

**Fact sheet**

# Heart Disease, Stroke, Diabetes and Kidney Disease



**Chronic kidney disease (CKD) is called a 'silent disease' as there are often no warning signs. You can lose up to 90 percent of your kidney function before getting any symptoms.**

If you have diabetes, or heart disease, or you have had a stroke, you are at an increased risk of CKD. Detection and early treatment of CKD is very important to slow down any damage to your kidneys. This will also hopefully mean that you will not need a kidney transplant or dialysis. Treatment will also reduce your risk of dying from one of these conditions.

This fact sheet explains how CKD, heart disease, stroke and diabetes are all connected. It also talks about how to check your risk factors and provides some tips on how to reduce your risk of developing these conditions.

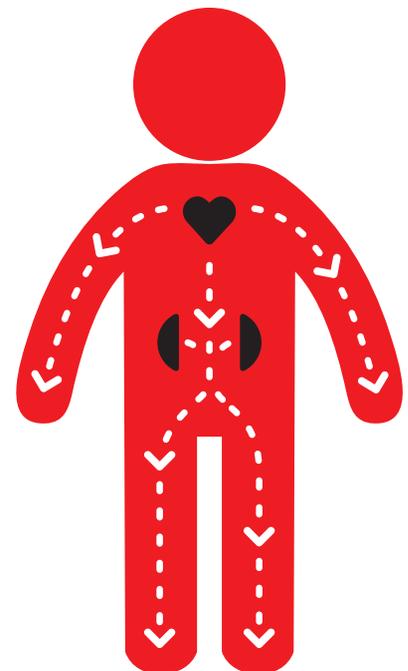
## Heart disease, stroke and chronic kidney disease

Heart failure, heart attack, abnormal heart rhythm, high blood pressure, chest pain (angina), heart valve problems and stroke are all part of a condition called cardiovascular disease. If you have CKD you are at increased risk of having cardiovascular disease.

## Why does CKD increase my risk of cardiovascular disease?

There are many reasons why CKD can lead to cardiovascular disease. If you have advanced CKD, your body may be unable to control levels of important minerals, such as potassium and sodium (salt) which we get from a wide range of foods. Too much potassium may cause an abnormal heart rhythm. Too much salt can increase your blood pressure, which can lead to a heart attack or a stroke.

CKD often causes anaemia, which is a drop in the number of red blood cells that carry oxygen around your body. Your heart has to work harder to maintain oxygen levels. If the heart works too hard, the heart muscle becomes larger which can lead to heart failure. Anaemia also increases your risk of having a stroke.



## Check your risk factors for cardiovascular disease

If you have CKD, these factors may also increase your risk of developing cardiovascular disease.

Things you may be able to change:

- Type 2 diabetes
- High blood pressure
- High cholesterol
- Smoking
- Being overweight
- Poor diet and lack of exercise
- Feeling depressed and not having enough support from family or friends.

Things you can't change:

- Being male
- Getting older
- Hormonal changes such as menopause
- Family history.

One of the most important things you can do is talk to your doctor about your risk of cardiovascular disease. You can then have your risk factors measured. Your doctor can also talk to you about what treatment is right for you.

## Blood pressure and CKD

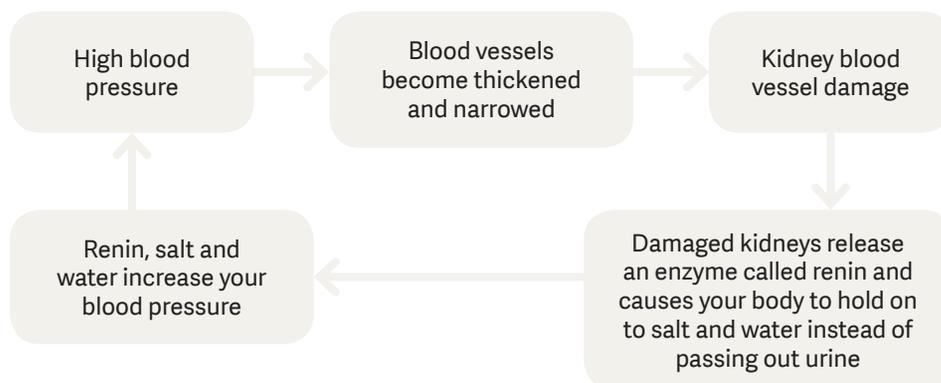
Blood pressure is the pressure of your blood in your arteries as it is pumped around your body by your heart. Your blood pressure changes to meet the demands of your body. It is usually at its highest when you exercise, or are excited or nervous. Blood pressure is usually lowest when you sleep.

