Study Recommends Extra Caution in Screening for Depression in Teens with Diabetes

First Analysis of Screening Tools Finds Standard Scoring Misses Some Cases of Depression in This Group

> *"Without the right sensitivity cut-offs, 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, PhD, 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."*

JACKSONVILLE, Fla. (September 14, 2022) – 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 American Diabetes Association 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, which funded the project, 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, PhD, 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 cut-off scores in order to optimize their sensitivity for adolescents with T1D.

"We thought we might need to *increase* the cut-off 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 cut-off 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 cut-offs, 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, PhD, 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 cut-off scores identified in this study must be confirmed by other studies before they can be applied broadly.

###

About Nemours Children's Health
Nemours Children's Health is one of the nation's largest multistate pediatric health systems, including two free-standing children's hospitals and a network of more than 70 primary and specialty care practices. Nemours Children's seeks to transform the health of children by adopting a holistic health model that utilizes innovative, safe, and high-quality care, while also caring for the health of the whole child beyond medicine. Nemours Children's also powers the world's most-visited website for information on the health of children and teens, KidsHealth.org.

The Nemours Foundation, established through the legacy and philanthropy of Alfred I. duPont, provides pediatric clinical care, research, education, advocacy, and prevention programs to the children, families, and communities it serves.

For further information: Contact: Leah Goodwyne, (904) 676-2229, leah.goodwyne@nemours.org

---

https://nemours.mediaroom.com/news-releases?item=122983