

# What is Diabetes?

To understand diabetes and how it develops, we need to understand how the body functions without diabetes. Sugar (glucose) comes from the foods that we eat, specifically carbohydrates.

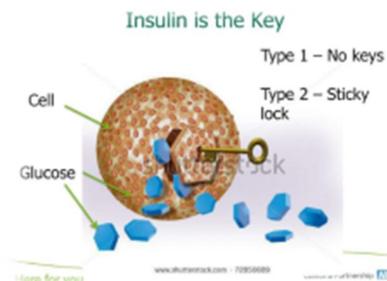
**Carbohydrates** provide our body with its main energy source. Everybody, including those with diabetes, require carbohydrates. Foods with carbohydrates include bread, cereal, pasta, rice, fruit, dairy products and starchy vegetables. When we eat these foods, the body breaks them down into glucose.

The glucose moves around the body via the bloodstream. Some of the glucose is taken to our brain to help us think clearly and function. The remainder of the glucose is taken to the cells of our body for energy. It also goes to our liver, where it is stored as energy for later use.

In order for the body to use glucose for energy, **insulin** is required. Insulin is a hormone that is produced by the **beta cells** in the **pancreas**. Insulin works like a key for a door.

Insulin attaches itself to the 'doors' on the cell, opening it to allow glucose to move from the bloodstream and into the cell.

If the pancreas is not able to produce enough insulin (**insulin deficiency**) or if the body cannot use the insulin it produces (**insulin resistance**), glucose builds up in the bloodstream (**hyperglycemia**) and diabetes develops. **Diabetes Mellitus** means high levels of sugar (glucose) in the blood stream and in the urine.



## Signs/Symptoms of Diabetes

- **Frequent urination** - Body tries to remove the extra glucose through the kidneys
- **Increased thirst** - Body tries to replace lost fluid due to frequent urination
- **Increased hunger** - Cells of the body feel starved of glucose as the glucose is in the bloodstream and not in the cells
- **Tired / Sleepiness** - All the energy is in the bloodstream and not in the cells
- **Weight loss** - Loss of calories from frequent urination and the body using fat for energy
- **Blurred vision** - Glucose builds up in the eyes
- **Mood swings, confusion and difficulty concentrating** - High glucose levels in the brain
- **Frequent infections/poor healing** - High glucose levels make us at higher risk for infection and slow healing

Symptoms can range from none, mild, or severe. This may be the reason why there are many people living with diabetes who do not know they have it.

Therefore, it is important to see your primary doctor regularly to screen for diabetes. Detection, through screening, is key.

# Most common types of diabetes

## Type 1 diabetes

Type 1 (T1D) diabetes is an autoimmune disease. The beta cells of the pancreas have been injured or attacked by the body's own immune system (auto-immunity). This attack on the beta cells of the pancreas can occur many years before the diabetes develops and the symptoms occur. Auto-antibodies (markers of attack) develop in 85-90% of people as a result of this autoimmune process.

As a result, the beta cells die and cannot produce insulin. People with T1D need to replace what the body cannot produce. Insulin can either be replaced via injections or an insulin pump.

Main features of T1D:

- Accounts for 10% of those with diabetes.
- Usually in people less than 30 years of age but can occur at any age
- Rapid development of signs and symptoms but the cell destruction may have been occurring for years
- Usually lean body weight
- Ketone development / ketoacidosis



*Exercise, nutrition and monitoring are all important self-management factors.*

**Education is the first step in your journey with diabetes.**

## Type 2 diabetes

In Type 2 diabetes the beta cells of the pancreas produce insulin but it is either not enough or not effective enough (insulin resistance) to move glucose from the bloodstream into the cells.

Type 2 Diabetes is a progressive condition. Insulin production declines over time and may be rapid in some people, while slower in others.

The treatment of type 2 diabetes is aimed at controlling the blood glucose levels through lifestyle modifications. Although, some people may require assistance from medications to maintain optimal blood glucose levels.

Main features of Type 2 diabetes:

- Accounts for 90% of those with diabetes
- Strong family link (especially in African-American, Hispanic, American Indian and Asian populations)
- Usually in people older than thirty-five years of age
- 1 in 2 children diagnosed with diabetes
- May be overweight, especially around their waist
- Gradual onset of signs and symptoms of diabetes

## Gestational diabetes

**Gestational Diabetes** is a type of diabetes that develops in some women during pregnancy. During pregnancy, the placenta produces hormones that make the body's cells more resistant to insulin, which may cause the blood sugar level to rise.

Treatment involves healthy eating, exercise, blood glucose monitoring, education and in some situations, insulin therapy. In most cases, once the baby is delivered, the blood sugar levels will return to normal and gestational diabetes disappears.

However, approximately 30% of women who have had gestational diabetes are at higher risk of developing type 2 diabetes. Maintaining a healthy body weight after delivery reduces this risk significantly.