



Diabetes

Disabling Disease to Double by 2050 2008

What is the lifetime risk for diabetes for people born in the United States in 2000?



1 of 3 Americans



**1 of 2
Hispanic
females**

**2 of 5 African
Americans and
Hispanics**



Control diabetes. For life.

“New evidence shows that at least 57 million people in the United States have prediabetes. Coupled with the nearly 24 million who already have diabetes, this places more than 25% of our population at risk for further complications and suffering. Together, we can and must do more to prevent and control this growing epidemic.”

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Diabetes: A Leading Cause of Death in the United States

In the last 15 years, the number of people in the United States with diagnosed diabetes has more than doubled, reaching 17.9 million in 2007. Although an estimated 23.6 million Americans have diabetes, 5.7 million (or one quarter) do not know they have the disease. While those with undiagnosed diabetes continue to be a concern, this number is an improvement from previous years.

People with diabetes have a shortage of insulin or a decreased ability to use insulin, 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.

Diabetes is the leading cause of new cases of adult blindness, kidney failure, and nontraumatic lower extremity amputation. It can lead to heart disease, stroke, pregnancy complications, and deaths related to flu and pneumonia. Heart disease is the leading cause of diabetes-related deaths, and death rates are about 2–4 times higher for adults with diabetes than for those without the disease.

There are two main types of diabetes. Type 1 most often appears during childhood or adolescence. Type 2 diabetes, which is linked to obesity and physical inactivity, accounts for 90%–95% of diabetes cases and most often appears in people older than 40. However, it is now being found in younger people and even in children and teenagers.

Diabetes Is Preventable and Controllable

Although the increasing burden of diabetes and its complications is alarming, recent studies have found that lifestyle changes that include moderate weight loss and exercise can prevent or delay the onset of type 2 diabetes among adults at high risk. For people already living with diabetes, much of this burden could be prevented with improved delivery of care, proper self-management measures such as regular blood pressure, cholesterol, and A1C testing, as well as education initiatives that provide the knowledge and resources for people to take action to control their diabetes. For example,

- Studies in the United States and abroad have found that better blood glucose control reduces the risk for eye disease, kidney disease, and nerve disease by 40% in people with type 1 or type 2 diabetes.
- Blood pressure control reduces the risk for heart disease and stroke among people with diabetes by 33%–50%. It also reduces the risk for eye, kidney, and nerve diseases by about 33%. Detecting and treating early diabetic kidney disease by lowering blood pressure can reduce the decline in kidney function by 30%–70%.

Data published in 2006 by CDC indicated that about 1 in 523 people younger than age 20 had diabetes in 2001. Among this group, 79% were aged 10–19 years. The data also indicated that American Indians aged 10–19 years had the highest prevalence of type 2 diabetes, at nearly 2 in 1,000. Diabetes has its greatest effects on older adults, women, and certain racial and ethnic groups. About 1 in 5 U.S. adults over age 60 has diabetes. African American, Hispanic, American Indian, and Alaska Native adults are about twice as likely as white adults to have diabetes. In addition to the millions of Americans with diabetes, at least 57 million U.S. adults aged 20 or older have prediabetes—that is, their blood glucose level is elevated but is not high enough to be classified as diabetes. People with prediabetes are at high risk for developing type 2 diabetes.

Cost of Diabetes

According to the American Diabetes Association, the estimated cost of diabetes in the United States in 2007 was as follows:

- Total costs (direct and indirect): \$174 billion.
- Direct medical costs: \$116 billion.
- Indirect costs (related to disability, work loss, premature death): \$58 billion.
- Cost of caring for someone with diagnosed diabetes: \$1 out of every \$5 in total health care costs.

Diabetes Care: Things Are Improving But We Have Much To Do

*Among people with diabetes:
2 in 5 have poor cholesterol control
1 in 3 have poor blood pressure control
1 in 5 have poor blood glucose control*

*An integrated, systemic approach
is key to improving diabetes care*

- Improved control of blood cholesterol levels can reduce cardiovascular complications by 20%–50%.
- Detecting and treating diabetic eye disease with laser therapy can reduce the risk for loss of eyesight by about 50%–60%. Comprehensive foot care programs can reduce amputation rates by 45%–85%.

CDC Provides National Leadership and Builds Partnerships

CDC is committed to ensuring that all people, especially those at greater risk for health disparities, will achieve their optimal lifespan with the best possible quality of health in every stage of life. With agency-wide health protection goals that support healthy people in healthy places across all life stages, CDC is setting the agenda to enable people to enjoy a healthy life by delaying death and the onset of illness and disability by accelerating improvements in the health of the public.

CDC also provides leadership and funding to diabetes prevention and control programs nationwide. In addition, CDC works with partners to provide data for public health decision-making, educate the public about diabetes, and ensure good care and education for people with the disease. In 2008, CDC received about \$63 million for its Division of Diabetes Translation (DDT).

Promoting Effective State Programs

In 2007, CDC provided funding for capacity building to 22 states, 8 current or former U.S. territories, and the District of Columbia for diabetes prevention and control programs. CDC also provided funding for basic implementation to 28 states. State programs identify the disease burden in their states, develop and evaluate new prevention strategies, establish partnerships, increase awareness of prevention and control opportunities, and improve access to quality care. CDC also works with its partners to develop national public health performance standards for diabetes care. CDC has adopted the concept of conducting assessments based on well-established principles of public health services (<http://www.cdc.gov/diabetes>). Results of the assessments help to identify areas of strength and areas for improvement needed to develop the best public health programs for diabetes prevention and control.

