

# Win

Against  
Diabetes



# The Basics of Diabetes

## WHAT IS DIABETES?

Diabetes is a condition characterised by high glucose levels.

**Glucose** comes from our food and is also produced by the liver. It is the main source of energy for the body's cells and is transported through the blood stream. Glucose needs to enter cells to be used.

**Insulin** is the hormone that acts like a 'key' to allow glucose to enter cells. If the pancreas does not produce enough insulin, or cells are not able to respond well enough to insulin, glucose is unable to enter the cells. Glucose levels in the blood stream rise, resulting in diabetes.

## 3 Main Types of Diabetes

- **Type 1 diabetes:** When the body is unable to produce insulin. It usually presents in children and young adults, but may also present in older adults.
- **Type 2 diabetes:** When the body does not produce enough insulin or when the insulin produced does not work properly.
- **Gestational diabetes:** When hormones produced during pregnancy result in the body cells being more resistant to the action of insulin.





## DIABETES SIGNS AND SYMPTOMS

Early symptoms of diabetes may not be obvious, or there may be no symptoms at all.

### 1. Excessive thirst and urination

These are classic symptoms. If blood glucose levels are too high, the excess glucose appears in the urine. Glucose excretion into the urine will draw out water into the urine, increasing urination and leading to dehydration, with more thirst to compensate for this fluid loss.

### 2. Fatigue

This can be due to many factors, such as dehydration as a result of increased urination, or the body's inability to use glucose for energy needs.

### 3. Weight loss

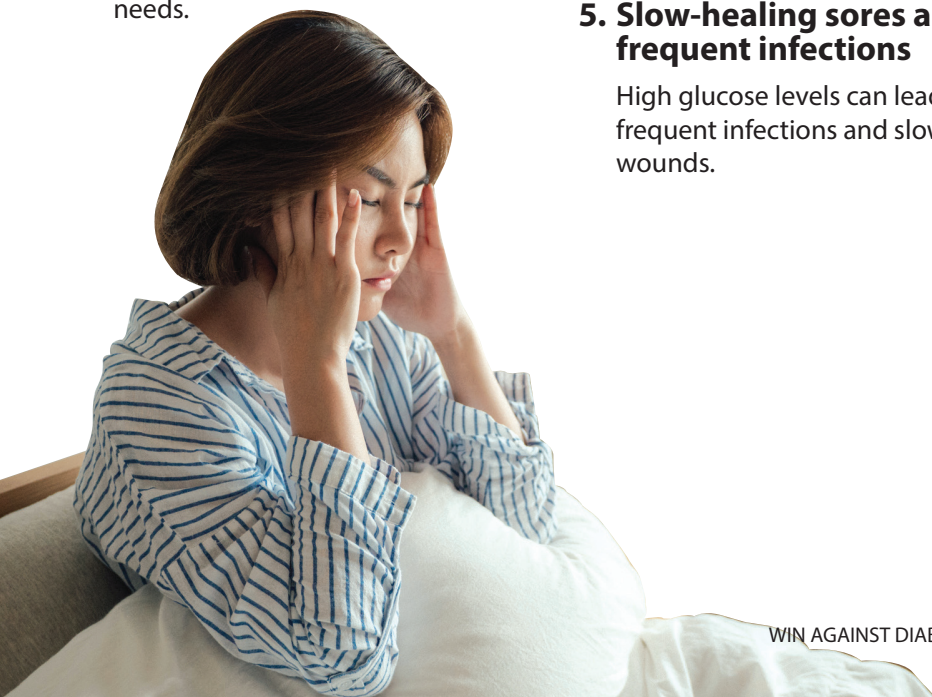
Uncontrolled diabetes with high blood glucose levels can lead to weight loss as you lose glucose (and therefore calories) through your urine. Weight loss is also from dehydration.

### 4. Blurred vision

High levels of blood glucose pull the fluid from the lenses of your eyes, affecting the ability to focus. Uncontrolled diabetes for prolonged periods can also cause significant damage to the retina, affecting vision.

### 5. Slow-healing sores and frequent infections

High glucose levels can lead to frequent infections and slow-healing wounds.



# DIAGNOSING DIABETES

The following blood tests can be done to find out whether you have diabetes:

## 1. Random blood glucose

A blood glucose sample is taken without fasting. A random blood glucose of 11.1 mmol/L or more is suggestive of diabetes.

## 2. Fasting blood glucose

A fasting blood glucose is normally measured after an overnight fast. A fasting blood glucose of 7.0 mmol/L or higher on two separate occasions indicates diabetes.

## 3. Oral glucose tolerance test (OGTT)

You will have a fasting blood glucose level taken, and be asked to drink 75 g of a sugary drink. A fasting reading of  $\geq 7.0$  mmol/L or a glucose reading of  $\geq 11.1$  mmol/L 2 hours after this drink indicates diabetes.

	Normal	Prediabetes	Diabetes
Fasting glucose	$< 6.1$ mmol/L	6.1-6.9 mmol/L	$\geq 7.0$ mmol/L
2-hour plasma glucose level after oral glucose tolerance test (OGTT)	$< 7.8$ mmol/L	7.8-11.0 mmol/L	$\geq 11.1$ mmol/L







## RISK FACTORS FOR TYPE 2 DIABETES

### 1. Weight

The more fatty tissue you have, the more resistant your body is to the action of insulin.

### 2. Inactivity

The less active you are, the greater your risk. Physical activity helps you to control your weight, uses up glucose as energy and makes your cells much more sensitive to insulin.

### 3. Family history

Your risk increases if a parent or sibling has type 2 diabetes.

### 4. High blood pressure

High blood pressure of greater than 140/90 mmHg is recognised as a risk factor.

### 5. Abnormal cholesterol and triglyceride levels

If you have low levels of high-density lipoprotein (HDL) or good cholesterol, your risk is higher. People with high triglyceride levels, another type of fat carried in the blood, are also at increased risk.

### 6. Gestational diabetes

Your risk is greater if you have had gestational diabetes. You are also at risk if you have given birth to a baby weighing more than 4 kg.

### 7. Polycystic ovary syndrome

This is a condition associated with irregular menstrual periods, excessive hair growth and being overweight.

## REVERSING PREDIABETES

Before people develop type 2 diabetes, almost all pass through the prediabetes stage where blood glucose levels are higher than normal, but not high enough to be considered as frank or overt diabetes. Importantly, having prediabetes means you are likely to progress on to diabetes in the near future. You can however take steps to reduce these risks.

There are no clear symptoms of prediabetes. **The only reliable method of diagnosis is through blood tests.**

### What Can I Do If I Have Prediabetes?

Lifestyle changes with modest weight loss (5-10% of body weight) and moderate-intensity physical activity (~30 minutes daily; e.g. brisk walking and strength training) are good recommendations to start with. Eat healthily and sensibly, avoid fad diets, and get adequate sleep and rest.



**More topics are available in the full  
Win Against Diabetes booklet.**

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