Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People.™

2011 National Diabetes Fact Sheet

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General Information

What is diabetes?

Diabetes is a group of diseases marked by high levels of blood glucose (#footnotes) resulting from defects in insulin production, insulin action, or both. Diabetes can lead to serious complications and premature death, but people with diabetes, working together with their support network and their health care providers, can take steps to control the disease and lower the risk of complications.

Types of diabetes

Type 1 diabetes was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. Type 1 diabetes develops when the body's immune system destroys pancreatic beta cells, the only cells in the body that make the hormone insulin that regulates blood glucose. To survive, people with type 1 diabetes must have insulin delivered by injection or a pump. This form of diabetes usually strikes children and young adults, although disease onset can occur at any age. In adults, type 1 diabetes accounts for approximately 5% of all diagnosed cases of diabetes. Risk factors for type 1 diabetes may be autoimmune, genetic, or environmental. There is no known way to prevent type 1 diabetes. Several clinical trials for preventing type 1 diabetes are currently in progress or are being planned.

Type 2 diabetes was previously called non–insulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes. In adults, type 2 diabetes accounts for about 90% to 95% of all diagnosed cases of diabetes. It usually begins as insulin resistance, a disorder in which the cells do not use insulin properly. As the need for insulin rises, the pancreas gradually loses its ability to produce it. Type 2 diabetes is associated with older age, obesity, family history of diabetes, history of gestational diabetes, impaired glucose metabolism, physical inactivity, and race/ethnicity. African Americans, Hispanic/Latino Americans, American Indians, and some Asian Americans and Native Hawaiians or Other Pacific Islanders are at particularly high risk for type 2 diabetes and its complications. Type 2 diabetes in children and adolescents, although still rare, is being diagnosed more frequently among American Indians, African Americans, Hispanic/Latino Americans, and Asians/Pacific Islanders.

Gestational diabetes is a form of glucose intolerance diagnosed during pregnancy. Gestational diabetes occurs more frequently among African Americans, Hispanic/Latino Americans, and American Indians. It is also more common among obese women and women with a family history of diabetes. During pregnancy, gestational diabetes requires treatment to optimize maternal blood glucose levels to lessen the risk of complications in the infant.

Other types of diabetes result from specific genetic conditions (such as maturity-onset diabetes of youth), surgery, medications, infections, pancreatic disease, and other illnesses. Such types of diabetes account for 1% to 5% of all diagnosed cases.

Treating diabetes

Diet, insulin, and oral medication to lower blood glucose levels are the foundation of diabetes

treatment and management. Patient education and self-care practices are also important aspects of disease management that help people with diabetes lead normal lives.

- To survive, people with type 1 diabetes must have insulin delivered by injection or a pump.
- Many people with type 2 diabetes can control their blood glucose by following a healthy meal plan and exercise program, losing excess weight, and taking oral medication. Medications for each individual with diabetes will often change during the course of the disease. Some people with type 2 diabetes may also need insulin to control their blood glucose.
- Self-management education or training is a key step in improving health outcomes and quality of life. It focuses on self-care behaviors, such as healthy eating, being active, and monitoring blood sugar. It is a collaborative process in which diabetes educators help people with or at risk for diabetes gain the knowledge and problem-solving and coping skills needed to successfully self-manage the disease and its related conditions.
- Many people with diabetes also need to take medications to control their cholesterol and blood pressure.

Prevention or delay of type 2 diabetes

- The Diabetes Prevention Program (DPP), a large prevention study of people at high risk for diabetes, showed that lifestyle intervention to lose weight and increase physical activity reduced the development of type 2 diabetes by 58% during a 3-year period. The reduction was even greater, 71%, among adults aged 60 years or older.
- Treatment with the drug metformin reduced the risk by 31% overall and was most effective in younger (aged 25–44 years) and in heavier (body mass index ≥35) adults.
- Prevention or delay of type 2 diabetes with either lifestyle or metformin intervention was effective in all racial and ethnic groups studied and has been shown to persist for at least 10 years.
- Interventions to prevent or delay type 2 diabetes in individuals with prediabetes can be feasible and cost-effective. Research has found that lifestyle interventions are more cost-effective than medications.

Footnotes

Diabetes is a group of diseases marked by high levels of blood glucose

Criteria for the diagnosis of diabetes:

- A fasting blood sugar level ≥126 milligrams per deciliter (mg/dL) after an overnight fast, OR
- A 2-hour blood sugar level ≥200 mg/dL after a 2-hour oral glucose tolerance test (OGTT), OR
- An A1c level ≥6.5%.

All of these tests identify people with diabetes. However, the number of people that these tests identify and their characteristics vary between the 3 tests. For example, A1c varies by race/ethnicity independent of blood glucose levels. The implications of demographic differences in estimates of undiagnosed diabetes when using different laboratory tests are not known. Research is ongoing to ascertain the best use of laboratory blood tests to detect people who may have diabetes and to improve the understanding of who has diabetes (http://www.ngsp.org/CAC2009.asp).

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