

Diabetes and Prediabetes

CDC works to prevent type 2 diabetes and improve the health of all people with diabetes.

More than 34 million Americans have diabetes. Another 88 million US adults have prediabetes, a serious health condition in which blood sugar levels are higher than normal, but not high enough yet to be diagnosed as type 2 diabetes. A person with prediabetes is at high risk of type 2 diabetes, heart disease, and stroke. Diabetes also increases the risk of heart disease and stroke and can lead to other serious complications, such as kidney failure, blindness, and amputation of a toe, foot, or leg.

People with diabetes spend more on health care, have fewer productive years, and miss more workdays compared to people who don't have diabetes. In 2017, the total estimated cost of diagnosed diabetes was \$327 billion, including \$237 billion in direct medical costs and \$90 billion in absenteeism, reduced productivity, and inability to work.

Some people are at [higher risk of type 2 diabetes](#) because they:

- Are overweight or have obesity.
- Are age 45 or older.
- Have a parent, brother, or sister with type 2 diabetes.
- Are physically active less than 3 times a week.
- Had gestational diabetes (diabetes during pregnancy) or gave birth to a baby who weighed more than 9 pounds.
- Are African American, Hispanic or Latino, American Indian, Alaska Native, Pacific Islander, or Asian American.

CDC's [Division of Diabetes Translation](#) is at the leading edge of the nation's efforts to end the devastation of diabetes. The division works with other federal agencies; state, local, and tribal health departments; health care providers; and community and faith organizations to identify people with prediabetes, prevent type 2 diabetes, prevent diabetes complications, and improve the health of all people with diabetes. These efforts have helped millions of Americans reduce their risk of type 2 diabetes and prevent or delay serious diabetes complications.

In the United States:



34.2 MILLION
people are living with diabetes.



88 MILLION
adults have prediabetes.



\$327 BILLION
is the annual estimated cost of diabetes.





1 IN 3 ADULTS HAS PREDIABETES. COULD BE YOU, YOUR BARBER, YOUR BARBER'S BARBER.

WITH EARLY DIAGNOSIS, PREDIABETES CAN BE REVERSED. TAKE THE RISK TEST.

DoIHavePrediabetes.org

The Nation's Risk Factors and CDC's Response

Some risk factors for type 2 diabetes can't be modified, such as age and family history, but some can, such as having prediabetes, being overweight, eating unhealthy food, being inactive, and smoking. CDC works to help people reduce those modifiable risk factors so they can prevent or delay developing type 2 diabetes and improve their overall health.

RISK FACTOR

Prediabetes

Prediabetes is a serious health condition in which blood sugar levels are higher than normal, but not high enough yet to be diagnosed as type 2 diabetes. A person with prediabetes is at high risk of type 2 diabetes, heart disease, and stroke. Of US adults, 88 million—more than 1 in 3—have prediabetes, and more than 8 in 10 of them don't know they have it.

CDC'S RESPONSE

CDC's [National Diabetes Prevention Program](#) (National DPP) is a public-private partnership working to build a nationwide system to deliver an affordable, evidence-based lifestyle change program proven to prevent or delay type 2 diabetes. Participants in the program learn to make healthy food choices, be more physically active, and find ways to cope with problems and stress. These lifestyle changes can cut their risk of developing type 2 diabetes by as much as 58% (71% for those 60 or older).

In April 2018, the lifestyle change program became a covered service for Medicare beneficiaries with prediabetes. This is the first preventive service model from the Center for Medicare & Medicaid Innovation that has been expanded into the Medicare program—a landmark for public health.

CDC funds all 50 states, the District of Columbia, national organizations, and several large city health departments to:

- Improve awareness of prediabetes among health care providers and people at risk.
- Increase access to and enrollment in the National DPP lifestyle change program.
- Increase coverage for the lifestyle change program among public and private payers and employers.
- Improve screening and testing for prediabetes and refer people who are eligible to the lifestyle change program.

In 2016, CDC partnered with the American Diabetes Association, the American Medical Association, and the Ad Council to launch the first national [prediabetes awareness campaign](#). The ongoing campaign's humorous public service announcements encourage millions of people to find out their risk by taking a 1-minute test at DoIHavePrediabetes.org.

People at high risk are urged to ask their doctor for a simple blood test to confirm their results. The campaign website also provides links to sites nationwide that deliver the National DPP lifestyle change program.

RISK FACTOR

Overweight and Lack of Physical Activity

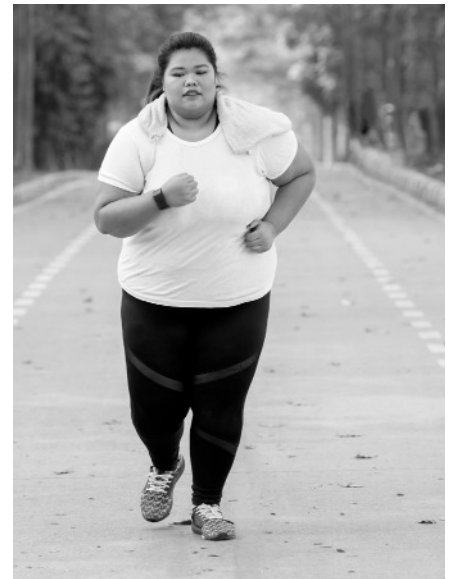
People who are overweight or have obesity are at increased risk of type 2 diabetes. In the United States, 72% of adults are overweight or have obesity. Although incidence has decreased in recent years, the number of adults with diagnosed diabetes has nearly doubled in the last 2 decades as the US population has increased, aged, and become more overweight.

