

DIABETES

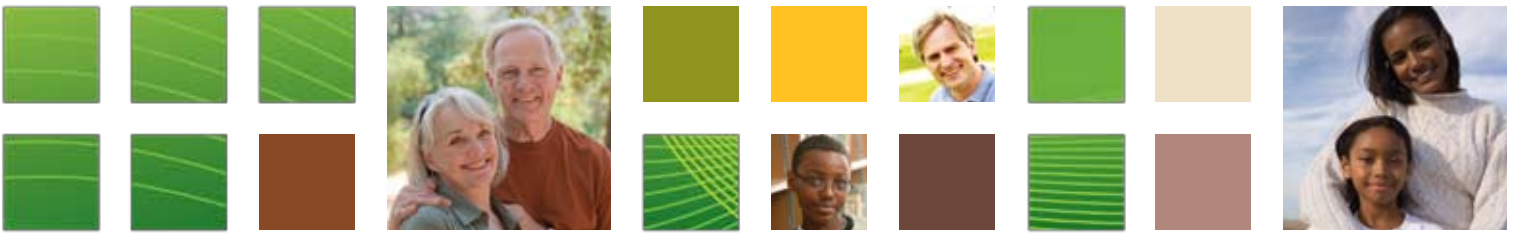
SUCCESSSES AND OPPORTUNITIES FOR POPULATION-BASED PREVENTION AND CONTROL

AT A GLANCE

2011

National Center for Chronic Disease Prevention and Health Promotion
Division of Diabetes Translation





What Is Diabetes?

The Disease

Diabetes is a disease in which the body has a shortage of insulin, a decreased ability to use insulin, or both. Insulin is a hormone that allows glucose (sugar) to enter cells and be converted to energy. When diabetes is not controlled, glucose and fats remain in the blood and, over time, damage vital organs.

Type 1 diabetes usually is first diagnosed in children and young adults, although it can occur at any age. Type 1 diabetes is an autoimmune disease that may be caused by genetic, environmental, or other factors. It accounts for about 5% of diabetes cases. There is no known way to prevent it, and effective treatment requires the use of insulin.

Type 2 diabetes accounts for 90%–95% of diabetes cases and is usually associated with older age, obesity and physical inactivity, family history of type 2 diabetes, or a personal history of gestational diabetes. Diabetes rates vary by race and ethnicity, with American Indian, Alaska Native, African American, Hispanic/Latino, and Asian/Pacific Islander adults about twice as likely as white adults to have type 2 diabetes. Type 2 diabetes can be prevented through healthy food choices, physical activity, and weight loss. It can be controlled with these same activities, but insulin or oral medication also may be necessary.

Gestational diabetes is a form of glucose intolerance that is diagnosed during pregnancy. Gestational diabetes occurs more often in African American, Hispanic/Latino, and American Indian women, as well as in women who are obese or have a family history of type 2 diabetes. It requires treatment to bring maternal blood glucose to normal levels and avoid 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. Other types of diabetes account for less than 5% of all diagnosed cases.

Diabetes Is Preventable and Controllable

Preventing Type 2 Diabetes

People with **prediabetes** are at high risk of developing type 2 diabetes. Their blood glucose levels are higher than normal, but not high enough to be classified as diabetes. An estimated 79

Diabetes Is Common, Disabling, and Deadly

- 25.8 million people in the United States (8.3% of the population) have diabetes. Of these, 7.0 million have undiagnosed diabetes.
- In 2010, about 1.9 million new cases of diabetes were diagnosed in people aged 20 years or older.
- If current trends continue, 1 of 3 U.S. adults will have diabetes by 2050.
- Among adults, diabetes is the leading cause of new cases of blindness, kidney failure, and amputations of feet and legs not related to accidents or injury.
- Diabetes was the seventh leading cause of death listed on U.S. death certificates in 2007.
- A person with diabetes has a shorter life expectancy and about twice the risk of dying on any given day as a person of similar age without diabetes.

