

# Diabetes Symptoms, Diagnosis & Treatment

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## What is Diabetes?

Diabetes mellitus, commonly referred to as diabetes is a set of related diseases in which the body cannot regulate the amount of sugar (glucose) in the blood. It can be caused by too little insulin (a hormone produced by the pancreas to regulate blood sugar), resistance to insulin, or both. Glucose levels in blood are above normal in case of diabetes. People with diabetes have problems converting food to energy. After a meal, food is broken down into a sugar called glucose, which is carried by the blood to cells throughout the body. Cells use insulin, a hormone made in the pancreas, to help them convert blood glucose into energy.

Glucose in the blood gives you energy - the kind you need when you walk briskly, run for a bus, ride your bike, take an aerobics class, and perform your day-to-day chores. Glucose in the blood is produced by the liver from the foods you eat. In a healthy person, the blood glucose level is regulated by several hormones, one of which is insulin. Insulin is produced by the pancreas, a small organ near the stomach that also secretes important enzymes that help in the digestion of food. Insulin allows glucose to move from the blood into liver, muscle, and fat cells, where it is used for fuel. People with diabetes either do not produce enough insulin (type 1 diabetes) or cannot use insulin properly (type 2 diabetes), or both. In diabetes, glucose in the blood cannot move into cells, and it stays in the blood. This not only harms the cells that need the glucose for fuel, but also harms certain organs and tissues exposed to the high glucose levels.

People develop diabetes because the pancreas does not make enough insulin or because the cells in the muscles, liver, and fat do not use insulin properly, or both. As a result, the amount of glucose in the blood increases while the cells are starved of energy. Over the years, high blood glucose, also called hyperglycemia, damages nerves and blood vessels, which can lead to complications such as heart disease and stroke, kidney disease, blindness, nerve problems, gum infections, and amputation.

## Types of Diabetes

The three main types of diabetes are type 1, type 2, and gestational diabetes.

1. **Type 1 diabetes**, formerly called juvenile diabetes, is usually first diagnosed in children, teenagers, or young adults. In this form of diabetes, the beta cells of the pancreas no longer make insulin because the body's immune system has attacked and destroyed them.
2. **Type 2 diabetes**, formerly called adult-onset diabetes, is the most common form. People can develop it at any age, even during childhood. This form of diabetes usually begins with insulin resistance, a condition in which muscle, liver, and fat cells do not use insulin properly. At first, the pancreas keeps up with the added demand by producing more insulin. In time, however, it loses the ability to secrete enough insulin in response to meals.
3. **Gestational diabetes** develops in some women during the late stages of pregnancy. Although this form of diabetes usually goes away after the baby is born, a woman who has had it is more likely to develop type 2 diabetes later in life. Gestational diabetes is caused by the hormones of pregnancy or by a shortage of insulin.

Type 1 diabetes comprises about 10% of total cases of diabetes in the United States. Type 1 diabetes is

typically recognized in childhood or adolescence. People with type 1 diabetes generally require daily insulin treatment to sustain life. At least 90% of patients with diabetes have type 2 diabetes. Type 2 diabetes is typically recognized in adulthood, usually after age 45 years. Type 2 diabetes is usually controlled with diet, weight loss, exercise, and oral medications. More than half of all people with type 2 diabetes require insulin to control their blood sugar levels at some point in the course of their illness.

About 17 million Americans (6.2%) are believed to have diabetes. About one third of those do not know they have it.

- About 1 million new cases occur each year, and diabetes is the direct or indirect cause of at least 200,000 deaths each year.
- The incidence of diabetes is increasing rapidly. This increase is due to many factors, but the most significant are the increasing incidence of obesity and the prevalence of sedentary lifestyles.

## Pre-Diabetes

In pre-diabetes, blood glucose levels are higher than normal but not high enough to be characterized as diabetes. However, many people with pre-diabetes develop type 2 diabetes within 10 years. Pre-diabetes also increases the risk of heart disease and stroke. With modest weight loss and moderate physical activity, people with pre-diabetes can delay or prevent type 2 diabetes.

## Diabetes Symptoms

The symptoms of diabetes often go undiagnosed because many seem so harmless. Early diabetes symptoms can be subtle or seemingly harmless. In fact, you could have diabetes for months or even years and not even know it.

In the United States alone, more than 6 million people are unaware that they have diabetes, according to the American Diabetes Association. But you don't need to become a statistic. Understanding possible diabetes symptoms can lead to early diagnosis and treatment - and a lifetime of better health

- Excessive thirst and increased urination
- Flu-like feeling
- Weight loss or gain
- Blurred vision
- Slow-healing sores or frequent infections
- Tingling hands and feet
- Red, swollen, tender gums

Please take your body's hints seriously. If you notice any possible diabetes symptoms, contact your doctor. The earlier the condition is diagnosed, the sooner treatment can begin. Diabetes is a serious condition. But with your active participation and the support of your health care team, you can manage diabetes while enjoying an active, healthy life.

## Diabetes Risk Factors

You have a higher risk for diabetes if you have any of the following:

- Family history of diabetes
- Low activity level
- Poor diet
- Excess body weight (especially around the waist)
- Age greater than 45 years
- High blood pressure
- High blood levels of triglycerides (a type of fat molecule)
- HDL cholesterol of less than 35
- Impaired glucose tolerance (identified by your doctor)
- Diabetes during a previous pregnancy, or a baby weighing more than 9 pounds
- Certain ethnicities - African-Americans, Hispanic-Americans, and Native Americans all have high rates of diabetes

### Should I be tested for diabetes?

Everyone over 45 should have their blood glucose checked at least every 3 years. Regular testing of random blood glucose should begin at a younger age, and be performed more often, if you are at higher risk for diabetes. If you are 45 or older and your BMI (Body Mass Index) indicates that you are overweight, it is strongly recommended that you get tested. BMI (Body Mass Index) is a measure used to evaluate body weight relative to height. You can use BMI to find out whether you are underweight, normal weight, overweight, or obese. If you are younger than 45, are overweight, and have one or more of the risk factors, you should consider testing. Your doctor will tell you if you have normal blood glucose, pre-diabetes, or diabetes. If your blood glucose is higher than normal but lower than the diabetes range (called pre-diabetes), have your blood glucose checked in 1 to 2 years.

### Resources

- American Diabetes Association
- National Institute of Diabetes & Digestive & Kidney Diseases
- US Center for Disease Control

The information provided herein should not be used during any medical emergency or for the diagnosis or treatment of any medical condition. A licensed physician should be consulted for diagnosis and treatment of any and all medical conditions. Call 911 for all medical emergencies. Links to

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