidney disease your doctor will be able to advise you on how to best manage your conditions.

For more information about Chronic Kidney Disease please see factsheet What is Chronic Kidney Disease (CKD).

When should I have my kidney health checked?

Your doctor should offer you a Kidney Health Check once a year if one or more of the following apply to you:

Diabetes

High blood pressure

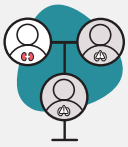
First Nations Australian aged 18 and over

Your doctor should offer you a Kidney Health Check every two years if one or more of the following apply to you:

Current or past smoker/vaper

Very overweight or obese

Had a stroke, heart attack or have heart failure



Family history of kidney failure, dialysis, or kidney transplant

History of acute kidney injury

Non-Indigenous Australian aged 60 and over

What is a Kidney Health Check?

A **Kidney Health Check** is quick and simple. You can have a Kidney Health Check at your local health centre, often as part of a regular check-up. It includes three parts:

A **blood pressure** check to see if you have high blood pressure. High blood pressure can damage your kidneys and kidney disease can cause your blood pressure to increase.

A **urine test** to see how much albumin (protein) is present in your urine. Albumin in your urine is a sign of damage or scarring in the kidneys. This test is called urine-albumin creatinine ratio (uACR).

A **blood test** to check your kidney function. This test will measure how well your kidneys are filtering your blood and is called estimated glomerular filtration rate (eGFR).

Things to remember:

- ✓ **Your eGFR measures how well your kidneys filter the wastes from your blood and is the best overall measure of kidney function.**
- ✓ **For a CKD diagnosis you need to have either an eGFR under 60 mL/min/1.73m² on at least 2 tests over three months AND/OR signs of kidney damage.**

What does that word mean?

Acute kidney injury – A loss of kidney function that happens quickly which may or may not be permanent.

Albuminuria – Occurs when albumin is present in the urine. There are filters in the kidneys that prevent large molecules, such as albumin, from passing through. If these filters are damaged, albumin passes from the blood into the urine.

Chronic kidney disease (CKD) – A term used widely to describe kidney damage or reduced kidney function (irrespective of the cause) that persists for more than three months. Sometimes CKD leads to kidney failure, which requires dialysis or a kidney transplant to keep you alive.

Creatinine – Waste that is produced by the muscles. It is usually removed from your blood by your kidneys and passes out in your urine (wee). When your kidneys aren't working properly, creatinine stays in your blood.

Diabetes – A chronic disease caused by problems with the production and/or action of insulin in the body which helps control blood sugar levels.

Haematuria – Blood in your urine. It can turn urine a red or dark cola colour, which is visible OR may only be found by a urine test (microscopic haematuria). Blood in the urine is a common sign of urinary tract infections but can be the first sign of a problem with the kidneys or the bladder.

Kidney biopsy – A small piece of kidney tissue is removed for testing and examination under a microscope.

Kidney failure – The stage of kidney disease when your kidneys have stopped working, so treatment such as dialysis or a transplant is needed to sustain life. Previously referred to as end stage kidney disease (ESKD); end stage kidney/renal failure (ESKF or ESRF), or stage 5 CKD.

Urine – The name for excess fluid and waste products that are removed from the body by the kidneys. Commonly called wee.

Ultrasound scan – An imaging procedure that uses sound waves to show structures and functions inside your body. This is a diagnostic test, often used to measure the size of the kidney.

For more information

To access information about CKD, or kidney health, please scan the QR code.

Free Kidney Helpline 1800 454 363
kidney.org.au

If you have a hearing or speech impairment, contact the National Relay Service on **1800 555 677** or **relayservice.com.au**
For all types of services ask for **1800 454 363**

This educational resource is supported by a sponsorship provided by Boehringer Ingelheim and Eli Lilly Alliance.

This is intended as a general introduction to this topic and is not meant to substitute for your doctor's or Health Professional's advice. All care is taken to ensure that the information is relevant to the reader and applicable to each state in Australia. It should be noted that Kidney Health Australia recognises that each person's experience is individual and that variations do occur in treatment and management due to personal circumstances, the health professional and the state one lives in. Should you require further information always consult your doctor or health professional.