Monitoring the Burden and Translating Science

Timely data and public health research are essential for developing a better understanding of how diabetes affects different population groups and how quality of care can be improved. CDC analyzes data from several national sources, including the Behavioral Risk Factor Surveillance System, and explores ways to collect better diabetes data on groups most at risk. To translate scientific data into higher quality care,

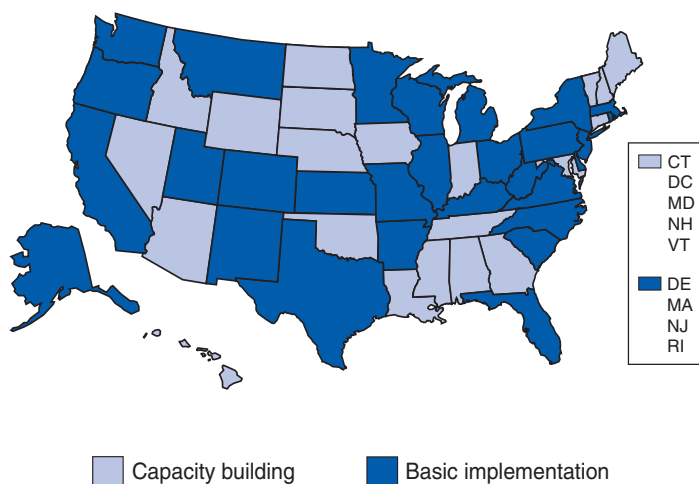
CDC works with many research partners, managed care organizations, and community health centers to assess how accepted standards of care are applied in clinical settings. CDC and its partners also examine disparities in diabetes care and develop strategies to improve existing practices.

Providing Education and Sharing Expertise

The National Diabetes Education Program (NDEP) is sponsored by CDC and the National Institutes of Health (NIH). NDEP comprises a network of more than 200 public and private partners who work to increase knowledge about diabetes and its control among employers, people with or at risk for diabetes, and health care providers. The goals are to help people with diabetes better manage the disease and to promote policies that improve quality of care and access to care. NDEP partners, including six national groups representing minorities at increased risk, also develop community interventions and tools to improve care and prevention, especially for communities with a high burden of diabetes.

NDEP products are available on the Internet (<http://www.ndep.nih.gov>) in English, Spanish, and 15 Asian and Pacific Islander languages. NDEP also provides the following three Web sites that target specific audiences: <http://www.diabetesatwork.org> (for business and managed care companies), <http://www.betterdiabetescare.nih.gov> (for health care providers), and <http://www.cdc.gov/diabetes/ndep>.

**CDC Funding for Diabetes Control Programs
Fiscal Year 2008***



* CDC also provides funds for capacity building to the following current or former U.S. territories: American Samoa, Federated States of Micronesia, Guam, Marshall Islands, Northern Mariana Islands, Palau, Puerto Rico, and U.S. Virgin Islands.
Source: <http://www.cdc.gov/diabetes/states/index.htm>.

Supporting Primary Prevention

Research suggests that the progression from prediabetes to type 2 diabetes can be prevented or delayed. In 2001, results from landmark clinical trials, including the Diabetes Prevention Program (DPP), showed that sustained lifestyle changes that included modest weight loss and physical activity substantially reduced progression to type 2 diabetes among adults who were at very high risk.

State Program in Action: Utah

Diabetes is a significant public health burden for Utah residents. More than 130,000 people in Utah have diabetes, resulting in more than 20,000 hospitalizations and 1,000 deaths each year. In 1998, the Utah Diabetes Prevention and Control Program (DPCP) created the Utah Diabetes Partnership to address the risk for complications among program participants. The partnership brings together health care groups to find common solutions to improve diabetes care in the state.

In 2005, the Utah DPCP reported the following improvements in diabetes control:

- 47% of program participants had improved their blood glucose levels (i.e., A1C below 7%), nearly double the rate from 1998.
- 57% of participants reported having an eye exam, a 37% increase from 1998.
- 57% of participants reporting having a urine protein test for kidney disease, a 72% increase from 1998.

The Utah DPCP also offers self-management classes to help participants reduce complications from diabetes by eating healthier diets, being physically active, and managing their medications properly. Sixteen state-certified diabetes self-management programs are operating in Utah. Among participants who have completed one class, 70% monitor their blood glucose levels regularly and correctly, 66% follow recommended meal plans, and 66% exercise regularly.

Results from the DPP were so compelling that the trial was ended a year early. The lifestyle intervention worked equally well for men and women and all racial/ethnic groups, and it was most effective among people aged 60 or older. A healthy diet and modest physical activity can help people cut their risk for type 2 diabetes.

Targeting Populations at Risk

- **Primary prevention for people most at risk.** CDC has initiated primary prevention pilot programs in five states and is developing methods to identify people at high risk for type 2 diabetes, policies to help these people reduce their risk, and public health programs that will slow the diabetes epidemic.
- **Native Diabetes Wellness Program.** In response to the diabetes epidemic among American Indians and Alaska Natives, CDC is working with these communities to develop culturally relevant and scientifically sound interventions to prevent complications from diabetes.
- **Translating Research Into Action for Diabetes (TRIAD).** The first and largest of its kind, TRIAD is a multicenter study designed to assess the level of care provided to people with diabetes, identify barriers to care, and find new ways to provide better care.
- **SEARCH for Diabetes in Youth.** Co-funded by CDC and NIH, this study seeks to examine the status of diabetes among U.S. children and adolescents and provide direction for addressing the diabetes burden among this age group.

Future Directions

Envisioning a world free of diabetes, CDC will continue to

- Strengthen public health surveillance for diabetes.
- Enhance state diabetes prevention and control programs.
- Conduct primary prevention research and public health interventions.
- Translate research findings into clinical and public health practice.
- Support the development and dissemination of NDEP materials that help to improve treatment and outcomes for people with diabetes, increase early diagnosis, and prevent or delay the onset of type 2 diabetes.

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