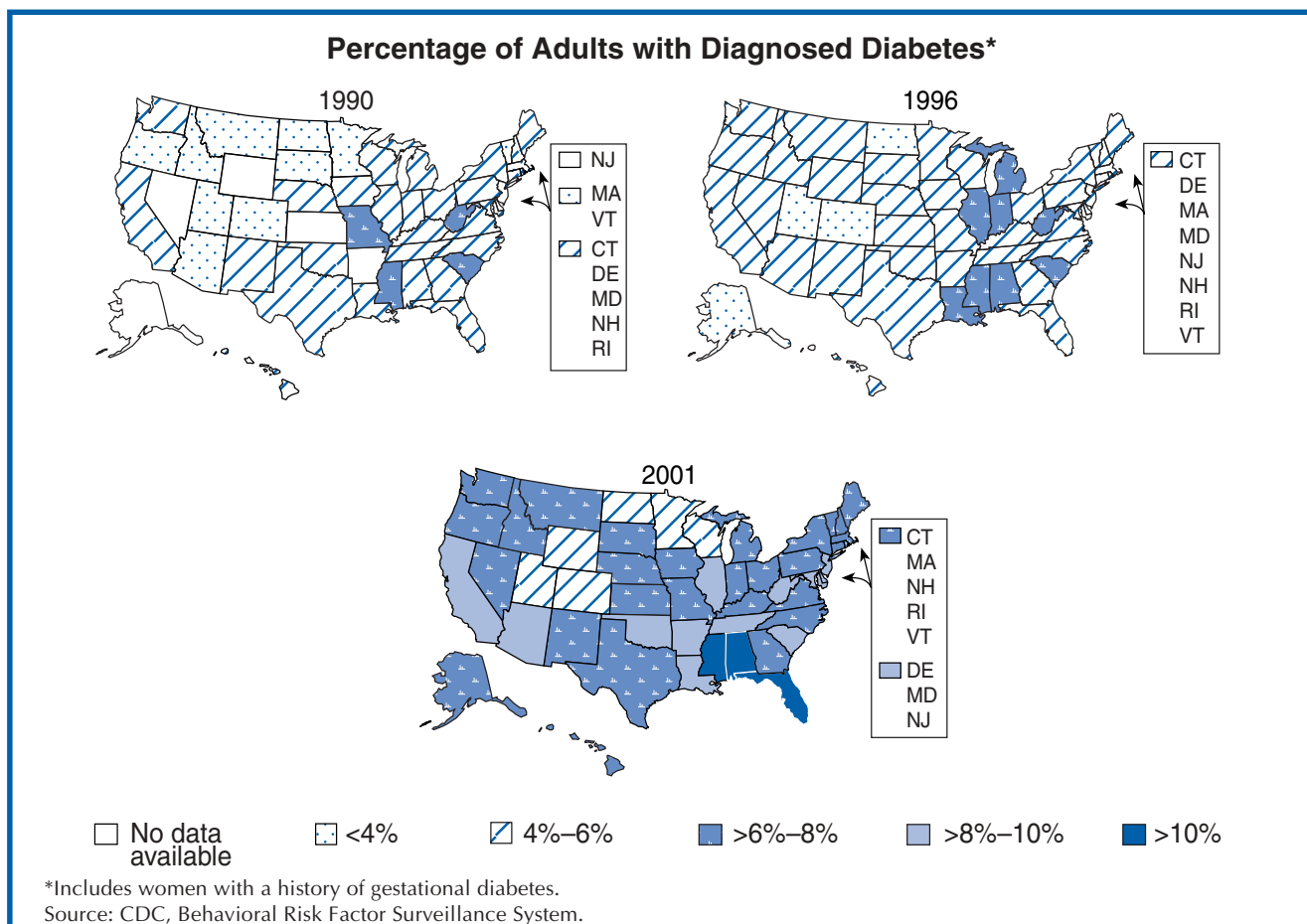


# Diabetes: Disabling, Deadly, and on the Rise 2003



*“Dramatic new evidence signals the unfolding of a diabetes epidemic in the United States. With obesity on the rise, we can expect the sharp increase in diabetes rates to continue. Unless these dangerous trends are halted, the impact on our nation’s health and medical care costs will be overwhelming.”*

Jeffrey P. Koplan, MD, MPH  
Director, Centers for Disease Control and Prevention, 1998–2002

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## Diabetes Is a Growing Public Health Problem

More than 17 million Americans have diabetes, and over 200,000 people die each year of related complications. Diabetes can cause heart disease, stroke, blindness, kidney failure, pregnancy complications, amputations of the leg, foot, and toe, as well as deaths related to flu and pneumonia. Particularly at risk are the 5.9 million Americans who are unaware that they have the disease. The number of U.S. adults with diagnosed diabetes (including women with gestational diabetes) has increased 61% since 1991 and is projected to more than double by 2050.

