



JAGRUTI PANDYA
Jagruti has type 2 diabetes

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Study shows only 2 in 5 US adults were screened for diabetes

Although 3 in 4 US adults met American Diabetes Association (ADA) criteria for diabetes screening in 2005-2012, only 2 in 5 adults were actually screened, according to a comprehensive national study reported in the *Journal of General Internal Medicine*.

Furthermore, the study found that many of those who were screened did not meet ADA's screening criteria. Only 46% of those for whom screening was recommended actually were screened, while nearly 30% of those for whom screening was not recommended were screened (see Table 1). The ADA recommends screening every 3 years for everyone older than age 45. It also recommends screening people younger than 45 who are overweight and have another risk factor, such as hypertension, a family history of diabetes, physical inactivity, or a high-risk racial or ethnic identity.

In the study, relatively high percentages of people who met the screening criteria tested positive for diabetes or prediabetes, while few people not meeting the screening criteria tested positive for diabetes (see Table 2). The authors conclude the ADA criteria "appear to appropriately discriminate between levels of risk for undiagnosed diabetes." The study found that 3% of American adults had undiagnosed diabetes and 30% had undiagnosed prediabetes.

The researchers analyzed four 2-year cycles of the National Health and Nutrition Examination Survey (NHANES). Conducted by the CDC-based National Center for Health Statistics, NHANES comprises a home interview of civilian non-institutionalized adults, age 21 and older, for all individuals in the survey sample. Statistically representative subsamples of adults receive laboratory testing and clinical

examinations. The study population included more than 17,000 individuals. The researchers excluded individuals who were pregnant or reported having diabetes or prediabetes.

Table 1. Percentages of US Adults Reporting Being Screened for Diabetes Within the Past 3 Years, by ADA Screening Category, 2005-2012.

>45	<45 high-risk	All screening-recommended	Screening-not-recommended	Total population
50%	37.9%	46.2%	29.6%	42.4%

Source: National Health and Nutrition Examination Survey data¹.

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The screening rates among high-risk people under age 45 were 37% higher for African Americans and 43% higher for Hispanics comparatively to non-Hispanic whites. (Note: these figures are adjusted for insurance status and certain other factors.)

To prevent prediabetes from progressing by identifying adults with risk factors and referring them to diabetes prevention programs, the authors say “improving screening rates could be considered a public health priority. Screening younger and high-risk groups may be more cost-effective than screening older persons.” The article abstract can be found [here](#).

Since this study was conducted, the US Preventive Services Task Force has changed its own diabetes screening criteria, which now

more closely resemble those of the ADA. The task force’s updated guideline calls for screening all asymptomatic adults age 40 to 70 who are overweight or obese. The task force is an independent body of experts coordinated by the Agency for Healthcare Research and Quality. The guidelines also state: “Persons who have a family history of diabetes, have a history of gestational diabetes or polycystic ovarian syndrome, or are members of certain racial and ethnic groups (that is, African Americans, American Indians or Alaskan Natives, Asian Americans, Hispanics or Latinos, or Native Hawaiians or Pacific Islanders) may be at increased risk for diabetes at a younger age or at a lower body mass index. Clinicians should consider screening earlier in persons with 1 or more of these characteristics.”^{2,3}

Table 2. Prevalence of Undiagnosed Diabetes and Prediabetes in US Adults, by ADA Screening Category, 2005-2012.

Screening category	Positive for diabetes	Positive for prediabetes
Older than 45 (screening recommended)	4.4%	41.1%
High-risk younger than 45 (screening recommended)	2.2%	25.7%
Low-risk younger than 45 (screening not recommended)	0.4%	10.3%
Total adult population	2.9%	30.2%

Source: National Health and Nutrition Examination Survey data¹.

RUBY TARTANIAN
Ruby has type 1 diabetes



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Behavior programs for people with diabetes assessed in meta-analysis

Diabetes self-management education (DSME) programs with additional support tend to lead to clinically important improvements in glycemic control. The additional support may be clinical, psychosocial, educational, or behavioral.

These findings emerge from a systematic review and compilation of results, or meta-analysis, of 132 randomized controlled trials published in 1993-2015.⁴ The authors found that successful DSME programs usually offer 11 or more contact hours with health professionals or other personnel, typically occurring face-to-face rather than technologically through media. They found lifestyle programs focusing on weight loss or physical activity produce similar glucose control results as DSME programs, and lifestyle programs out-perform DSME on weight loss, as measured by body mass index.

