

Once your kidneys fail, you may have:

- Fatigue
- Nausea, vomiting
- Swollen legs, ankles, feet or puffy eyes
- Weight gain due to fluid retention
- Breathlessness

### How can I prevent diabetic kidney problems?

- Carefully follow prescribed treatment to control blood sugar
- Control blood pressure to 130/80 mmHg
- Control cholesterol level with diet and medication if necessary
- Get urine checked for protein annually
- Get blood checked for kidney function
- Treat urinary tract infections early
- Adopt a healthy diet that is high in fibre, low in fat, sodium and cholesterol
- Aim to achieve and maintain healthy body weight
- Exercise 30 minutes a day, at least 3 times a week
- Quit smoking

Kidney disease is a silent killer! Signs and symptoms occur late in kidney disease. Screening tests are vital, especially if you are at high risk.

The progression of kidney disease can be slowed or stopped if detected earlier.

This is a public service provided by the National Kidney Foundation of Malaysia. All information is intended for educational purposes only. Please consult your doctor for further information.



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# Diabetes & Your Kidneys



**National Kidney Foundation of Malaysia**

## What is Diabetes?

Diabetes is a disorder where the pancreas produces insufficient insulin or the insulin is not effective. This insulin imbalance causes the body's blood sugar level to rise, and eventually causes damage to various organs in the body.

## Types of Diabetes

### Type 1 Diabetes

- Accounts for about 5% of people with diabetes
- Occurs mainly in young people below 20 years
- Caused by an inability of the pancreas to produce insulin or insufficient amounts
- These people need insulin injections

### Type 2 Diabetes

- Accounts for about 95% of people with diabetes
- Usually develops in people older than 30 years
- The body can't effectively use the insulin that is produced
- Controlled with diet, exercise and / or medications / insulin
- Linked to obesity and sedentary lifestyle

## What should my blood sugar level be?

The normal and target blood glucose ranges are:

### Normal blood glucose levels in people who do not have diabetes

Fasting	4.4 - 6.1 mmol/L
Non-fasting	4.4 - 8.0 mmol/L
Normal blood glucose levels in people who have diabetes	
Fasting	5.0 - 7.2 mmol/L
Non-fasting	<10.0 mmol/L

*Reference: American Diabetes Association Guidelines & The Malaysia Clinical Practice Guidelines 2005*

## What are the signs & symptoms of Diabetes?

- Frequent urination
- Excessive thirst
- Fatigue
- Unexplained weight loss
- Sudden vision changes
- Tingling or numbness in hands or feet
- Slow healing wounds

## What are the risk factors for Diabetes?

- A family history of diabetes
- Overweight
- Age over 40 years old
- History of big baby
- History of diabetes in pregnancy

## What are the complications of Diabetes?

- Kidney failure
- Heart disease and stroke
- Eye complications
- Nerve damage
- Limb amputation
- Impotence

Over 3,000 new cases of end stage kidney failure are diagnosed annually in Malaysia, more than 55% of them are diabetic.

## How does Diabetes affect your body and kidneys?

- May damage small blood vessels in your body and affect your kidneys, eyes, skin, nerves, muscles, intestines and heart. High blood pressure and hardening of the arteries can develop, which can lead to heart disease.
- High blood sugar makes the kidneys work harder and results in progressive damage to the small filtering units of the kidneys and leads to leakage of protein in the urine.
- Diabetics are also at increased risk of urinary tract infections due to high sugar content in the urine.

## I have Diabetes, how will I know if my kidneys are affected?

In the early stages, there may not be any obvious symptoms. However, you should see your doctor and get your urine checked for protein.