Diabetes continues its relentless rise

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(HealthDay)—Two new studies on diabetes deliver good and bad news, but the overall message is that the blood sugar disease remains a formidable public health burden.

The first study looked at the incidence of type 1 and type 2 diabetes in U.S. children, and uncovered this troubling trend: From 2002 to 2012, the rates for both types of diabetes increased, especially among racial and ethnic minorities.

But a bit of hope was offered up in the second study: Swedish researchers reported a drop in the incidence of heart disease and stroke in adults with both types of diabetes.

"These studies highlight our concerns about the increasing prevalence of diabetes. Every 23 seconds, another person is diagnosed with diabetes [in the United States]," said Dr. William Cefalu, chief scientific, medical and mission officer for the American Diabetes Association (ADA).

Cefalu added that the Swedish study was encouraging and shows that things are "trending in the right direction. Because of research in diabetes, we've been able to improve the lives of millions of people with diabetes around the world, but the disease is still increasing worldwide. We still have a lot of work to do."

In the United States, approximately 29 million people have diabetes, according to the ADA. The vast majority of those have type 2 diabetes. About 1.3 million people have type 1 diabetes.

In people with type 2 diabetes, the body doesn't use insulin properly. This is called insulin resistance. Insulin is a hormone that helps usher sugar from foods into the body's cells to be used as fuel. When someone has type 2 diabetes, this process doesn't work well and blood sugar levels rise. Obesity is the main risk factor for type 2 diabetes, though it's not the only factor involved in the disease.

Type 1 diabetes is an autoimmune disease. The body's immune system mistakenly attacks the insulin-producing cells in the pancreas. This

leaves someone with type 1 diabetes with little to no insulin. To stay alive, someone with type 1 diabetes must replace that insulin through injections.

"The specific genes and environmental/behavioral factors that cause type 2 diabetes are different than those that cause type 1 diabetes," explained Elizabeth Mayer-Davis, the author of the study on diabetes incidence in children.

Mayer-Davis and colleagues found that type 1 diabetes was increasing 1.8 percent a year. The increase was significantly larger for Hispanic children, at 4.2 percent a year. That compared with 1.2 percent for white children, the findings showed.

The factors underlying the increase aren't entirely clear, she said.

Although far fewer children have type 2 diabetes, the disease is increasing faster than type 1. Between 2002 and 2012, the rate of type 2 diabetes increased 4.8 percent a year. The annual increase in type 2 diabetes in black children was 6.3 percent. For Asian/Pacific Islanders, the yearly increase was 8.5 percent, and for Native Americans, it was almost 9 percent, the investigators found.

"The increase in incidence of type 2 diabetes is likely related primarily to the increases in overweight and obesity in youth, although this is not the only reason," said Mayer-Davis. She's a professor of nutrition and medicine at the University of North Carolina, Chapel Hill.

The second study looked at all of the people registered in a Swedish National Database from 1998 through 2012, and followed their health through 2014. The database has nearly 37,000 people with type 1 diabetes and more than 457,000 with type 2 diabetes. These patients were compared to similar people without diabetes (the "control" group).

The researchers saw roughly a 40 percent greater reduction in heart disease and stroke in people with type 1 diabetes compared to the matched controls. In people with type 2 diabetes, there was roughly a 20 percent greater drop in heart disease and stroke compared to the control group, the study showed.

When it came to deaths during the study period, people with type 1 diabetes had similar reductions in the number of deaths compared to controls. People with type 2, however, had smaller reductions in deaths versus the control group, the researchers found.

Even with these improvements, people with either type of diabetes still have much higher overall rates of premature death and heart disease than the control groups, the study authors noted.

"We believe the changes observed in our study most likely reflect a combination of advances in clinical care for patients with diabetes," said study author Dr. Aidin Rawshani. He is from the Institute of Medicine at the University of Gothenberg in Sweden.

"Perhaps the most important is improved management of cardiovascular risk factors," he said. These risk factors include high blood pressure, abnormal cholesterol, signs of early kidney damage and poor blood sugar control. He said treatment with high blood pressure medications and cholesterol-lowering drugs likely contributed to the improvement.

Both studies were published April 13 in the *New England Journal of Medicine*.

More information: Aidin Rawshani, M.D. and Ph.D. student, Sahlgrenska University Hospital and the Institute of Medicine at the University of Gothenberg, Sweden; Elizabeth Mayer-Davis, Ph.D., professor, nutrition and medicine, University of North Carolina, Chapel

Hill; William Cefalu, M.D., chief scientific, medical and mission officer, American Diabetes Association; April 13, 2017, *New England Journal of Medicine*.

Learn more about preventing type 2 diabetes from the U.S. National Institute of Diabetes and Digestive and Kidney Diseases.