DSME was found more effective with younger adults than with people older than age 65. It was also found more effective for people with poor glycemic control than for people with good control, likely because many people with good control already adhere to recommended

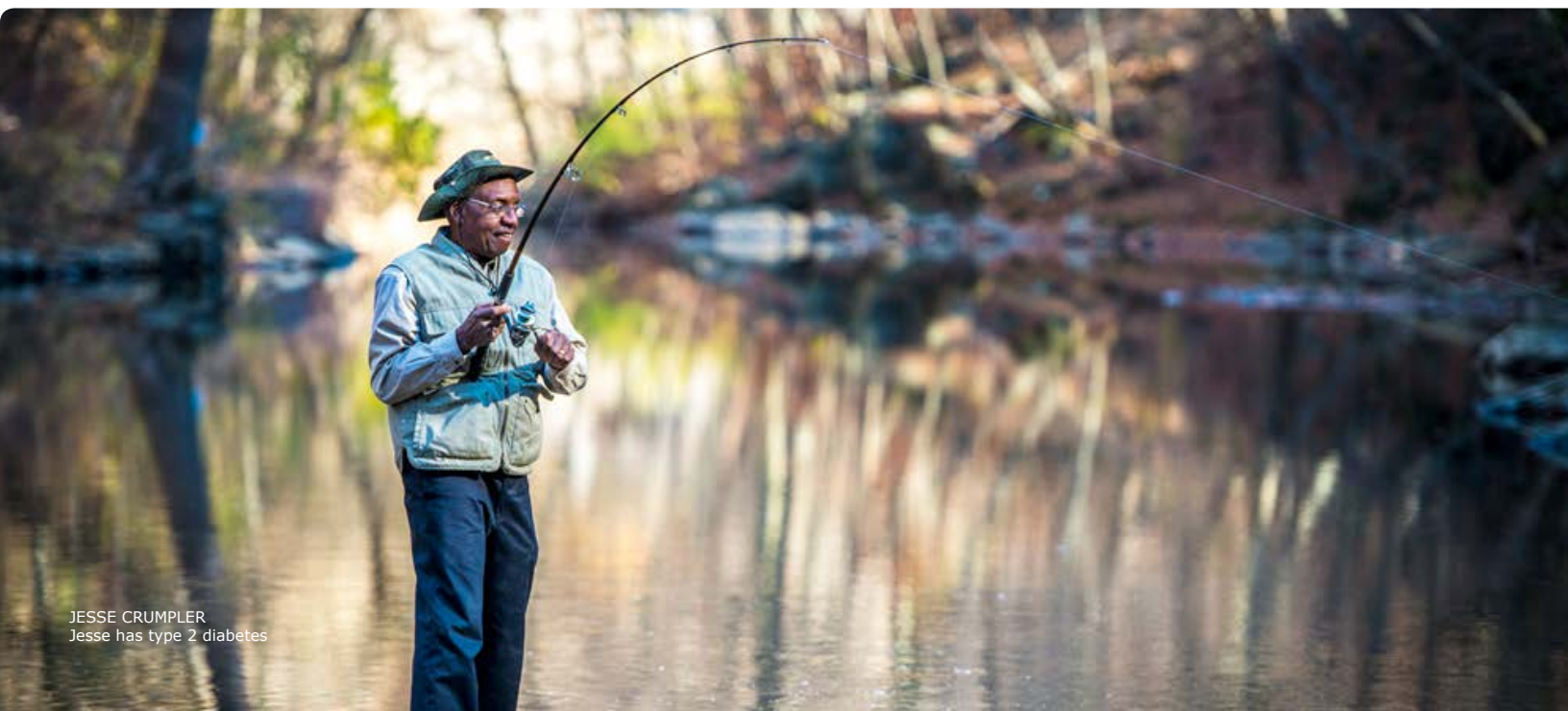
health practices. When provided to members of minority groups, DSME was most effective when tailored in some way, such as including peer group interaction.

The review was funded by the Agency for Healthcare Research and Quality and is reported in the *Annals of Internal Medicine*. Most studies were conducted in the United States, but included studies from 15 other countries. Outcomes were computed at the end of the interventions and at 6 and 12 months afterward.

In general, DSME programs without additional support provide little benefit, say the authors, especially if they offer fewer than 11 contact hours.

“It seems that programs require a substantial amount of contact time or, for DSME-based programs, a support component to best train people in their self-care.”

The article can be found [here](#).



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California adults with serious mental illness lack diabetes screening

Researchers have found that 7 in 10 Medi-Cal (California Medicaid) beneficiaries with schizophrenia, bipolar disease, or other serious mental illness were not screened for diabetes in 2009-2011. The strongest predictor, or correlate, of diabetes screening was visiting a primary care practitioner.

