



Atlantic County Division of Public Health

Questions and Answers about Diabetes

What is diabetes?

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 sugars 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.

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 and risk factors of diabetes?

The following types of diabetes and some of their risk factors are quoted from the National Diabetes Fact Sheet: National estimates and general information on diabetes in the United States (Centers for Disease Control and Prevention. Atlanta, GA: US Department of Health and Human Services, 1997):

Type 1 diabetes was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. Type 1 diabetes may account for 5% to 10% of all diagnosed cases of 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 the development of this type of diabetes.

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

Gestational diabetes develops in 2% to 5% of all pregnancies but usually disappears when a pregnancy is over. 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.



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Obesity is also associated with higher risk. Women who have had gestational diabetes are at increased risk for later developing type 2 diabetes. In some studies, nearly 40% of women with a history of gestational diabetes developed diabetes in the future.

Other specific types of diabetes result from specific genetic syndromes, surgery, drugs, malnutrition, infections, and other illnesses. Such types of diabetes may account for 1% to 2% of all diagnosed cases of diabetes.

What is the treatment for diabetes?

Management strategies should be planned along with a qualified health care team. The following information on treatments for diabetes is from the *National Diabetes Fact Sheet: National estimates and general information on diabetes in the United States* (Centers for Disease Control and Prevention, Atlanta, GA: US Department of Health and Human Services, 1997):

Diabetes knowledge, treatment, and prevention strategies advance daily. Treatment is aimed at keeping blood glucose near normal levels at all times. Training in self-management is integral to the treatment of diabetes. Treatment must be individualized and must address medical, psychosocial, and lifestyle issues.

Treatment of type 1 diabetes: Lack of insulin production by the pancreas makes type 1 diabetes particularly difficult to control. Treatment requires a strict regimen that typically includes a carefully calculated diet, planned physical activity, home blood glucose testing several times a day, and multiple daily insulin injections.

Treatment of type 2 diabetes: Treatment typically includes diet control, exercise, home blood glucose testing, and in some cases, oral medication and/or insulin. Approximately 40% of people with type 2 diabetes require insulin injections.

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 development of 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.

Can diabetes be prevented?

A number of studies have shown that regular physical activity can significantly reduce the risk of developing type 2 diabetes. It also appears to be associated with obesity. Researchers are making progress in identifying the exact genetics and "triggers" that predispose some individuals to develop type 1 diabetes, but prevention, as well as a cure, remains elusive.

Is there a cure for diabetes?

In response to the growing health burden of diabetes mellitus (diabetes), the diabetes community has three choices: prevent diabetes; cure diabetes; and take better 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 being sure that the proven science is put



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into daily practice for people with diabetes. The basic idea is that if all the important research and science are not made meaningful in the daily lives of people with diabetes, then the research is, in essence, wasted.

Several approaches to "cure" diabetes are being pursued:

- 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.

Many Complications of Diabetes Can Be Prevented

Eye disease and blindness. Each year, 12,000-24,000 people become blind because of diabetic eye disease. Screening and care could prevent up to 90% of diabetes-related blindness. However, only 60% of people with diabetes receive annual dilated eye exams.

Kidney disease. About 38,000 people with diabetes develop kidney failure each year, and over 100,000 are treated for this condition. Treatment to better control blood pressure and blood glucose levels could reduce diabetes-related kidney failure by about 50%.

Amputations. About 82,000 people have diabetes-related leg and foot amputations each year. Foot care programs that include regular examinations and patient education could prevent up to 85% of these amputations.

Cardiovascular disease. Heart disease and stroke cause about 65% of deaths among people with diabetes. These deaths could be reduced by 30% with improved care to control blood pressure and blood glucose and lipid levels.

Pregnancy complications. About 18,000 women with preexisting diabetes deliver babies each year, and an estimated 135,000 expectant mothers are diagnosed with gestational diabetes. These women and their babies have an increased risk for serious complications. Screenings and diabetes care before and during pregnancy can reduce the risk for complications such as stillbirths, congenital malformations, and the need for cesarean sections.

Flu- and pneumonia-related deaths. Each year, 10,000-30,000 people with diabetes die of complications from flu or pneumonia. They are roughly three times more likely to die of these complications than people without diabetes. However, only 55% of people with diabetes get an annual flu shot.

Information compiled from the Centers for Disease Control and Prevention