

More U.S. kids have type 1 diabetes, but researchers don't know why

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And study found that more are developing kidney problems as a result of their disease.

(HealthDay)—The number of U.S. kids living with type 1 diabetes has increased by almost 60 percent since 2002, and experts are not sure why.

Using a national database, researchers found that the prevalence of type 1 diabetes stood at just under 1.5 cases per 1,000 children and teenagers in 2002. By 2013, that figure had risen to 2.3 per 1,000.

The study, published online Dec. 17 in the journal *Diabetes Care*, adds to evidence of a global—and puzzling—rise in type 1 diabetes.

Unlike type 2 diabetes—a common adulthood disease—type 1 diabetes has nothing to do with obesity. It's an autoimmune disease in which the immune system mistakenly attacks the cells that produce insulin, a

hormone that regulates blood sugar.

And it's usually diagnosed in childhood.

People with type 1 diabetes have to take daily insulin injections, or have an insulin pump implanted, to survive.

It's a difficult disease to manage, and it carries long-term complications like nerve damage, kidney failure and heart disease, said Dr. Steven Griffen, vice president of translational development for the JDRF—a nonprofit that supports research into type 1 diabetes.

The fact that type 1 is growing more common means that it's increasingly important to understand its causes, he said.

Griffen, who was not involved in the new study, said the rising prevalence among U.S. kids is worrisome, but not surprising. "We're seeing this trend globally. Studies in other countries have had similar results," he said.

"As to the question of why," Griffen added, "we don't have an answer."

There are theories, he said, and researchers are digging into them.

One theory, according to Griffen, centers on the gut "microbiome"—the huge collection of bacteria that normally dwells in the digestive system. Some research has hinted that a lack of diversity in those gut bacteria may trigger type 1 diabetes in children with a genetic susceptibility.

It's thought that certain trappings of modern life—antibiotic use, processed foods and even C-section births—may be diminishing the diversity of gut microbiomes.

Researchers are also studying other potential explanations, Griffen said—such as whether certain viral infections can set off the abnormal immune response that causes type 1 diabetes.

But for now, the reasons for the rising prevalence remain unclear, agreed Susan Jick, one of the researchers who worked on the latest study.

Her team did find a positive trend when it came to type 2 diabetes: After an initial rise, the number of children with the disease declined during the latter part of the study period.

In 2006, the prevalence of type 2 diabetes was 0.56 cases for every 1,000 kids younger than 18. By 2013, that had dipped to 0.49 per 1,000, the findings showed.

That's good news, said Jick, a professor of epidemiology at Boston University School of Public Health. "We hope it continues to go down," she added.

The decline in type 2 diabetes is more readily explainable, according to the researchers. During the study period, the obesity rate among U.S. preschoolers fell, which may partly account for the dip in diabetes in more recent years.

Jick's team based the findings on an insurance claims database with information on roughly 30 million Americans. Between 2002 and 2013, over 96,000 children younger than 18 were diagnosed with either type 1 or type 2 diabetes.

Over those years, the number of children with type 1 diabetes rose by 57 percent.

There were also almost 3,200 kids diagnosed with diabetes-related

kidney damage. And like type 1 diabetes, the prevalence grew over time, Jick said.

In 2002, just over 1 percent of children with diabetes had some degree of kidney dysfunction; by 2013, over 3 percent were affected, the investigators found.

Griffen said he suspects that increased detection explains a large share of that increase, however: Doctors may now be screening for [kidney dysfunction](#) more often, he suggested.

Jick said she thinks the findings highlight the importance of monitoring kidney function in patients with diabetes, even children.

According to the American Diabetes Association, some warning signs of type 1 [diabetes](#) include unexplained weight loss, excessive thirst, frequent urination and extreme fatigue.

More information: The American Diabetes Association has a primer on [type 1 diabetes](#).

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