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For Diabetics, Health Risks Fall Sharply

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Federal researchers on Wednesday reported the first broad national picture of progress against some of the most devastating complications of diabetes, which affects millions of Americans, finding that rates of heart attacks, strokes, kidney failure and amputations fell sharply over the past two decades.

The biggest declines were in the rates of heart attacks and deaths from high blood sugar, which dropped by more than 60 percent from 1990 to 2010, the period studied. While researchers had had patchy indications that outcomes were improving for diabetic patients in recent years, the study, published in *The New England Journal of Medicine*, documents startling gains.

“This is the first really credible, reliable data that demonstrates that all of the efforts at reducing risk have paid off,” said Dr. David M. Nathan, director of the Diabetes Center at Massachusetts General Hospital, who was not involved in the study. “Given that diabetes is the chronic epidemic of this millennium, this is a very important finding.”

The number of Americans with diabetes more than tripled over the period of the study and is now nearly 26 million. Nearly all the increase came from Type 2 diabetes, which is often related to obesity and is the more common form of the disease. An additional 79 million Americans have pre-diabetes, which means they are at high risk of developing the disease.

Researchers from the Centers for Disease Control and Prevention, who wrote the study, estimate that diabetes and its complications account for about \$176 billion in medical costs every year. The study measured outcomes for both Type 1 and Type 2.

Researchers said the declines were the fruit of years of efforts to improve the health of patients with Type 2 diabetes. Doctors are much better now at controlling

the risk factors that can lead to complications — for example, using medications to control blood sugar, cholesterol and blood pressure — health experts said. What is more, a widespread push to educate patients has improved how they look after themselves. And a major effort among health care providers to track the progress of diabetes patients and help steer the ones who are getting off track has started to have an effect.

“These results are very impressive,” said Dr. K. M. Venkat Narayan, professor of medicine and epidemiology at Emory University, who specializes in diabetes and was not involved in the study. “There is strong evidence that we’re implementing better care for patients with diabetes. Awareness has increased tremendously, and there’s been a great deal of emphasis on coordinated care in health care settings.”

Edward W. Gregg, a senior epidemiologist at the Centers for Disease Control and Prevention and the lead author of the study, said researchers used four federal data sets — the National Health Interview Survey, the National Hospital Discharge Survey, the United States Renal Data System, and Vital Statistics — over a 20-year period to give a comprehensive picture of diabetes outcomes.

Dr. Gregg said the study relied on large sample sizes, including hundreds of thousands of diabetics who had heart attacks, and thousands who died from high blood sugar.

“This is the first time we’ve put the full spectrum together over a long period of time,” Dr. Gregg said. He pointed out that heart attacks, which used to be the most common complication by far, had dropped down to the level of stroke, which also fell.

“We were a bit surprised by the magnitude of the decrease in heart attack and stroke,” he said.

Beyond the declines in the rates of heart attacks and deaths from high blood sugar, the study found that the rates of strokes and lower extremity amputations — including upper and lower legs, ankles, feet, and toes — fell by about half. Rates for end-stage kidney failure dropped by about 30 percent. The study did not measure blindness, another critical diabetes complication.

Dr. Gregg cautioned, however, that the number of Americans with diabetes continued to rise. “We have to find a way to replicate these successes, to transfer that knowledge into preventing the disease to begin with,” he said.

The declines in rates of complications began around 1995 and continued

gradually, but steadily, over time, the data show. What drove the outcomes varied by the complication, Dr. Gregg said. Improved blood sugar control has made a difference, especially in reducing the rate of amputations and end-stage kidney disease. Declines in smoking and the rising use of statins to lower cholesterol and of other medications to control blood pressure contributed to the declines in heart attacks and strokes.

Researchers noted that heart attacks had declined substantially for the general population as well, where the same factors were at work. But while people without diabetes saw a 31 percent decline since 1990, those with it experienced a 68 percent drop.

Dr. Joel Zonszein, director of the Clinical Diabetes Center at the Montefiore Medical Center in the Bronx, attributed much of the improvement to a change in the approach to treatment. Doctors are putting more emphasis on controlling blood pressure and cholesterol — major risk factors for heart disease and strokes — than on lowering blood sugar, he said.

Because cardiovascular disease is what kills most people with diabetes, this shifting priority seems to have paid off. Dr. Zonszein said that certain blood pressure drugs, not available in the past, help protect the kidneys and had helped prevent or at least postpone kidney failure for many patients.

And doctors are paying closer attention. Dr. Narayan ticked off questions about diabetes patients that are now routine in many health care settings: “What proportion of your patients turn up for regular appointments? What proportion of your patients has at least one eye exam a year? What proportion of your patients has good control of glucose, blood pressure and lipids?”

Despite the progress, experts said there were still too many people with severe complications, often because they do not take care of the disease. People with Type 2 need to check their blood sugar regularly, take medications and watch their diet.

“Really, we have two worlds,” said Dr. Zonszein, explaining that educated patients tend to manage diabetes well. “Then we have the other world,” which is far more likely to ignore diabetes until its devastating complications set in, “maybe because of social issues, language issues, access to health care, economic issues.”

Dr. Nathan said that though the study shows that the average person with diabetes faces far lower risks for complications, the broader society still confronts a growing epidemic.

“There’s nothing else in the world that’s increasing as fast as the rate of diabetes,” he said. “As a society, we are still facing an enormous burden.”

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