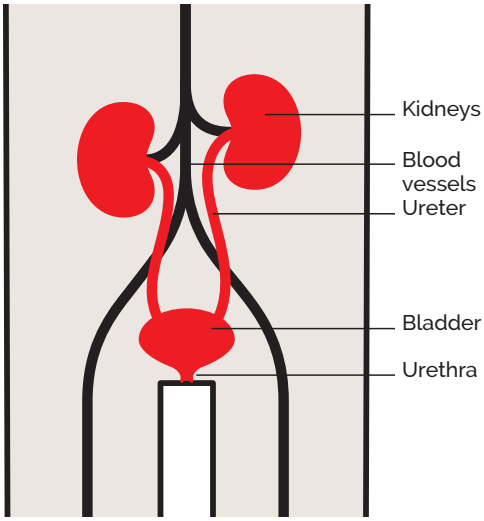
Kidney Health® Australia

Diabetic kidney disease

What is kidney disease?

Kidney disease is a medical condition in which your kidneys no longer clean your blood as well as they should.

Most people have two kidneys, and inside each kidney there are about one million tiny filters called nephrons. It is the nephrons' job to remove the excess water and waste products from your blood. The extra water and waste products leave your body via your urine. When you have long term (chronic) kidney disease (CKD), your nephrons do not work properly, and waste products build up in your body. CKD usually develops slowly over several years. CKD that progresses to the point where your kidneys stop working, is known as kidney failure.



What is diabetes?

Diabetes is a condition where the level of sugars in your blood is too high. After you eat, your body makes a hormone called insulin that helps the sugars to move from the food you eat, into the cells in your body. When you have diabetes, your body does not use its insulin properly (or does not make enough insulin) and the sugars stay in your blood. This leads to increased levels of blood sugar. There are three types of diabetes:

Type 1 diabetes
(sometimes called juvenile diabetes)

Is where your body does not make any insulin, and you need daily insulin injections to stay alive. Usually diagnosed in childhood, Type 1 diabetes is a condition you will have for life. Around **10 to 15 percent** of people with diabetes will have Type 1.

Gestational diabetes

Is a type of diabetes that develops only during pregnancy. Gestational diabetes can increase your risk of developing Type 2 diabetes later in life.

Type 2 diabetes

Is where your body either does not make enough insulin or does not use its insulin effectively. Type 2 diabetes is the most common type of diabetes, and usually diagnosed in adults. Lifestyle changes or taking oral medications (tablets) are common treatments for Type 2 diabetes, however, as the condition gets worse, you may need insulin injections. Around **85 to 90 percent** of people with diabetes will have Type 2.

What is Diabetic Kidney Disease?

Diabetic kidney disease (DKD) is a type of kidney disease caused by diabetes. Some doctors may also call this diabetic nephropathy. Usually, you will have had diabetes for several years before developing DKD.

50% of all people with diabetes will develop **DKD.**

How does diabetes cause kidney disease?

Over time, the high sugar levels in your blood can damage the blood vessels throughout your body. Damaged blood vessels commonly occur in the eyes, feet, and kidneys of people with diabetes. When the blood vessels in the kidneys are damaged, this can lead to DKD.

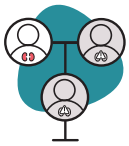
How do I know if I am at risk of developing DKD?

If you have diabetes, you are at risk of developing DKD.

Your level of risk will depend on:

The length of time you have had diabetes

The longer you have diabetes, the more likely it is you will develop DKD. This is because you will have had high blood sugar levels damaging your kidneys for a long time.



Your family history

If you have diabetes, and a family history of high blood pressure or heart disease you are at greater risk of DKD.

Your age

As you get older your kidneys' ability to filter blood will naturally reduce. If you are over 60 years (or over 30 if you are of Aboriginal or Torres Strait Islander origin) you are at increased risk.

What are the symptoms?

DKD often has no symptoms until it is well advanced. If you do have symptoms, they are likely to be of a general nature and include:

- Changes in the amount and number of times you **pass urine**
- **Blood** in your urine
- Feeling **tired**
- Not feeling **hungry**
- Having trouble **sleeping**
- **Headaches**
- Lack of **concentration**
- Shortness of **breath**
- **Nausea** and vomiting.

How is DKD diagnosed?

Three simple tests called a **Kidney Health Check** will tell your doctor if you have kidney disease.

A **blood test** to measure your eGFR (estimated glomerular filtration rate). eGFR is a measurement that shows how well your kidneys are filtering your blood. An eGFR less than 60 mL/min/1.73m^2 for more than three months, means that you have kidney disease. eGFR is roughly equal to your percentage of kidney function, i.e. an eGFR of 60 mL/min/1.73m^2 means your kidneys are functioning at about 60%.

A **urine test** to check how much albumin (a type of protein) is present in your urine. Healthy kidneys do not let proteins leak into your urine. In people with diabetes, protein in the urine is often one of the first signs that the kidneys are not working properly.

A **blood pressure check**. High blood pressure can damage your kidneys and damaged kidneys also increase your blood pressure – it goes both ways!

People with diabetes or high blood pressure should have a **Kidney Health Check** every year. For other people at elevated risk of kidney disease, every two years is OK.

I have DKD – what is next?

The good news is that there are things that you can do to improve your health if you are living with DKD. Making lifestyle changes can have a positive impact on your quality of life and help slow the progression of your DKD.