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. Now the sixth leading cause of death in America, diabetes has its greatest effects on the elderly, women, and certain racial and ethnic groups. One in five adults over age 65 has diabetes. African American, Hispanic, American Indian, and Alaska Native adults are about 2–3 times more likely than white adults to have diabetes.

There are two main types of diabetes. Type 1 most often appears during childhood or adolescence. Type 2 affects 90%–95% of people with diabetes and most often appears after age 40. However, it is no longer

considered an adult-only disease. It is now being found at younger ages and is even being diagnosed among children and teens. Type 2 diabetes is linked to obesity and physical inactivity, both of which can be modified to improve health.

Some women develop diabetes during pregnancy. Known as gestational diabetes, this condition affects 2%–5% of all pregnancies. Other, less common forms of diabetes result from genetic syndromes, surgery, drugs, malnutrition, infections, and other illnesses.

In addition, millions of Americans are at high risk for developing diabetes. These people have prediabetes—that is, their blood sugar level is elevated but is not high enough to be classified as diabetes. An estimated 16 million U.S. adults aged 40–74 have prediabetes.

Diabetes costs the nation nearly \$132 billion a year. The average yearly health care cost for a person with diabetes was \$13,243 in 2002, compared with \$2,560 for a person without diabetes. Diabetes costs represented 11% of national health care expenditures during 2002. These estimates are low, however, because they do not take into account the cost of undiagnosed diabetes, care provided by nonpaid caregivers, or expenditures for dental, optometry, and dietitian services, which probably are used at higher rates by people with diabetes than by others.

## Many Complications of Diabetes Can Be Prevented

**Eye disease and blindness.** Each year, 12,000–24,000 people in this country become blind because of diabetic eye disease. Regular eye exams and timely treatment 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, foot, or toe 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 learn they have gestational diabetes. These women and their babies have an increased risk for serious complications such as stillbirths, congenital malformations, and the need for cesarean sections. Women with gestational diabetes and their babies also have a greater likelihood of becoming obese and developing diabetes later in life. These complications and risks can be reduced with screenings and diabetes care before, during, and after pregnancy.

**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.

## CDC Provides National Leadership and Builds Partnerships

CDC provides leadership and funding to diabetes prevention and control programs nationwide. CDC also works with many partners to provide data for sound public health decisions, inform the public about diabetes, and ensure good care and education for Americans with diabetes.

### Promote Effective State Programs

With fiscal year 2003 funding of about \$63 million, CDC provides limited support to 26 states, 8 territories, and the District of Columbia for capacity-building diabetes prevention and control programs and more substantial support to 24 states for basic implementation programs. In addition, CDC has worked with its partners to develop national public health performance standards for diabetes care. Partners include the Association of State and Territorial Health Officials, National Association of County and City Health Officials, National Association of Local Boards of Health, American Public Health Association, and the Public Health Foundation.

The CDC National Diabetes Program has adopted the concept of conducting assessments based on the 10 essential public health services ([www.cdc.gov/diabetes](http://www.cdc.gov/diabetes)). Results of the assessments will help to identify specific areas of strength and areas for improvement needed to develop the best public health programs for diabetes prevention and control.

### Support Prevention Research

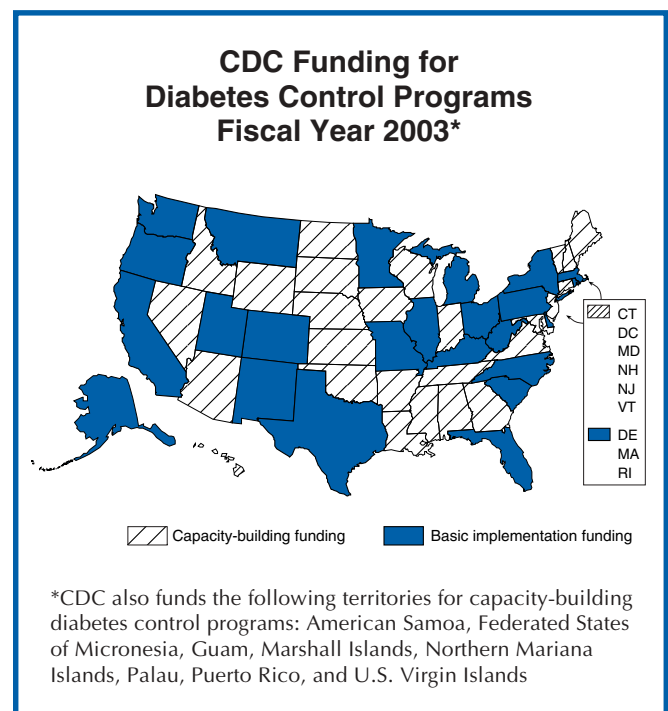
Studies suggest that the progression of prediabetes to diabetes can be prevented or delayed. In 2001, results were announced from two landmark clinical trials—the Finnish Diabetes Prevention Study and the U.S. Diabetes Prevention Program (DPP). Both studies demonstrated that sustained lifestyle changes, with modest weight loss and physical activity, resulted in substantial reductions in diabetes among older adults who were at very high risk for diabetes. 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 60 or older.