People with serious mental illness are at elevated risk for diabetes, and on average they die 25 years younger than the general population. The ADA recommends annual diabetes screening of people who are treated with antipsychotic medications.⁵ (The specific statement can be found [here](#), on page S9.)

This study included nearly 51,000 individuals who were age 18 or older and, during each of 2 study periods, had a prescription for an antipsychotic medication and accessed mental health services. The study was reported in a research letter to *JAMA Internal Medicine*.⁶ It can be found [here](#).

An editor's note accompanying the research letter states: "To improve care for persons with serious mental illness, it will be necessary to break down the silos that separate the mental health and physical health care systems."⁷ The beginning of the note can be found [here](#).

PREDIABETES AWARENESS CAMPAIGN LAUNCHED

The US Centers for Disease Control and Prevention (CDC) has announced a new public education campaign on prediabetes. The ADA and American Medical Association have collaborated with the CDC in the endeavor, called the National Prediabetes Awareness Campaign. The CDC-ADA-AMA effort will include advertisements, or public service announcements, in English and Spanish. An estimated 86 million adult Americans – more than 1 in 3 – have prediabetes. The campaign aims to increase awareness and promote diet change and physical activity in affected individuals. CDC website information on prediabetes can be found [here](#), as well as the news release announcing the campaign [here](#).

NANCY JOHNSON
Nancy has type 2 diabetes



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Study shows decline in excess risk of death from diabetes

The adjusted excess risk of death from type 2 diabetes fell to a historically low level of 15% in a large study covering the period of 1998 to 2011 in Sweden. However, diabetes-associated mortality risks were dramatically higher in people younger than 55 years of age. Furthermore, people with diabetes were far more likely than those without diabetes to have cardiovascular conditions.

The Swedish population study included 436,000

people in the Scandinavian country's National Diabetes Register and 2.1 million controls. It appears in the *New England Journal of Medicine*.⁸ In contrast to the 15% figure, the risk (or hazard ratio) of death was 27% higher for people with diabetes without adjustments for education, comorbidities, country of birth, diabetes duration, age, and sex (see Table 3). The adjusted risk of death from cardiovascular conditions was 14%, and the corresponding unadjusted risk was 33%.

Table 3. Excess Risks of Mortality Associated with Type 2 Diabetes, Sweden, 1998–2011.

Measure	People with diabetes	Control population	Difference (%)
Death rate overall	17.7%	14.5%	22.1%
Deaths per 1000 person-years from all conditions	38.64	30.30	27.5%
Deaths per 1000 person-years from all conditions, people <55	6.89	2.97	132.0%
Deaths per 1000 person-years from cardiovascular conditions	17.15	12.86	33.4%
Deaths per 1000 person-years from cardiovascular conditions, people <55	2.20	0.72	205.6%

Source: Sweden National Diabetes Register and cause-of-death register.⁷ Calculations of differences by New & News.

As noted in the article, the universe consists of 17,000 people. Extrapolation to the entire US population was not part of the study and might contradict CDC figures.

SYLVESTER LAWRENCE
Sylvester has type 2 diabetes



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Cardiovascular conditions were considerably more prevalent in people with diabetes (see Table 4). These conditions, especially myocardial infarction (heart attack), comprised the most common cause of death in people with diabetes.

The study results appear to reinforce the importance of glycemic control in preventing diabetes-associated deaths. Among people younger than 55, a glycated hemoglobin (A1C) level of 9.7% or higher was associated with a death rate more than 4 times higher than the rate for the control group. When the level was 6.9% or lower, the death rate was twice as high.

Kidney disease also contributed to the risk of death in people with diabetes. In the younger-than-55 group, excess mortality was about 15 times higher in people with diabetes and advanced chronic kidney disease than in the

control population. The authors found that “excess mortality in type 2 diabetes was substantially higher with worsening glycemic control, severe renal complications, impaired renal function, and younger age.”

The researchers also found that 38% of people with diabetes who died were smokers, compared with a reported rate of 18% in the general population.

After 2005, the hazard ratio fell by almost 25%. To improve the outlook further, especially among younger people, the authors cite “smoking cessation, increased physical activity, and the development of new cardiovascular-protective drugs, such as alternative lipid-lowering medications for persons who cannot take statins” as potentially favorable developments. The article abstract can be found [here](#).

Table 4. Prevalence of Cardiovascular Conditions in People with Diabetes and Controls, Sweden, 1998-2011.

