

Study recommends extra caution in screening for depression in teens with diabetes

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The scoring results of widely used depression-screening tools should be carefully adjusted to better detect the condition in teenagers with type 1 diabetes mellitus (T1D), according to a new study published in the

journal *Diabetes Care*.

The study is the first to widely assess the accuracy of such screeners, compared against diagnostic interviews, for this population. The study was led by investigators from Nemours Children's Health, Jacksonville and Primary Children's Hospital. Data was collected while both investigators were at the University of Kansas Medical Center, and in collaboration with Children's Mercy Kansas City.

Previous studies show that adolescents with T1D are more likely to experience depression than their peers without diabetes. Moreover, researchers said, depression can inhibit proper diabetes self-management and lead to inadequate blood glucose monitoring, impaired glycemic levels, and more frequent hospitalizations. For these reasons, national and international guidelines recommend ongoing [depression screening](#) for all teens with diabetes.

"Depression [screening](#) is crucial for youth with type 1 diabetes, since [depression treatment](#) is likely to keep them healthier now and in the long run," said the paper's lead author, Arwen M. Marker, Ph.D., a pediatric psychology fellow at Primary Children's Hospital of Salt Lake City. "We need to know which screening tools perform best and how best to use them in this population, so we do not fail to identify depressed kids and get them the support they need."

The research team recruited 100 adolescents (ages 12 to 17) with T1D and met with each for a clinical interview, considered the gold standard for diagnosing depression. Participants were also asked to complete five commonly used depression screening tools, each of which took one to three minutes to complete. Researchers then compared each screening tool's results against the interview findings. They said they were surprised to find that in most of the screeners, they needed to decrease the standard diagnostic cutoff scores in order to optimize their sensitivity

for adolescents with T1D.

"We thought we might need to increase the cutoff scores for accuracy with this population, thinking that symptoms common to diabetes and depression would inflate the number of depression diagnoses, suggesting more were depressed when actually diabetes symptoms were the cause," said Marker. "However, we generally found the opposite—we needed to lower cutoff scores to most accurately identify youth with depressive symptoms."

Most of the screening tools assessed in the study were designed for adults. None were created specifically for individuals with T1D, and none had been previously confirmed to accurately detect depression in adolescents. Researchers recommended that diabetes care providers use tools shown to have the greatest accuracy in this population, which they identified as the CDI-2 Short, PHQ-9A, and SMFQ.

"Without the right sensitivity cutoffs, even great screening tools will miss some teens with depression, meaning they will not receive [mental health services](#) and could continue to experience [depression](#)," said co-author Susana Patton, Ph.D., ABPP, CDE, principal research scientist at Nemours Children's Health, Jacksonville. "For teens with T1D, that also means some will have more trouble managing their diabetes."

Type 1 [diabetes](#) is an autoimmune disease, in which the body's immune system mistakenly destroys insulin-producing cells in the pancreas. Its causes are not fully understood, and currently no cure exists. An estimated 244,000 children and adolescents in the U.S. have this condition, which can cause serious health problems at an early age or later in life.

For future research, the authors note that the adjusted cutoff scores identified in this study must be confirmed by other studies before they

can be applied broadly.

More information: Arwen M. Marker et al, Adjusted Cutoff Scores Increase Sensitivity of Depression Screening Measures in Adolescents With Type 1 Diabetes, *Diabetes Care* (2022). [DOI: 10.2337/dc22-0275](https://doi.org/10.2337/dc22-0275)

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