

## **Deaths among People with Diabetes, United States, 2006**

- Diabetes was the seventh leading cause of death listed on U.S. death certificates in 2006. This ranking is based on the 72,507 death certificates in 2006 in which diabetes was listed as the underlying cause of death. According to death certificate reports, diabetes contributed to a total of 233,619 deaths in 2005, the latest year for which data on contributing causes of death are available.
- Diabetes is likely to be underreported as a cause of death. Studies have found that only about 35 to 40 percent of decedents with diabetes had it listed anywhere on the death certificate and only about 10 to 15 percent had it listed as the underlying cause of death.
- Overall, the risk for death among people with diabetes is about twice that of people without diabetes of similar age.

## **Complications of Diabetes in the United States**

### **Heart Disease and Stroke**

- In 2004, heart disease was noted on 68 percent of diabetes-related death certificates among people aged 65 years or older.
- In 2004, stroke was noted on 16 percent of diabetes-related death certificates among people aged 65 years or older.
- Adults with diabetes have heart disease death rates about two to four times higher than adults without diabetes.
- The risk for stroke is two to four times higher among people with diabetes.

### **High Blood Pressure**

- In 2003 to 2004, 75 percent of adults with self-reported diabetes had blood pressure greater than or equal to 130/80 millimeters of mercury (mm Hg) or used prescription medications for hypertension.

### **Blindness**

- Diabetes is the leading cause of new cases of blindness among adults aged 20 to 74 years.
- Diabetic retinopathy causes 12,000 to 24,000 new cases of blindness each year.

### **Kidney Disease**

- Diabetes is the leading cause of kidney failure, accounting for 44 percent of new cases in 2005.
- In 2005, 46,739 people with diabetes began treatment for end-stage kidney disease in the United States and Puerto Rico.
- In 2005, a total of 178,689 people with end-stage kidney disease due to diabetes were living on chronic dialysis or with a kidney transplant in the United States and Puerto Rico.

## **Nervous System Disease**

- About 60 to 70 percent of people with diabetes have mild to severe forms of nervous system damage. The results of such damage include impaired sensation or pain in the feet or hands, slowed digestion of food in the stomach, carpal tunnel syndrome, erectile dysfunction, or other nerve problems.
- Almost 30 percent of people with diabetes aged 40 years or older have impaired sensation in the feet—for example, at least one area that lacks feeling.
- Severe forms of diabetic nerve disease are a major contributing cause of lower-extremity amputations.

## **Amputations**

- More than 60 percent of nontraumatic lower-limb amputations occur in people with diabetes.
- In 2004, about 71,000 nontraumatic lower-limb amputations were performed in people with diabetes.

## **Dental Disease**

- Periodontal, or gum, disease is more common in people with diabetes. Among young adults, those with diabetes have about twice the risk of those without diabetes.
- Persons with poorly controlled diabetes (A1C > 9 percent) were nearly three times more likely to have severe periodontitis than those without diabetes.
- Almost one-third of people with diabetes have severe periodontal disease with loss of attachment of the gums to the teeth measuring 5 millimeters or more.

## **Complications of Pregnancy**

- Poorly controlled diabetes before conception and during the first trimester of pregnancy among women with type 1 diabetes can cause major birth defects in 5 to 10 percent of pregnancies and spontaneous abortions in 15 to 20 percent of pregnancies.
- Poorly controlled diabetes during the second and third trimesters of pregnancy can result in excessively large babies, posing a risk to both mother and child.

## **Other Complications**

- Uncontrolled diabetes often leads to biochemical imbalances that can cause acute life-threatening events, such as diabetic ketoacidosis and hyperosmolar, or nonketotic, coma.
- People with diabetes are more susceptible to many other illnesses and, once they acquire these illnesses, often have worse prognoses. For example, they are more likely to die with pneumonia or influenza than people who do not have diabetes.
- Persons with diabetes aged 60 years or older are two to three times more likely to report an inability to walk a quarter of a mile, climb stairs, do housework, or use a mobility aid compared with persons without diabetes in the same age group.

## **Preventing Diabetes Complications**

Diabetes can affect many parts of the body and can lead to serious complications such as blindness, kidney damage, and lower-limb amputations. Working together, people with diabetes, their support network, and their health care providers can reduce the occurrence of these and other diabetes complications by controlling the levels of blood glucose, blood pressure, and blood lipids and by receiving other preventive care practices in a timely manner.

### **Glucose Control**

- Studies in the United States and abroad have found that improved glycemic control benefits people with either type 1 or type 2 diabetes. In general, every percentage point drop in A1C blood test results—for example, from 8.0 to 7.0 percent—can reduce the risk of microvascular complications—eye, kidney, and nerve diseases—by 40 percent.
- In patients with type 1 diabetes, intensive insulin therapy has long-term beneficial effects on the risk of cardiovascular disease.

