

What is diabetes?

Title: Endocrinology

Source: CDC

Link: <http://www.cdc.gov/diabetes/consumer/learn.htm#>

Diabetes is a disease in which blood glucose levels are above normal. Most of the food we eat is turned into glucose, or sugar, for our bodies to use for energy. The pancreas, an organ that lies near the stomach, makes a hormone called insulin to help glucose get into the cells of our bodies. When you have diabetes, your body either doesn't make enough insulin or can't use its own insulin as well as it should. This causes sugar to build up in your blood.

Diabetes can cause serious health complications including heart disease, blindness, kidney failure, and lower-extremity amputations. Diabetes is the seventh leading cause of death in the United States.

For more information, see the National Diabetes Information Clearinghouse publication, [Your Guide to Diabetes: Type 1 and Type 2](#).

What are the symptoms of diabetes?

People who think they might have diabetes must visit a physician for diagnosis. They might have SOME or NONE of the following symptoms:

- Frequent urination
- Excessive thirst
- Unexplained weight loss
- Extreme hunger
- Sudden vision changes
- Tingling or numbness in hands or feet
- Feeling very tired much of the time
- Very dry skin
- Sores that are slow to heal
- More infections than usual.

Nausea, vomiting, or stomach pains may accompany some of these symptoms in the abrupt onset of insulin-dependent diabetes, now called type 1 diabetes.

What are the types of diabetes?

Type 1 diabetes, which was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes, may account for about 5% of all diagnosed cases of diabetes. **Type 2 diabetes**, which was previously called non-insulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes, may account for about 90% to 95% of all diagnosed cases of diabetes.

Gestational diabetes is a type of diabetes that only pregnant women get. If not treated, it can

cause problems for mothers and babies. Gestational diabetes develops in 2% to 10% of all pregnancies but usually disappears when a pregnancy is over. **Other specific types of diabetes** resulting from specific genetic syndromes, surgery, drugs, malnutrition, infections, and other illnesses may account for 1% to 5% of all diagnosed cases of diabetes.

What are the risk factors for diabetes?

Risk factors for type 2 diabetes include older age, obesity, family history of diabetes, prior history of gestational diabetes, impaired glucose tolerance, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Pacific Islanders are at particularly high risk for type 2 diabetes.

Risk factors are less well defined for type 1 diabetes than for type 2 diabetes, but autoimmune, genetic, and environmental factors are involved in developing this type of diabetes.

Gestational diabetes occurs more frequently in African Americans, Hispanic/Latino Americans, American Indians, and people with a family history of diabetes than in other groups. Obesity is also associated with higher risk. Women who have had gestational diabetes have a 35% to 60% chance of developing diabetes in the next 10–20 years.

Other specific types of diabetes, which may account for 1% to 5% of all diagnosed cases, result from specific genetic syndromes, surgery, drugs, malnutrition, infections, and other illnesses.

What is the treatment for diabetes?

Healthy eating, physical activity, and insulin injections are the basic therapies for type 1 diabetes. The amount of insulin taken must be balanced with food intake and daily activities. Blood glucose levels must be closely monitored through frequent blood glucose testing.

Healthy eating, physical activity, and blood glucose testing are the basic therapies for type 2 diabetes. In addition, many people with type 2 diabetes require oral medication, insulin, or both to control their blood glucose levels.

People with diabetes must take responsibility for their day-to-day care, and keep blood glucose levels from going too low or too high.

People with diabetes should see a health care provider who will monitor their diabetes control and help them learn to manage their diabetes. In addition, people with diabetes may see endocrinologists, who may specialize in diabetes care; ophthalmologists for eye examinations; podiatrists for routine foot care; and dietitians and diabetes educators who teach the skills needed for daily diabetes management.

The [Diabetes Overview fact sheet](#) from the National Diabetes Information Clearinghouse has additional information.

What causes type 1 diabetes?

The causes of type 1 diabetes appear to be much different than those for type 2 diabetes, though the exact mechanisms for developing both diseases are unknown. The appearance of type 1 diabetes is suspected to follow exposure to an "environmental trigger," such as an unidentified virus, stimulating an immune attack against the beta cells of the pancreas (that produce insulin) in some genetically predisposed people.

For more information about the immune system, visit these pages from The National Institute of Health's (NIH) National Institute of Allergy and Infectious Diseases Web site:

- [The Immune System](#)

For more information on genetics and disease, visit:

- [Genetics Home Reference](#)
- NIH's [Human Genetics and Medical Research](#) online exhibit
- The Centers for Disease Control and Prevention's (CDC) [Office of Genomics and Disease Prevention](#)
- [National Center for Biotechnology Information's Human Genome Resources page](#)

Can diabetes be prevented?

Researchers are making progress in identifying the exact genetics and "triggers" that predispose some individuals to develop type 1 diabetes, but prevention remains elusive.

A number of studies have shown that regular physical activity can significantly reduce the risk of developing type 2 diabetes. Type 2 diabetes is associated with obesity.

See the [Preventing Diabetes section](#) in these FAQs for more information.

Building on this research, CDC's National Diabetes Prevention Program supports establishing a network of community-based, group lifestyle intervention programs for overweight or obese people at high risk of developing type 2 diabetes. As of early 2011, it was anticipated that 33 U.S. sites will offer group lifestyle interventions in 2011, with plans to expand to other communities.

Is there a cure for diabetes?

In response to the growing health burden of diabetes, the diabetes community has three choices: prevent diabetes; cure diabetes; and improve the quality of care of people with diabetes to prevent devastating complications. All three approaches are actively being pursued by the US Department of Health and Human Services.

Both the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC) are involved in prevention activities. The NIH is involved in research to cure both type 1 and type 2 diabetes, especially type 1. CDC focuses most of its programs on making sure that the proven science to prevent complications is put into daily practice for people with diabetes. The

basic idea is that if all the important research and science are not applied meaningfully in the daily lives of people with diabetes, then the research is, in essence, wasted.

Several approaches to "cure" diabetes are currently under investigation:

- Pancreas transplantation
- Islet cell transplantation (islet cells produce insulin)
- Artificial pancreas development
- Genetic manipulation (fat or muscle cells that don't normally make insulin have a human insulin gene inserted — then these "pseudo" islet cells are transplanted into people with type 1 diabetes).

Each of these approaches still has a lot of challenges, such as preventing immune rejection; finding an adequate number of insulin cells; keeping cells alive; and others. But progress is being made in all areas.

Page last reviewed: July 13, 2011

Page last updated: July 13, 2011

Content source: Division of Diabetes Translation

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