

Fact sheet

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Estimated Glomerular Filtration Rate (eGFR)

What is eGFR?

eGFR stands for 'estimated Glomerular Filtration Rate.' The glomerular filtration rate measures how well your kidneys filter the wastes from your blood and is the best overall measure of kidney function. It helps determine if you have any kidney damage. If your filtration rate is low, your kidneys are not working properly. Normal filtration rate in young adults is about 90–100 millilitres every minute.

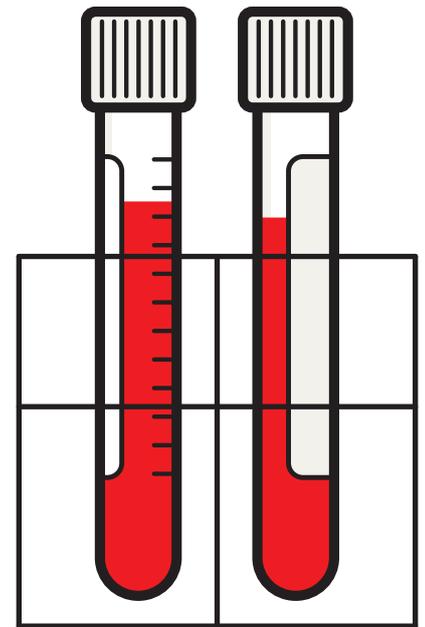
It is difficult to calculate the exact rate at which your kidneys are working so a special formula has been developed to estimate your GFR (eGFR). This formula uses your age, gender and the level of creatinine in your blood to estimate your GFR.

Creatinine is a waste product made by the muscles. It is usually removed from the blood by the kidneys before passing out in the urine. When your kidneys aren't working well, more creatinine stays in the blood.

If your doctor orders a blood test result to learn more about your kidney function, creatinine will be measured and an eGFR result will be provided. It is not reported in children aged less than 18 years, if you are known to be pregnant or if there are other reasons for the result being invalid.

Your eGFR result helps your doctor to determine how well your kidneys are working. Your doctor may also test for other signs and conditions, including albumin in your urine (albuminuria), blood in the urine (haematuria), high blood pressure and diabetes. This helps to decide if you have chronic or longer term conditions causing kidney disease.

For more information see fact sheets *Albuminuria*, *Blood in urine*, and *What is chronic kidney disease*.



What does my eGFR result look like?

Your eGFR is reported in millilitres per minute which is written as mL/min/1.73m² (the "1.73m²" indicates a result expressed relative to body surface area). A normal GFR in a young adult is greater than

90 mL/min/1.73m². eGFR results of 90 or greater may be shown on a pathology report as the actual value or as eGFR ≥ 90 mL/min/1.73m², depending on the preference of the pathology laboratory. If your eGFR is

less than 90, the actual value will be shown. For example, a result of 105 may be shown as 105 mL/min/1.73m² or as ≥ 90 mL/min/1.73m². A result of 67 would be shown as 67 mL/min/1.73m².

The symbol ≥ means 'greater than or equal to'.

What if my eGFR is above 60?

If your result is over 60 mL/min/1.73m², your kidney function is normal or close to normal. Current kidney damage is excluded, unless other tests for kidney damage are abnormal.

For example, your doctor may also perform some tests on your urine to check for signs of kidney damage. These tests are typically looking for blood in the urine, or protein in the urine. If these tests are abnormal for more than three months, even if your eGFR is above 60mL/min/1.73m², you may still be diagnosed with Chronic Kidney Disease (CKD).

If your eGFR is above 60 mL/min/1.73m² and there are no signs of kidney damage, your doctor may still decide to monitor your kidney function and/or discuss healthy lifestyle choices.

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 CKD diagnosis you need to have either an eGFR under 60 mL/min/1.73m² on 2-3 tests over three months, OR signs of kidney damage. Kidney damage is tested by urine sample, ultrasound, or biopsy and shown as protein in your urine (albuminuria), blood in your urine (haematuria), or abnormal kidney ultrasound or biopsy results).

Stages of chronic kidney disease

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

Stage 1	A normal eGFR greater than or equal to 90 mL/min/1.73m ²
Stage 2	Slightly decreased eGFR between 60–89 mL/min/1.73m ² <i>If your kidney function is at stage 1 or 2, you only have CKD if you have albuminuria, haematuria, a pathological abnormality or a structural abnormality.</i>
Stage 3a	Mild–moderate decrease in eGFR between 45–59 mL/min/1.73m ²
Stage 3b	Moderate–severe decrease in eGFR between 30–44 mL/min/1.73m ²
Stage 4	Severe decrease in eGFR between 15–29 mL/min/1.73m ²
Stage 5	Kidney failure as eGFR decreases to less than 15 mL/min/1.73m ² or dialysis is started

Your eGFR and albuminuria results are combined to provide an overall picture of how well your kidneys are working. Your doctor uses this information to decide which treatment is best for you. Treatment also depends on the cause of your kidney damage. Controlling diabetes and high blood pressure can help to slow or prevent further kidney damage. It also reduces the risk of other health problems, such as heart attacks and strokes.

See the *What is chronic kidney disease* fact sheet for more information.

Who should have their kidneys checked?

Chronic kidney disease is more common if you:

- have high blood pressure
- have diabetes
- had a stroke, heart attack or have heart failure
- have family history of kidney failure, dialysis, or transplant
- are very overweight or obese
- are a current or former smoker
- are over 60 years of age
- are a First Nation Australian aged 18 years or over
- have had history of an acute kidney injury



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 2-3 tests over three months, OR signs of kidney damage.
- Controlling diabetes and high blood pressure can help to slow or prevent further kidney damage. It also reduces the risk of other health problems, such as heart attack and stroke.

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.

Body mass index (BMI) - An approximate measure of your total body fat. It is worked out by dividing your weight in kilograms by your height in metres squared (m²).

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.

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

Haematuria - Blood in your urine. It can turn urine a red or dark cola colour, which is visible to the eye 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.

Ultrasound scan - An imaging procedure that uses sound waves to show structures and functions inside your body.

For more information about kidney or urinary health, please contact our free call Kidney Helpline on 1800 454 363.

Or visit our website kidney.org.au

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.

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