### **Blood Pressure Control**

- Blood pressure control reduces the risk of cardiovascular disease—heart disease or stroke—among persons with diabetes by 33 to 50 percent, and the risk of microvascular complications—eye, kidney, and nerve diseases—by approximately 33 percent.
- In general, for every 10 mm Hg reduction in systolic blood pressure, the risk for any complication related to diabetes is reduced by 12 percent.

### **Control of Blood Lipids**

- Improved control of LDL cholesterol can reduce cardiovascular complications by 20 to 50 percent.

### **Preventive Care Practices for Eyes, Feet, and Kidneys**

- Detecting and treating diabetic eye disease with laser therapy can reduce the development of severe vision loss by an estimated 50 to 60 percent.
- Comprehensive foot care programs can reduce amputation rates by 45 to 85 percent.
- Detecting and treating early diabetic kidney disease by lowering blood pressure can reduce the decline in kidney function by 30 to 70 percent. Treatment with angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) are more effective in reducing the decline in kidney function than other blood pressure lowering drugs.
- In addition to lowering blood pressure, ARBs reduce proteinuria, a risk factor for developing kidney disease, by 35 percent—similar to the reduction achieved by ACE inhibitors.

## **Estimated Diabetes Costs in the United States in 2007**

**Total—direct and indirect: \$174 billion**

**Direct medical costs: \$116 billion**

- After adjusting for population age and sex differences, average medical expenditures among people with diagnosed diabetes were 2.3 times higher than what expenditures would be in the absence of diabetes.

**Indirect costs:** \$58 billion—disability, work loss, premature mortality

### **National Estimates on Diabetes**

**Prevalence of Diagnosed and Undiagnosed Diabetes in the United States, All Ages, 2007**

**Total: 23.6 million people—7.8 percent of the population—have diabetes.**

**Diagnosed: 23.7 million people**

**Undiagnosed: 65 million people**

**Prevalence of Diagnosed and Undiagnosed Diabetes among People Aged 20 Years or Older, United States, 2007**

**Age 20 years or older:** 23.5 million, or 10.7 percent, of all people in this age group have diabetes.

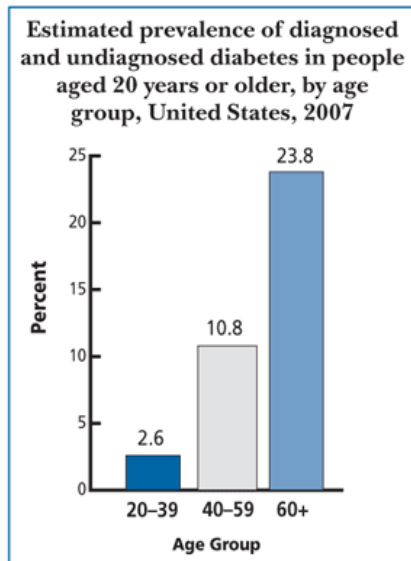
**Age 60 years or older:** 12.2 million, or 23.1 percent, of all people in this age group have diabetes.

**Men:** 12.0 million, or 11.2 percent, of all men aged 20 years or older have diabetes.

**Women:** 11.5 million, or 10.2 percent, of all women aged 20 years or older have diabetes.

**Non-Hispanic whites:** 14.9 million, or 9.8 percent, of all non-Hispanic whites aged 20 years or older have diabetes.

**Non-Hispanic blacks:** 3.7 million, or 14.7 percent, of all non-Hispanic blacks aged 20 years or older have diabetes.



*Source:* 2004–2006 National Health Interview Survey estimates projected to year 2007.

[Detailed information](#) about this graph is available.

### **Prevalence of Diagnosed Diabetes in People Younger than 20 Years of Age, United States, 2007**

- About 186,300 people younger than 20 years have diabetes—type 1 or type 2. This represents 0.2 percent of all people in this age group. Estimates of undiagnosed diabetes are unavailable for this age group.