Blood pressure is usually measured by wrapping an inflatable pressure cuff around your upper arm. Blood pressure has two numbers. The systolic (the first number) is the heart pumping and the diastolic (the second number) is the heart at rest. Your blood pressure should normally be less than 120 over 80. Your doctor or health professional may record this as 120/80 mmHg.

If you have CKD, diabetes or cardiovascular disease your blood pressure target may be different to 120/80mmHg. Your doctor will talk to you about what your target blood pressure should be.

## How does blood pressure affect my kidneys?

High blood pressure (also called hypertension) can cause kidney damage and kidney damage can cause high blood pressure. This is explained in this diagram.



## How will I know if my blood pressure is high?

Although some people with high blood pressure can get headaches, feel dizzy or have nosebleeds, you may not have any warning signs. The only way to know if your blood pressure is high is to have it checked regularly by a health professional.

One high blood pressure reading is not enough to confirm that you have high blood pressure. You need to have several high readings taken on different days, at different times, before high blood pressure can be diagnosed.

See the *Blood Pressure and Chronic Kidney Disease* fact sheet for more information on high blood pressure and how to reduce your risk.

## Diabetes and CKD

Diabetes is a condition where your pancreas has problems making insulin or it makes insulin that does not work properly. Insulin is a hormone that controls the amount of sugar (glucose) in your blood. There are three main types of diabetes.

- Type 1 diabetes - your pancreas stops making insulin, and daily insulin injections are needed to stay alive. Type 1 diabetes usually affects people aged less than 30 years. About 10-15 percent of all cases of diabetes are Type 1.
- Type 2 diabetes - the pancreas does not make enough insulin, or your body cannot use the insulin properly. This is the most common form of diabetes, accounting for 85-90 percent of all cases. Type 2 diabetes usually affects older adults,

but is becoming common in younger people, even children. If you have Type 2 diabetes you may not need insulin injections. You will usually be able to manage your condition by making lifestyle changes or taking medication.

- Gestational diabetes – a type of diabetes that develops only during pregnancy. Gestational diabetes can increase your risk of developing Type 2 diabetes later.

## How does diabetes affect my kidneys?

Diabetes can damage the kidney filters (nephrons), which leads to diabetic kidney disease. This is also called diabetic nephropathy. About one in three of all people with diabetes develop diabetic kidney disease. Diabetic kidney disease is a serious disease, and it is the most common reason why people need dialysis or a kidney transplant. If you have diabetic kidney disease you

are also more likely to develop other diabetic complications such as nerve damage and eye damage.

Diabetes can also damage the nerves in other parts of the body. When the bladder is affected, it may be difficult for you to pass urine. If urine builds up in your bladder, the pressure can make it flow back into your kidneys causing scarring and kidney damage.

Diabetes can cause your urine to have a high sugar content. This encourages growth of bacteria and can cause kidney infections. If you have diabetes you should make sure you get treatment for any infections immediately.

## Check your risk factors for diabetic kidney disease

If you have diabetes, you are at increased risk of developing diabetic kidney disease if you:

- have high blood pressure
- have high blood glucose levels
- smoke
- have a family history of high blood pressure
- have a family history of kidney disease

See the *Diabetic Kidney Disease* fact sheet for more information.

## How do I know if I have kidney disease?

Unfortunately, kidney disease may show no symptoms until you have lost up to 90 percent of your kidney function. Kidney function can be measured by a simple blood test, which is known as the glomerular filtration rate (or GFR). GFR is difficult to measure, so it is estimated using a special formula, and the result is called the estimated glomerular filtration rate (or eGFR).

Your eGFR measures how well your kidneys filter the wastes from your blood. It is the best overall measure of kidney function. If your eGFR is low, your kidneys are not working properly. A normal eGFR in young adults is about 90–100. If you have an eGFR that is lower than 60 for more than three months it means that you have CKD.