The Financial Cost

- Total costs (direct and indirect) of diabetes in 2007: \$174 billion.
- Direct medical costs in 2007: \$116 billion.
- Indirect costs (related to disability, work loss, premature death) in 2007: \$58 billion.
- On average, medical expenses for a person with diagnosed diabetes are more than twice as much as the expenses of a person without diabetes.

million U.S. adults had prediabetes in 2010. Group support programs that help people with prediabetes develop better eating habits, improve their coping skills, and increase their physical activity level have been proven to be effective.



Diabetes Is Preventable and Controllable (continued)

People with prediabetes who lose 5%–7% of body weight and get at least 150 minutes a week of moderate physical activity can reduce the risk of developing type 2 diabetes by 58%.

Controlling Diabetes

Disability and premature death are not inevitable consequences of diabetes. Physical activity and dietary interventions, self-management training, ongoing support, and, when necessary, medications can help control the effects of diabetes. By working with a support network and health care providers, a person with diabetes can prevent premature death and disability.

For example,

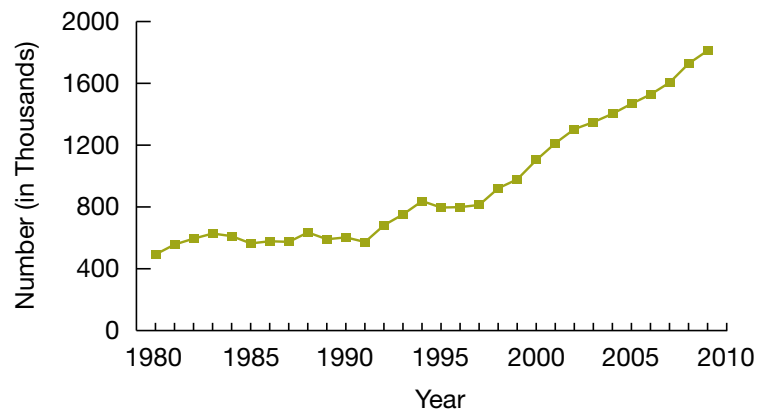
- Reducing A1c (a measure of blood glucose control) by one percentage point can reduce the risk of eye, kidney, and nerve diseases by 40%.
- Controlling blood pressure can reduce the risk of heart disease and stroke by 33%–50% and the risk of eye, kidney, and nerve diseases by 33%.
- Improving control of low-density lipoprotein (LDL) cholesterol can reduce cardiovascular complications by 20%–50%. Treating diabetic eye disease with laser therapy can reduce the risk of loss of eyesight by 50%–60%.
- Accessing comprehensive foot care programs can reduce amputation rates by 45%–85%.

Important Achievements in Diabetes Control

On average, people with diabetes are living longer. Public health efforts designed to prevent and control this disease have played a role in reducing

- Hospitalization rates related to diabetes and hospitalization rates for cardiovascular disease among people with diabetes.
- Percentage of adults with diabetes who report visual impairment.
- Rate of new cases of diabetes-related kidney failure.

New Cases of Diagnosed Diabetes Among U.S. Adults Aged 18–79 Years, 1980–2009



Source: <http://www.cdc.gov/diabetes/statistics/incidence/fig1.htm>.

CDC's Response

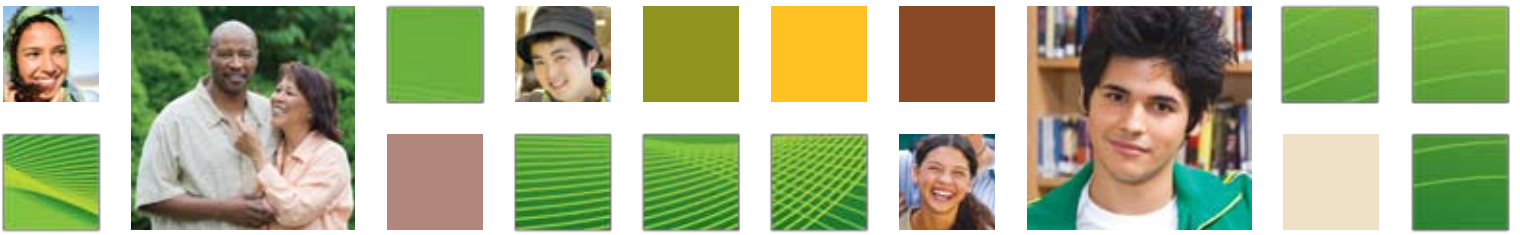
To reduce the preventable burden of diabetes, CDC's Division of Diabetes Translation conducts many activities that involve public health leadership, partnerships, research, policies, and programs that translate science into practice. These activities include the following:

Measuring the Public Health Burden

CDC is a key source of data that can be used to monitor health at state and local levels, guide clinical practices and policy decisions, and provide people with the information they need to take action to improve their own health.