### **Race and Ethnic Differences in Prevalence of Diagnosed Diabetes**

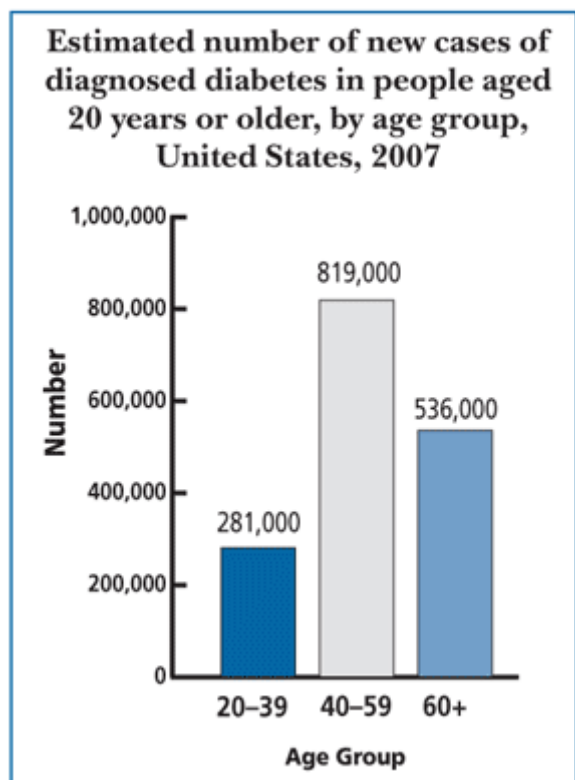
Sufficient data are not available to derive prevalence estimates of both diagnosed and undiagnosed diabetes for all minority populations. For example, national survey data cannot provide reliable estimates for the Native Hawaiian and other Pacific Islander population. However, national estimates of diagnosed diabetes for certain minority groups are available from national survey data and from the IHS user population database, which includes data for approximately 1.4 million American Indians and Alaska Natives in the United States who receive health care from the IHS. Because most minority populations are younger and tend to develop diabetes at earlier ages than the non-Hispanic white population, it is important to control for population age differences when making race and ethnic comparisons.

- Data from the 2005 IHS user population database indicate that 14.2 percent of the American Indians and Alaska Natives aged 20 years or older who received care from IHS had diagnosed diabetes. After adjusting for population age differences, 16.5 percent of the total adult population served by IHS had diagnosed diabetes, with rates varying by region from 6.0 percent among Alaska Native adults to 29.3 percent among American Indian adults in southern Arizona.
- After adjusting for population age differences, 2004 to 2006 national survey data for people aged 20 years or older indicate that 6.6 percent of non-Hispanic whites, 7.5 percent of Asian Americans, 10.4 percent of Hispanics, and 11.8 percent of

non-Hispanic blacks had diagnosed diabetes. Among Hispanics, rates were 8.2 percent for Cubans, 11.9 percent for Mexican Americans, and 12.6 percent for Puerto Ricans.

### **Incidence of Diagnosed Diabetes among People Aged 20 Years or Older, United States, 2007**

A total of 1.6 million new cases of diabetes were diagnosed in people aged 20 years or older in 2007.



Source: SEARCH for Diabetes in Youth Study.

NHW=Non-Hispanic whites; AA=African Americans; H=Hispanics; API=Asians/Pacific Islanders; AI=American Indians

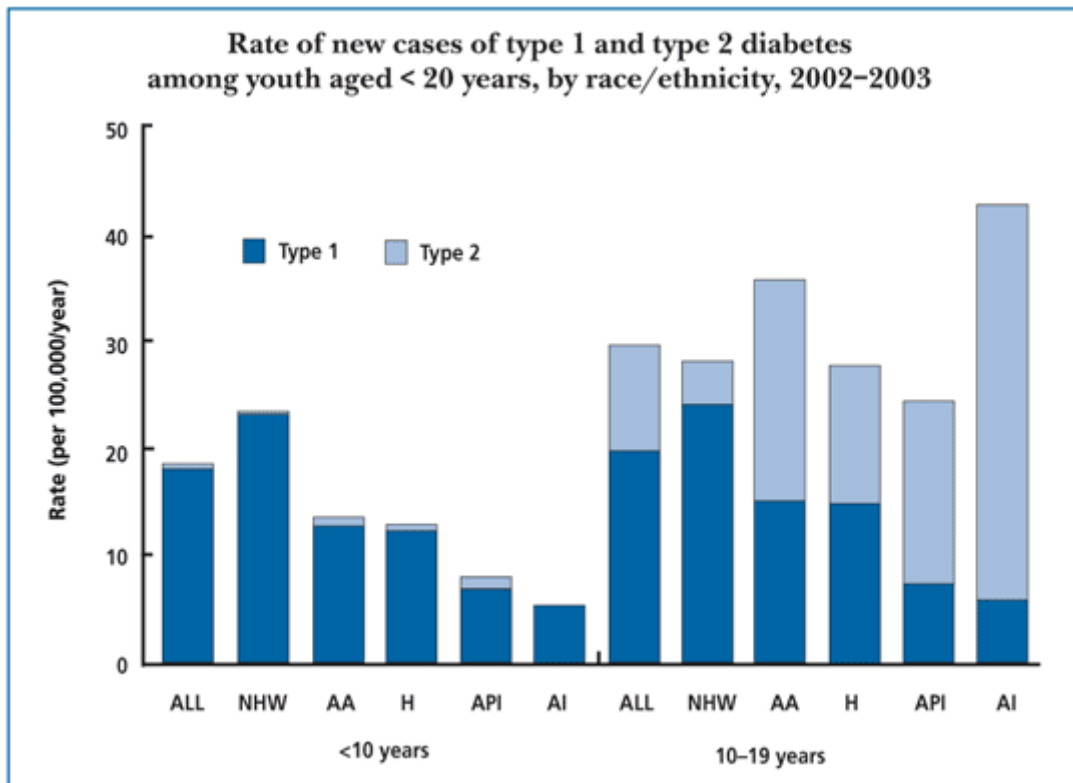
[Detailed information](#) about this graph is available.

