

# Understanding Diabetes

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## What is Diabetes?

Diabetes is a chronic health condition that affects how your body changes food into energy. Most of the food we eat is turned into glucose, a simple sugar, which is released into our blood. The pancreas makes a hormone called insulin in response to rising blood-sugar levels to help glucose get into the cells of the body. Think of insulin as a key to cells: When insulin is around, the glucose can enter. These cells use this glucose as energy. With diabetes, the body either doesn't make enough insulin or the cells can't effectively use the insulin that is made. When there is insufficient insulin, glucose builds up in the blood rather than entering cells, which leads to high blood sugar. Chronically elevated levels of blood sugar have an impact on health. Medication and lifestyle changes are ways to manage blood-glucose levels.

## Types of Diabetes

### Type 1 Diabetes

Type 1 diabetes is usually found early in life, but a diagnosis can happen at any age. Risk factors include a family history of the condition. It is less common than type 2 diabetes. Approximately 5% to 10% of those diagnosed with diabetes have type 1. In this type of diabetes, the cells that protect the body (immune cells) attack and destroy the cells in the pancreas that make insulin. Individuals with type 1 diabetes depend on insulin injections to live.

### Type 2 Diabetes

Type 2 diabetes is the most common form of diabetes, making up 90% to 95% of all diagnosed cases. It occurs when the cells of the body are not able to use insulin. As a result, glucose does not get into the cells to produce energy. The pancreas works to make more insulin, but eventually it loses the ability to produce enough insulin. Obesity is the most important risk factor in type 2 diabetes, and even a small amount of weight loss is associated with a lower risk of the disease.

Additional risk factors for type 2 diabetes include:

- Being 45 years old or older
- Having a parent or sibling with type 2 diabetes
- Engaging in physical activity less than three times a week
- Having overweight or obesity
- Being an African American, Hispanic or Latino, or American Indian or Alaska Native person.
- Having gestational diabetes or giving birth to a baby who weighed more than 9 pounds

Type 2 diabetes can be prevented with lifestyle changes including eating a balanced diet, engaging in physical activity, and losing some excess body weight.

## Gestational Diabetes

Gestational diabetes develops during pregnancy in women who have never had diabetes. The cause is unknown. It affects one in 10 pregnancies in the United States. This form of diabetes generally goes away after the baby's birth. However, a woman who has gestational diabetes is at an increased risk of developing type 2 diabetes. Gestational diabetes may put the baby at a higher risk for health problems. It also increases the risk the child has obesity or develops type 2 diabetes later in life.

Some risk factors for gestational diabetes include a previous diagnosis of it, giving birth to a baby that weighed more than 9 pounds, being over 25 years old, or having polycystic ovarian syndrome (PCOS). The risk factors for type 2 diabetes also increase the risk of gestational diabetes.

## Pre-diabetes

Pre-diabetes is a condition where blood glucose levels are higher than normal but not high enough for the person to be diagnosed with diabetes. Pre-diabetes increases the risk for type 2 diabetes, heart disease, and stroke. Modest weight loss of 5 to 7 percent of body weight and engaging in regular physical activity can prevent or delay a type 2 diabetes diagnosis.

## Complications of Diabetes

Having chronically high blood glucose can damage large and small blood vessels and nerves in the body. This damage can lead to severe complications such as heart attack, stroke, eye disease, and kidney disease. Damage to the nerves may lead to pain; loss of feeling in the extremities, including hands, legs, and feet; and weakening of the muscles. In some cases, these complications can be life-threatening. While there is no cure for diabetes, management of blood glucose levels and lifestyle changes can help lower your risk of these complications.

## Managing Diabetes

The management of diabetes can vary depending on the diagnosis. Some forms of diabetes may require daily medication and others may be managed with lifestyle changes. If prescribed a medication, use it as ordered by your healthcare provider. Ask questions if you are unsure how the medication works, when it should be taken, or how often it should be taken. If told to take insulin, ask questions about how to take the insulin and the best ways to monitor blood sugar. It is okay not to understand, but it is important to ask questions to be informed about diabetes management.

Diet and lifestyle changes support management of all types of diabetes. Eating a variety of foods including fruits, vegetables, whole grains, lean proteins, and dairy throughout the day can help manage blood-glucose levels. Engaging in movement also benefits blood-glucose levels and supports energy and mental health while lowering the risk for heart disease and stroke. The patient's healthcare team can provide support and guidance with managing diabetes.

## References

- American Diabetes Association. (n.d.). Gestational Diabetes | ADA. Diabetes.org. <https://diabetes.org/about-diabetes/gestational-diabetes>.
- American Diabetes Association. (n.d.). Newly Diagnosed with Diabetes | ADA. Diabetes.org. <https://diabetes.org/living-with-diabetes/newly-diagnosed>.
- Centers for Disease Control. (2019, February 22). Prediabetes - Your Chance to Prevent Type 2 Diabetes. Centers for Disease Control and Prevention. <https://www.cdc.gov/diabetes/basics/prediabetes.html>.
- Centers for Disease Control and Prevention. (2022, April 5). Diabetes Risk Factors. Centers for Disease Control and Prevention. <https://www.cdc.gov/diabetes/basics/risk-factors.html>.
- Centers for Disease Control and Prevention. (2023, September 5). What is diabetes? Centers for Disease Control and Prevention. <https://www.cdc.gov/diabetes/basics/diabetes.html>.
- World Health Organization. (2018, October 30). Diabetes. Who.int; World Health Organization: WHO. <https://www.who.int/en/news-room/fact-sheets/detail/diabetes>.

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