For example, CDC's National Diabetes Surveillance System (NDSS) maintains diabetes-related data from national and state surveys. NDSS data are not available from any other source. The data are used by states and local communities to identify trends in diabetes and its complications, detect changes in health care practices, facilitate diabetes program planning, develop educational materials, and allocate resources.

To view national and state trends for diabetes, obesity, and leisure-time physical inactivity, as well as data for your county, go to <http://apps.nccd.cdc.gov/DDTSTRS>.



CDC's Response (continued)

Performing Diabetes Research

CDC scientists conduct research and share findings with health care systems and communities. Special emphasis is placed on eliminating health disparities among populations at higher risk. Examples of current research include the following:

- **Surveillance, Natural History, Quality of Care, and Outcomes of Diabetes Mellitus with Onset in Childhood and Adolescence:** This 5-year program is expected to provide estimates of trends in the incidence of diabetes among children and youth aged 0–19 years and support research to assess the incidence of diabetes-related complications, quality of care, quality of life, and mortality.
- **Natural Experiments and Effectiveness Studies to Identify the Best Policy and System Level Practices to Prevent Diabetes and Its Complications:** This 5-year program will test how health system, community, and legislative policies affect the risk of diabetes and its complications through rigorously designed, controlled, longitudinal studies.
- **Translating Research into Healthy Eye and Vision Loss Prevention:** This 5-year program was developed to close the gap between existing practice and optimal evidence-based eye care and to reduce disparities in eye health.

Working to Reduce Disparities

CDC provides funding and technical assistance for diabetes programs in all 50 states, the District of Columbia, 6 U.S. Associated Pacific Islands, Puerto Rico, and the U.S. Virgin Islands. These programs work to

- Prevent diabetes among people at highest risk.
- Promote adoption of diabetes care guidelines in health care settings.
- Help state Medicaid programs monitor quality care outcomes among people with diabetes.

- Educate health care providers and the public about optimal diabetes care and self-management.
- Reduce health disparities through approaches that have been proven to work.

For example, the National Diabetes Prevention Program is designed to bring evidence-based lifestyle interventions for preventing type 2 diabetes to communities. It is based on the Diabetes Prevention Program research study led by the National Institutes of Health (NIH) and subsequent real-world studies. The inaugural partners of this program are the YMCA of the USA (which delivers the intervention) and the UnitedHealth Group (which provides data support and reimbursement through subsidiary UnitedHealthcare).

The National Program to Eliminate Diabetes-Related Disparities in Vulnerable Populations is a 5-year program that promotes community interventions that are designed to reduce the risk factors that influence health disparities. The National Diabetes Education Program (NDEP), jointly led by CDC and NIH, develops and disseminates educational information on how to prevent and control diabetes to population groups affected by diabetes, health care professionals, employers, and insurers. NDEP's educational resources and tools are available online in English, Spanish, and 15 Asian or Pacific Islander languages at <http://www.yourdiabetesinfo.org>.

The Native Diabetes Wellness Program focuses on American Indian/Alaska Native and Pacific Islander populations that are disproportionately affected by diabetes. This program works with 17 tribes and tribal organizations and with Pacific Islander groups to support community efforts that promote access to traditional local foods and to implement local policies to sustain these efforts. The program also has provided more than two million copies of the *Eagle Books* series on healthy lifestyles for young children to schools, libraries, and other organizations. For more information, go to <http://www.cdc.gov/diabetes/projects/diabetes-wellness.htm>.

For more information, please contact the Centers for Disease Control and Prevention
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