Kidney disease is called a ‘silent disease’ as there are often no warning signs. It is not uncommon for people to lose up to 90% of their kidney function before getting any symptoms. A sudden drop in kidney function is called acute kidney failure. It is often short lived and treatment is needed only for a short while. If kidney function worsens over a number of years, it is called chronic kidney disease (CKD).

People who have diabetes and/or cardiovascular disease are at an increased risk of CKD. Detection and early management of CKD is very important to slow down any damage to the kidneys, and to hopefully prevent the need for transplant or dialysis. Treatment will also reduce the risk of death from cardiovascular disease and diabetes.

**CARDIOVASCULAR DISEASE**

Cardiovascular disease includes all diseases and conditions of the heart and blood vessels, such as arteries and veins. The most common conditions include heart attack, heart failure and stroke. The link between cardiovascular disease and kidney disease is clearly established. People with kidney disease are up to 20 times more likely to die from a heart attack or stroke than they are to receive dialysis.

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 certain minerals, such as potassium and sodium (salt). Too much potassium may cause an abnormal heart rhythm and too much salt can increase your blood pressure. CKD often causes anaemia, which is a drop in the numbers of red blood cells. Your heart has to work harder to maintain oxygen levels. If the heart works too hard, the heart muscle becomes larger and this can lead to heart failure.

**Am I at risk of cardiovascular disease?**

Factors that increase your risk of developing cardiovascular disease include:

- being male
- advancing age
- being post-menopausal
- Type 2 diabetes
- CKD
- family history of cardiovascular disease
- high blood pressure
- high cholesterol or lipid levels
- smoking
- being overweight
- lack of exercise
- poor diet
- depression, social isolation and lack of support

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

Blood pressure is the pressure of the blood in the arteries as it is pumped around the body by the heart. Your blood pressure changes to meet the demands of your body. It is usually at its highest when we exercise and lowest when we sleep. It can also rise due to anxiety, excitement, activity or nervousness.

Blood pressure is closely related to kidney function. High blood pressure (also called hypertension) can cause kidney damage and kidney damage can cause high blood pressure. Untreated, it is a vicious circle.

### How is Blood Pressure Measured?

Blood pressure is usually measured by wrapping an inflatable pressure cuff around the 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. A typical blood pressure recording is 120/80 mmHg (said as “120 over 80” or “120 on 80”). If you have diabetes, your blood pressure should be consistently kept below 130/80 mmHg. If you have CKD, your blood pressure should be consistently kept below 140/90 mmHg.

### Do I Have High Blood Pressure?

A single high reading is not enough to make a diagnosis of high blood pressure. You need to have a series of high readings taken on several different days, at different times, before high blood pressure can be confirmed.

### How Will I Know If My Blood Pressure is High?

Although some people with high blood pressure can get headaches, dizziness or nosebleeds, high blood pressure does not always give warning signs. Often high blood pressure is found accidentally. The only way to know if your blood pressure is high is to have it checked regularly by your doctor. You may have high blood pressure and feel perfectly well.

## Diabetes

Diabetes is a condition caused by problems with the production and/or action of insulin. Insulin is a hormone that controls the amount of sugar in your blood. In Type 1 diabetes, the pancreas stops making insulin, and daily insulin injections are required to stay alive. The onset of Type 1 diabetes usually occurs in people under 30 years. About 10-15% of all cases of diabetes are Type 1.

In Type 2 diabetes, the pancreas does not make enough insulin, and your body cannot use the insulin effectively. This is the most common form of diabetes, accounting for 85-90% of all cases. It usually affects older adults, but is becoming common in younger people, even children. People with Type 2 diabetes do not necessarily need insulin injections. They can usually manage their condition by making lifestyle changes or taking tablets.
How does diabetes affect the kidneys?
Diabetes can damage the kidney filters, leading to diabetic kidney disease (also called diabetic nephropathy). About one third of all people with diabetes develop diabetic kidney disease, and between 10 and 20% die of kidney failure. This is a serious disease and may worsen other diabetic complications such as nerve and eye damage, as well as increasing the risk of cardiovascular disease.

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

Diabetes can cause urine to have a high sugar content. This encourages growth of bacteria and kidney infections may occur. People with diabetes must take special care to make sure any infections are treated immediately.

Am I at risk of 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 (particularly in the early stages of diabetes)
• smoke
• have a family history of high blood pressure
• have a family history of kidney disease

WHAT ARE THE SIGNS OF KIDNEY DISEASE?
Unfortunately, kidney disease often shows no signs until you have lost up to 90% of your kidney function. Kidney function can be measured by a simple blood test, which is known as the glomerular filtration rate (or GFR). As the GFR decreases, the kidneys are more damaged.

A GFR above 90 mL/min/1.73m² is good. A GFR less than 60 mL/min/1.73m² that persists for more than three months means you have CKD. Some signs of CKD include:

The first signs of CKD may be general and include:
• high blood pressure
• changes in the amount and number of times urine is passed, e.g. at night
• changes in the appearance of urine
• blood in the urine
• puffiness, e.g. legs and ankles
• pain in the kidney area
• tiredness
• loss of appetite
• difficulty sleeping
• headaches
• lack of concentration
• itching
• shortness of breath
• nausea and vomiting
• bad breath and a metallic taste in the mouth

KIDNEY HEALTH CHECK
A Kidney Health Check is a simple check of your blood pressure, your urine for protein, and a blood test to estimate your GFR (known as eGFR). If you have diabetes or high blood pressure, you should have a Kidney Health Check **every year**.
If you have cardiovascular disease, are a smoker, are overweight, have a family history of kidney disease, or are an adult of Aboriginal or Torres Strait Islander origin, it is important to see your doctor (GP) and get a Kidney Health Check at least **every two years.**

### WAYS TO REDUCE YOUR RISK

There are a number of lifestyle choices that will reduce your risk of further complications of CKD, cardiovascular disease, high blood pressure, or diabetes.

- If you have diabetes, closely monitor and control 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 monitored regularly.
- Maintain healthy cholesterol levels, avoid 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 Dietician 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.

For more information about Kidney or Urinary health, please contact our free call Kidney Health Information Service (KHIS) on 1800 454 363. Alternatively, you may wish to email KHIS@kidney.org.au or visit our website [www.kidney.org.au](http://www.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.

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If you have a hearing or speech impairment, contact the National Relay Service on 1800 555 677 or [www.relayservice.com.au](http://www.relayservice.com.au). For all types of services ask for 1800 454 363.