See the *Estimated Glomerular Filtration Rate (eGFR)* fact sheet for more information.

The first symptoms of CKD may include:

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

- blood in urine
- tiredness
- difficulty sleeping
- itching

See the *Chronic Kidney Disease* fact sheet for more information.

## Check your risk factors for CKD



Diabetes



Family members with kidney failure



60+ Over 60 years old



High blood pressure



Very overweight or obese (Body Mass Index BMI – over 30 kg/m<sup>2</sup>)



Of Aboriginal or Torres Strait Islander origin



Established heart problems (heart failure or heart attack) and/or have had a stroke



Smoke cigarettes



Acute kidney injury earlier in your life

## Speak to your doctor about a kidney health check

Your doctor can test the health of your kidneys using three simple tests:



Urine tests



Blood tests



Blood pressure test

## How can I reduce my risk of CKD, cardiovascular disease and diabetes?

There are a number of lifestyle choices that will reduce your risk of CKD, cardiovascular disease, and diabetes:

- If you have **diabetes**, closely watch your blood sugar levels. Visit your diabetes health care team regularly.
- If you have **high blood pressure**, take your medication exactly as prescribed and have your blood pressure taken regularly.
- Maintain healthy **cholesterol** levels, by avoiding fatty and fried foods.
- Be a **non-smoker** (for information on quitting smoking, call the Quitline on 13 7848).
- **Reduce your salt intake.** Avoid adding salt to cooking, buy low salt products and avoid takeaway foods.
- Achieve and maintain a **healthy body weight.** Your doctor or an Accredited

Practising Dietitian can help if you are having problems with your weight.

- Limit your **alcohol** intake to no more than two standard drinks per day.
- Find 30 minutes to do **exercise** at least 3 times per week. Walking, bike-riding and swimming are great options. It is recommended to slowly increase your activity level.
- Consider if you can reduce **stress** in your life. Ideas can be found at <http://www.healthdirect.gov.au/stress> or call Health Direct on 1800 022 222.

You can also talk to your doctor about lifestyle changes that you can make to reduce your risk of CKD, cardiovascular disease and diabetes.



#### THINGS TO REMEMBER

- Kidney disease, heart disease, stroke and diabetes are all connected
- There are things that you can do to reduce your risk of developing these conditions
- Speak to your doctor if you have any risk factors for these conditions

## What does that word mean?

**Blood pressure** - The pressure of the blood in the arteries as it is pumped around the body by the heart.

**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 (m<sup>2</sup>).

**Cardiovascular disease** – Includes all disease and condition of the heart and blood vessels, such as arteries and veins. The most common conditions include heart attack, heart failure, stroke, blockages in the blood vessels and vascular kidney disease.

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

**Diabetic nephropathy** – Another name for diabetic kidney disease.

**Enzymes** – Proteins made by cells in our body that start chemical reactions. Your kidneys use the enzyme called renin to control the levels of water and salt in your body. Many are used to break down the foods we eat so our body can use them.

**Hypertension** – High blood pressure. High blood pressure can cause chronic kidney disease and chronic kidney disease can cause high blood pressure.

**Insulin** – A hormone made by our pancreas. Insulin moves glucose (sugar) from our bloodstream into our body cells which use it to give us energy. Diabetes means the body does not make insulin (Type 1) or does not make enough insulin, or the insulin it does make does not work well (Type 2).

**Renin** – An enzyme made by the kidneys that helps to control blood

pressure by monitoring water and salt levels in the body.

**Stroke** - When blood supply to the brain is interrupted. When brain cells do not get enough blood supply, they die. A stroke is a life threatening emergency.

The **FAST** test is an easy way to recognise and remember the most common signs of stroke.

**F**acial weakness – check their face. Has their mouth drooped?

**A**rm weakness – can they lift both arms?

**S**peech difficulty – is their speech slurred? Do they understand you?

**T**ime – is critical. If you see any of these signs, call 000 straight away.

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

For more information about kidney or urinary health, please contact our free call Kidney Health Information Service (KHIS) on 1800 454 363.

Or visit our website [kidney.org.au](http://kidney.org.au) to access free health literature.

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.



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