Here are some simple things you can do.

- **Eat a healthy diet**. This including vegetables, fruits, wholegrain cereals, lean meats, nuts and seeds, and low-fat dairy products.
- If you are thirsty, **drink water**. Water is the best choice for healthy kidneys. You should avoid high calorie sugar-sweetened beverages (like soft-drinks) and 'diet' drinks that are high in sodium (salt) at all costs.
- **Reduce your salt and sugar intake**.
  - Reduce the amount of salt you eat to less than 5g per day. Less salt helps to keep blood pressure under control. A healthy blood pressure is important for all people with DKD.
  - Avoid added sugar and highly processed foods. This is important for the health of your kidneys and for managing the amount of sugar in your blood.
- **Be active**. Try to be active for 30 minutes on most days. Things like brisk walking, bike riding, swimming, dancing, social tennis, golf, and household tasks like cleaning and gardening are great options to keep you healthy.
- Achieve and maintain a **healthy body weight**. Your doctor or an Accredited Practicing Dietitian can help if you are having problems with your weight.
- **Limit how much alcohol you drink**. Aim for no more than two standard drinks per day.
- **Be a non-smoker**. Stopping smoking is particularly important for your kidney health. If you smoke, **call the Quit Line on 13 78 48**.

Work with your doctor to:

- Control your blood sugar levels.
- Maintain a healthy blood pressure.
- Control the levels of protein in your urine (albuminuria).
- Control your cholesterol levels.

What are the treatment options for DKD?

Kidney disease is not reversible, but it is treatable if found early. The treatment you receive depends on what type of kidney disease you have, as well as how advanced your kidney disease is.

In the earlier stages of DKD, treatment includes a healthy diet, being active, stopping smoking, reducing your alcohol intake, and keeping your blood pressure and blood glucose levels below the targets your doctor has set for you. Your doctor may also prescribe medications to help control your blood pressure, cholesterol, and diabetes.

Some newer medications can significantly slow down the progression of DKD, so it is important to talk to your doctor about what options are right for you.

If your DKD progresses to kidney failure, you will need kidney replacement therapy (dialysis or a kidney transplant) to keep you alive.

Treatment can slow the progression of kidney disease and reduce the need for kidney replacement therapy – meaning it is possible to live a full life even if you have the disease.

There are three treatment options for kidney failure:

1. **A kidney transplant**, which is the best treatment for kidney failure. Kidney transplants can be from a living donor (often a family member or friend) or from a deceased donor (someone who has died and donated their organs).
2. **Dialysis**, a procedure where a machine does the work of your kidneys and will clean your blood for you. Dialysis usually occurs in a hospital where you will visit three times a week for sessions that last around 5 hours each. In some situations, you may be able to have dialysis at home.
3. **Comprehensive conservative care**. Your doctor will use medications to control the symptoms of kidney disease and make you comfortable. Comprehensive conservative care focuses on improving quality of life rather than prolonging it.

What are the common complications of DKD?

If you have DKD, other complications of diabetes can be worse, including:

Heart problems called cardiovascular disease.
This can include heart attack, heart failure, stroke, and blocked blood vessels.

Eye damage called retinopathy.
This is when then blood vessels in the retina at the back of your eye is damaged. Retinopathy can cause loss of vision or blindness.

Nerve damage called neuropathy.
Nerve damage can cause weakness in your arms and legs or problems in organs, such as your digestive system, heart, and sexual organs.

As your DKD progresses, you may also experience the common complications of kidney disease. These can include anaemia, restless legs, depression, or problems with your bones, amongst others. **Kidney Health Australia** has fact sheets on these topics if you need more information.

Things to remember:

- ✓ **Diabetic Kidney Disease, or DKD, is the name for kidney disease caused by diabetes.**
- ✓ **DKD is the most common cause of kidney failure.**
- ✓ **If you have diabetes, you should have a Kidney Health Check every year.**
- ✓ **If diagnosed with DKD, there are treatment options that can slow down the progression of your disease.**

What does that word mean?

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

Anaemia – A common complication of kidney disease. Anaemia occurs when there are not enough red blood cells in your blood, or the ones you do have are not working properly. Red blood cells carry oxygen around your body, so if you have anaemia, you can feel weak, tired, and short of breath.

Blood pressure – The pressure of the blood in your arteries as your heart pumps it around your body.

Cardiovascular disease – Includes diseases the heart and blood vessels, such as heart attack, heart failure, stroke, and vascular kidney disease.

Cholesterol – A naturally occurring, waxy substance made by your body.

eGFR – Estimated glomerular filtration rate. eGFR gives an estimate of how well your kidneys are filtering your blood for waste products.

Insulin – A hormone made by your pancreas. Insulin moves glucose (sugar) from your bloodstream into your body cells which use it to give you 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).

Neuropathy – Damage to the nerves leading to tingling, numbness, and pain in your hands and feet.

Retinopathy – damage to the blood vessels in the retina, located at the back of your eye due to high sugar levels. Retinopathy can lead to loss of vision and blindness.

Special Thanks! **This educational resource is supported by a sponsorship provided by Boehringer Ingelheim and Eli Lilly Alliance**

Kidney Health Australia

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
Have them connect you to the Free Kidney Helpline - 1800 454 363

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