### **Incidence of Diagnosed Diabetes in People Younger than 20 Years of Age, United States, 2002 to 2003**

SEARCH for Diabetes in Youth is a multicenter study funded by the CDC and the NIH to examine diabetes—type 1 and type 2—among children and adolescents in the United States. SEARCH findings for the communities studied include:

- Based on 2002 to 2003 data, 15,000 youth in the United States were newly diagnosed with type 1 diabetes annually, and about 3,700 youth were newly diagnosed with type 2 diabetes annually.
- The rate of new cases among youth was 19.0 per 100,000 each year for type 1 diabetes and 5.3 per 100,000 for type 2 diabetes.
- Non-Hispanic white youth had the highest rate of new cases of type 1 diabetes.

- Type 2 diabetes was extremely rare among youth aged <10 years. While still infrequent, rates were greater among youth aged 10 to 19 years compared with younger children, with higher rates among U.S. minority populations compared with non-Hispanic whites.
- Among non-Hispanic white youth aged 10 to 19 years, the rate of new cases of type 1 diabetes was higher than for type 2 diabetes. For Asian/Pacific Islander and American Indian youth aged 10 to 19 years, the opposite was true—the rate of new cases of type 2 was greater than the rate for type 1 diabetes. Among African American and Hispanic youth aged 10 to 19 years, the rates of new cases of type 1 and type 2 diabetes were similar.



Source: SEARCH for Diabetes in Youth Study.

NHW=Non-Hispanic whites; AA=African Americans; H=Hispanics; API=Asians/Pacific Islanders; AI=American Indians

[Detailed information](#) about this graph is available.

## Acknowledgments

The following organizations collaborated in compiling the information for this fact sheet:

- Agency for Healthcare Research and Quality  
[www.ahrq.gov/browse/diabetes.htm](http://www.ahrq.gov/browse/diabetes.htm)
- American Association of Diabetes Educators  
[www.diabeteseducator.org](http://www.diabeteseducator.org)
- American Diabetes Association  
[www.diabetes.org](http://www.diabetes.org)
- Centers for Disease Control and Prevention  
[www.cdc.gov/diabetes](http://www.cdc.gov/diabetes)  
[www.cdc.gov/nchs](http://www.cdc.gov/nchs)

- Centers for Medicare and Medicaid Services  
[www.cms.hhs.gov](http://www.cms.hhs.gov)
- U.S. Department of Veterans Affairs  
[www.va.gov/health/diabetes](http://www.va.gov/health/diabetes)
- Health Resources and Services Administration  
[www.hrsa.gov](http://www.hrsa.gov)
- Indian Health Service  
[www.ihs.gov/MedicalPrograms/Diabetes/index.asp](http://www.ihs.gov/MedicalPrograms/Diabetes/index.asp)
- Juvenile Diabetes Research Foundation International  
[www.jdrf.org](http://www.jdrf.org)
- National Diabetes Education Program, a joint program of the NIH and the CDC  
[www.ndep.nih.gov](http://www.ndep.nih.gov)  
[www.cdc.gov/diabetes/ndep/index.htm](http://www.cdc.gov/diabetes/ndep/index.htm)
- National Diabetes Information Clearinghouse  
[www.diabetes.niddk.nih.gov](http://www.diabetes.niddk.nih.gov)
- National Institute of Diabetes and Digestive and Kidney Diseases of the NIH  
[www.niddk.nih.gov](http://www.niddk.nih.gov)
- U.S. Department of Health and Human Services, Office of Minority Health  
[www.omhrc.gov](http://www.omhrc.gov)

### **Note**

This publication is not subject to copyright restrictions; please duplicate and distribute copies as desired.

**[www.DiabetesWellnessClinicofAmerica.com](http://www.DiabetesWellnessClinicofAmerica.com)**