In addition, the Washington State Diabetes Collaboratives (WSDC) I and II, sponsored by the Washington State Diabetes Prevention and Control Program and Qualis Health (formerly PRO-West), are

helping primary care practices to improve the health outcomes of people with diabetes. Practice teams and health plans collaborated to improve patients' blood sugar control. Results were encouraging for the 981 patients followed from 1999 through 2001: their blood sugar decreased on average by about 10%, and the percentage of patients who had poor blood sugar control declined from 24% to 17%. The projected cost savings from improved blood sugar control is about \$419,000 a year.

### Monitor the Burden and Translate Science

Timely data and public health research are essential to better understand how diabetes affects different populations and how quality of care can be improved. CDC analyzes information from several national data 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 diabetes care are applied by health care providers and in clinical care settings. CDC and its partners also explore variations in the quality of diabetes care provided and develop and test strategies to move existing care practices closer to optimal standards.



## Educate and Share Expertise

The National Diabetes Education Program (NDEP), sponsored by CDC and the National Institutes of Health (NIH), has a network of more than 200 public and private partners that increase awareness about diabetes and its control among health care providers and people at risk for diabetes. The goal is to help people with diabetes to better manage the disease and promote policies that improve the quality of care provided and access to such care. NDEP partners also develop community interventions and tools to improve diabetes care and prevention, especially for communities with a high burden of diabetes and its complications. NDEP products are available on the Internet ([www.ndep.nih.gov](http://www.ndep.nih.gov)) and are produced in many different languages.

CDC also develops other resources for health professionals, people with diabetes, and communities. For example, *Diabetes Today* is a train-the-trainer program that allows health professionals and community leaders to develop a community plan for preventing the complications of diabetes. A Spanish version of *Diabetes Today* is available, and a regional training site serves Hawaii and the Pacific Basin.

## Target Populations at Risk

- **Primary prevention for people most at risk.** A healthy diet and modest physical activity can help people cut their risk for developing type 2 diabetes. CDC is developing methods to identify people at high risk for diabetes, policies to help these people reduce their risk, and public health programs that will slow the diabetes epidemic.
- **National Diabetes Prevention Center.** CDC funds a center in Gallup, New Mexico, that is working with American Indian and Alaska Native communities to develop culturally relevant and scientifically sound interventions to prevent complications from diabetes.
- **National minority organizations.** Through the NDEP, CDC collaborates with six national minority organizations to develop and deliver culturally and linguistically appropriate diabetes prevention and control messages to African

American, Hispanic/Latino, American Indian, and Asian American/Pacific Islander people.

- **National Agenda for Public Health Action** for diabetes and women's health. This national agenda offers recommendations to help professionals, women and their families, health care systems, work sites, communities, and schools address the burden of diabetes among women. CDC, the American Diabetes Association, the American Public Health Association, and the Association of State and Territorial Health Officials are working with many partners to carry out the plan.
- **SEARCH for Diabetes in Youth.** Rising rates of diabetes among youth are a growing public health concern. CDC and the National Institutes of Health are funding this 5-year, multicenter study to examine the current status of diabetes among U.S. children and adolescents. More than 5 million children, or 6% of all U.S. children 19 or younger, will be involved.
- **National Diabetes Collaborative.** CDC, the Health Resources and Services Administration, and other federal partners have established this collaborative to improve diabetes care by fostering excellence in federally funded health center systems. Since 1999, over 270 health centers have adopted strategies to improve quality of care. In the first year alone, over 60% of diabetes patients at these centers had the A1C blood glucose test twice a year, as recommended. The A1C test detects problems early so that action can be taken to prevent disabling, costly complications.

## Future Directions

CDC will continue to work with its partners to strengthen diabetes surveillance, prevention research, interventions, and communications. In support of Secretary of Health and Human Services Tommy Thompson's *Steps to a HealthierUS* prevention initiative, CDC plans to increase the number of diabetes prevention and control programs that receive basic implementation funding, expand research and surveillance activities to address the unique needs of women and children with diabetes, develop and carry out a national public health strategy to address type 2 diabetes among children, and expand the activities of the National Diabetes Education Program.

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