Condition	People with diabetes (%)	Control population (%)	Difference (%)
Acute myocardial infarction	9.0%	4.3%	109.3%
Coronary heart disease	15.8%	7.9%	100.0%
Atrial fibrillation	8.8%	5.6%	57.1%
Heart failure	6.9%	3.3%	109.1%
Stroke	6.3%	3.9%	61.5%

Source: Sweden In-patient Register.⁷ Calculations of differences by New & News.

As noted in the article, the universe consists of 17,000 people. Extrapolation to the entire US population was not part of the study and might contradict CDC figures.

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DENISE TROUTMAN
Denise has type 2 diabetes



Depression care helps prevent mortality in people with diabetes

Depression care managers working with primary care practitioners were found to contribute to lower mortality rates for people older than age 60 with diabetes in a multi-site, randomized, controlled trial study of 1226 people.⁹ The intervention, known as Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT), involved 2 years of algorithm-based care management.

During a follow-up period that averaged 7 years, among people with diabetes and major depression, individuals receiving the intervention were 53% less likely to die than individuals not receiving the intervention. Among people with diabetes and only minor depression, the intervention did not reduce the risk of death significantly.

Several chronic conditions besides diabetes were assessed in the study. It is reported in the January issue of the *Journal of the American Geriatrics Society* and can be found [here](#).

Veterans study links diabetes, depression, mortality

In a large study of US veterans, 19% of people with diabetes developed kidney disease over a period of about 7 years. The presence of depression at baseline was associated with a 25% increased risk of mortality and a 20% increased risk of developing kidney disease.

Depression in people with diabetes was similarly associated with a 35% higher risk of stroke and a 24% higher risk of coronary heart disease.

Some 930,000 people with diabetes were included in the study, most of whom were male. The study was reported during Kidney Week. An abstract was published in the *Journal of the American Society of Nephrology*.

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Endocrine system health care costs fall; overall health spending rises

Ready for some economics? In an analysis of US health care spending trends by disease category, the endocrine system showed a steeper decline in spending growth than any of 14 other disease categories.¹⁰ Spending for endocrine conditions, which include diabetes and high cholesterol, grew at a 6.5% slower rate in 2005-2010 in comparison to 2000-2005.

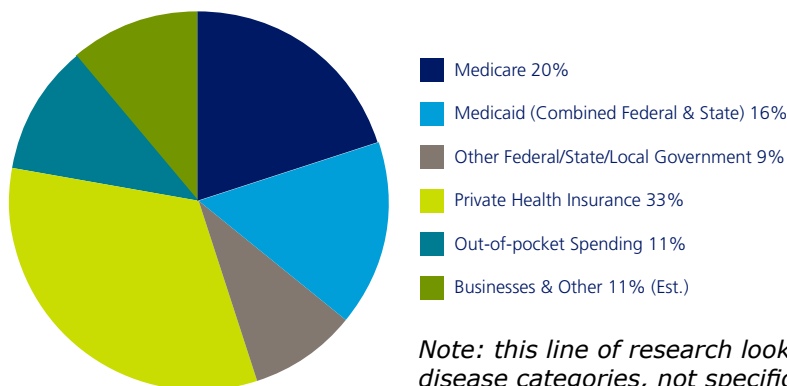
The decline mainly reflects slower growth in cost per case treated. But, the rate of growth also slowed in the number of people treated for endocrine conditions overall.

For all conditions combined, spending growth fell by 2.3% during the first decade of the 21st century. The US Commerce Department's Bureau of Economic Analysis conducted the analysis. It appears in the January issue of *Health Affairs*. The abstract can be found [here](#).

Meanwhile, as it does every January, *Health Affairs* also published the latest annual federal review of health expenditures.¹¹ In 2014, total national health spending rose 5.3% to reach the \$3 trillion mark. This breaks down to \$9523 per person.

One leading factor: Medicaid enrollment grew by 13%, as about half of the states took advantage of the Affordable Care Act funding to expand coverage (see Figure 1).

Figure 1. US Health Care Spending by Source of Funds, 2014



The Centers for Medicare and Medicaid Services produced the report. The abstract can be found [here](#).¹²

LEARNING FROM NATURE: THE NORTHERN ELEPHANT SEAL

Some medical advances derive from biologists' observations. As a recent article in *Natural History* shows, adult northern elephant seals often fast for as long as 3 months, twice each year. They are able to do this partly by increasing their supply of the enzyme GLUT4, which facilitates the movement of glucose from blood into muscles and fat cells, which provides energy. In humans with diabetes, a decline in GLUT4 supply leads to serious medical complications, such as diseases of the heart, kidney, and eye. By learning how this large marine mammal produces this essential enzyme, scientists could spark important progress in diabetes care. A link to the magazine, associated with the American Museum of Natural History in New York, can be found [here](#).¹³

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