Type 2 diabetes

Overview

Type 2 diabetes happens when the body cannot use insulin correctly and sugar builds up in the blood. It was once called adult-onset diabetes.

Over time, high blood sugar levels in type 2 diabetes can damage the eyes, kidneys, nerves and heart. This can happen because the pancreas doesn't make enough of a hormone called insulin that helps sugar enter the cells. It happens also because the cells respond poorly to insulin by taking in less sugar.

Both type 1 and type 2 diabetes can begin during childhood and adulthood. Type 2 is more common in older adults. But the increase in the number of children with obesity has led to more young people with type 2 diabetes.

There's no cure for type 2 diabetes. Losing weight, eating well and exercising can help manage the condition. If diet and exercise aren't enough to manage blood sugar, diabetes medicines or insulin therapy may help.

Products & Services

A Book: The Essential Diabetes Book

Symptoms

Symptoms of type 2 diabetes often come on slowly. In fact, people can live with type 2 diabetes for years and not know it. When there are symptoms, they may include:

- More thirst.
- More urination.
- More hunger.
- Weight loss.
- Tiredness.
- Blurred vision.
- Slow-healing sores.
- Frequent infections.
- Numbness or tingling in the hands or feet.
- Areas of darkened skin, most often in the armpits and neck.

When to see a doctor

See your healthcare professional if you have any symptoms of type 2 diabetes.

Causes

Type 2 diabetes is mainly the result of two issues:

- Cells in muscle, fat and the liver don't respond to insulin as they should. As a result, the cells don't take in enough sugar.
- The gland that makes insulin, called the pancreas, can't make enough to keep blood sugar levels within a healthy range.

Being overweight and not moving enough are key factors.

How insulin works

Insulin is a hormone that comes from a gland that sits behind and below the stomach. The gland is called the pancreas. Insulin manages how the body uses sugar in the following ways:

- Sugar in the bloodstream causes the pancreas to release insulin.
- Insulin in the bloodstream gets sugar into the cells.
- The amount of sugar in the bloodstream drops.
- Then the pancreas releases less insulin.

The role of glucose

A sugar called glucose is a main source of energy for the cells that make up muscles and other tissues.

- Glucose comes from two major sources. They are food and the liver.
- Glucose goes into the bloodstream. There it enters cells with the help of insulin.
- The liver stores glucose in the form of glycogen and also makes glucose.
- When glucose levels are low, the liver breaks down stored glycogen into glucose. This keeps the body's glucose level within a healthy range.

In type 2 diabetes, this process doesn't work well. Instead of moving into the cells, sugar builds up in the blood. As blood sugar levels rise, the pancreas releases more insulin. Over time, the cells in the pancreas that make insulin are damaged. Then the cells can't make enough insulin to meet the body's needs.

Risk factors

Factors that may increase the risk of type 2 diabetes include:

- **Excess weight.** Being overweight or obese is a main risk.
- **Waist size.** Storing fat mainly in the belly rather than in the hips and thighs raises the risk. The risk of type 2 diabetes is higher in people assigned male at birth whose waists measure more than 40 inches (101.6 centimeters). For people assigned female at birth, a waist measure of more than 35 inches (88.9 centimeters) raises the risk.
- **Sitting.** The less active a person is, the higher the risk. Physical activity helps manage weight, uses up glucose as energy and helps cells take in insulin.
- **Family history.** Having a parent or sibling who has type 2 diabetes raises the risk.
- **Race and ethnicity.** It's not clear why, but people of certain races and ethnicities are more likely to get type 2 diabetes than white people are.

Races and ethnicities include Black people, Hispanic people, Native American and Asian people, and Pacific Island people.

- **Blood lipid levels.** A higher risk is linked with low levels of high-density lipoprotein. Also called HDL cholesterol, this is the "good" cholesterol. Higher risk also is linked with high levels of a certain type of fat in the blood, called triglycerides.
- **Age.** The risk of type 2 diabetes goes up with age, mainly after age 35.
- **Prediabetes.** Prediabetes is a condition in which blood sugar is higher than the standard range, but not high enough to be called type 2 diabetes. If not treated, prediabetes often moves on to become type 2 diabetes.
- **Pregnancy-related risks.** The risk of getting type 2 diabetes is higher in people who had gestational diabetes when they were pregnant. And it's higher in those who gave birth to a baby weighing more than 9 pounds (4 kilograms).
- **Polycystic ovary syndrome.** This condition results in irregular menstrual periods, excess hair growth and obesity. It raises the risk of diabetes.

Complications

Type 2 diabetes affects many major organs. These include the heart, blood vessels, nerves, eyes and kidneys. Also, factors that raise the risk of diabetes are risk factors for other serious diseases. Managing diabetes and blood sugar can lower the risk for these complications and other medical conditions, including:

- **Heart and blood vessel disease.** Diabetes is linked with a higher risk of heart disease, stroke, high blood pressure and narrowed blood vessels, called atherosclerosis.
- **Nerve damage in arms and legs.** This condition is called neuropathy. High blood sugar over time can damage or destroy nerves. Neuropathy may cause tingling, numbness, burning, pain or loss of feeling. It most often begins at the tips of the toes or fingers and slowly spreads upward.