Not getting enough physical activity can raise the risk of type 2 diabetes. That's because physical activity helps control blood sugar, weight, and blood pressure, as well as raise "good" cholesterol and lower "bad" cholesterol. It can also help people with diabetes prevent heart and blood flow problems, reducing the risk of heart disease and nerve damage, which are serious complications of diabetes. However, only 1 in 4 US adults and 1 in 5 high school students get enough physical activity.

CDC'S RESPONSE

CDC's [Division of Nutrition, Physical Activity, and Obesity](#) develops and shares evidence-based approaches that help make healthy living easier for everyone, which can help people reduce their risk of type 2 diabetes. For example, the division works with hospitals to support breastfeeding mothers, child care centers to promote healthy eating standards, and workplaces to change policies so that employees have more healthy food choices.

To increase physical activity opportunities, the division partners with state and local governments to promote improvements in community design, such as sidewalks and parks, that make physical activity safer and more convenient for people of all ages and abilities.



RISK FACTOR

Smoking

The risk of developing type 2 diabetes is 30% to 40% higher for current smokers than nonsmokers. Evidence shows that smoking is associated with increased belly fat, a known risk factor for type 2 diabetes. The more cigarettes a person smokes, the higher their risk of developing type 2 diabetes. People with diabetes who smoke are more likely than nonsmokers to have trouble managing their blood sugar.

People with diabetes who smoke also have higher risks of serious complications, such as heart disease, kidney disease, and poor blood flow in the legs and feet that can lead to infections, ulcers, and amputations. Other complications include retinopathy (eye disease that can cause

An advertisement featuring a man sitting on a bed with a prosthetic leg. The text reads: "A TIP FROM A FORMER SMOKER" in a small box, followed by "IF YOU SMOKE WITH DIABETES, PLAN FOR AMPUTATION, KIDNEY FAILURE, HEART SURGERY ... OR ALL THREE." in large, bold letters. Below this, it says "Bill, Age 40 Michigan". At the bottom, there is a CDC logo and the text: "Smoking makes diabetes much worse. You can quit. For free help, call 1-800-QUIT-NOW. #CDCtips".



blindness) and peripheral neuropathy (nerve damage in the arms and legs that causes numbness, pain, weakness, and poor coordination).

About 34 million US adults smoke cigarettes, and 58 million nonsmokers are exposed to secondhand smoke.

CDC'S RESPONSE

CDC's [Office on Smoking and Health](#) is at the forefront of the nation's efforts to reduce deaths and prevent chronic diseases that result from smoking, including type 2 diabetes. CDC and its partners promote efforts to prevent young people from starting to smoke, create smoke-free worksites and public spaces, help smokers quit, and reduce health disparities for groups with higher rates of chronic diseases caused by smoking.

Since 2012, CDC has been educating the public about the consequences of smoking and exposure to secondhand smoke and encouraging smokers to quit through its *Tips From Former Smokers*[®] (*Tips*[®]) education campaign. The *Tips* campaign features real people—not actors—who are living with serious health conditions caused by smoking and secondhand smoke exposure. It connects smokers with resources to help them quit, including a free national quitline (1-800-QUIT-NOW).

Diabetes Complications and CDC's Response

CDC strives to safeguard the health and improve the quality of life of all people with diabetes. Central to that effort is helping them prevent or reduce the severity of diabetes complications, including heart disease (the leading cause of early death among people with diabetes), kidney disease, blindness, and nerve damage that can lead to lower-limb amputations.

[Diabetes self-management education and support \(DSMES\)](#) services help people meet the challenges of self-care by providing them with the knowledge and skills to deal with daily diabetes management: eating healthy food, being active, checking their blood sugar, and managing stress. These programs have been shown to reduce A1C levels (average blood sugar over the last 2 to 3 months), reduce the onset and severity of diabetes complications, improve quality of life, and lower health care costs.

Diabetes is about 17% more prevalent in rural areas than urban ones, but 62% of rural counties do not have DSMES services. The use of telehealth (delivery of the program by phone, Internet, or videoconference) may allow more patients in rural areas to benefit from DSMES and the National DPP lifestyle change program. CDC funds state and local health departments to improve access to, participation in, and health benefit coverage for DSMES, with emphasis on programs that achieve Association of Diabetes Care & Education Specialists (formerly the American Association of Diabetes Educators) accreditation or American Diabetes Association recognition. These programs meet national quality standards and may be more sustainable because of reimbursement eligibility.