

'Diabetes distress' can increase risk of mental health problems among young people living with type 1 diabetes

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Children diagnosed with type 1 diabetes are at significantly higher risk

of a number of mental health issues, including mood and anxiety disorders, a study from a team in the UK and the Czech Republic has found.

The findings highlight the urgent need for monitoring and support for the mental health of young people diagnosed with type 1 diabetes.

The work appears in *Nature Mental Health*.

According to the charity JDRF, there are 8.7 million people living with type 1 diabetes around the world, including over 400,000 people in the UK. It is a chronic, life-threatening condition, usually diagnosed in childhood, that has a life-long impact.

Currently, people with type 1 diabetes rely on a routine of finger-prick blood tests and [insulin injections](#) or infusions, because their pancreas no longer produces insulin itself, although recent developments in artificial pancreas technology are helping transform this care.

Previous studies have shown potential links between childhood-onset type 1 diabetes and a number of mental health disorders in adulthood. However, it is not clear whether these links can be best explained by the impacts of living with the condition and its treatment, or whether underlying common biological mechanisms may be implicated; for example, the impact of unstable blood sugar levels on the developing adolescent brain.

To help answer this question, a team of researchers turned to data from over 4,500 children with type 1 diabetes on a national register in the Czech Republic and from large-scale European DNA studies.

From the national register data, the researchers found that children diagnosed with type 1 diabetes—compared to children without the

condition—were over twice as likely to develop a mood disorder and more than 50% more likely to develop an anxiety disorder. They were also more than four times more likely to develop behavioral syndromes, including eating and sleep disorders.

Conversely, children with type 1 diabetes were at a much lower risk of developing psychotic disorders, such as schizophrenia—almost half the risk compared to their peers.

The findings are consistent with the results from two other national register studies in Sweden and in Denmark, suggesting that the results would likely apply to other countries, too, including the UK.

The team used a statistical technique known as Mendelian Randomization to probe causal links between type 1 diabetes and these various psychiatric disorders, but found little evidence in support of a common underlying biological mechanism.

Tomáš Formánek, a Ph.D. student at the University of Cambridge and the National Institute of Mental Health, Klecany, Czech Republic, said, "Although we found a concerning increase in the risk of mental health problems among people living with type 1 diabetes, our study—and others before it—suggest this is unlikely to be the result of common biological mechanisms. This emphasizes the importance of prevention and sustained attention to the mental health needs of children and young people with type 1 diabetes."

The researchers say that mental health problems in later life may be a result of children with type 1 diabetes being forced to make significant changes to their lives, with a constant focus on monitoring their food intake and a need to check blood sugar levels and administer insulin injections. This often leaves these children feeling excluded from social events and singled out by peers, teachers and even family members.

Dr. Benjamin Perry from the Department of Psychiatry, University of Cambridge, said, "We know that people diagnosed with type 1 diabetes can experience 'diabetes distress.' This can include extreme frustration with blood sugars and feelings of isolation and can lead to burnout, hopelessness, and a feeling of lack of control. It's little wonder, then, that they are at risk of compounding mental health problems, spanning into their adult lives."

Professor Peter Jones, also from the Department of Psychiatry, University of Cambridge, added, "Our findings emphasize the urgent need to support children diagnosed with type 1 [diabetes](#), look out for signs of [mental health problems](#) and offer timely, expert help. That way, it may be possible to help these [children](#) early, before these problems fully take root."

More information: Formánek, T et al. Childhood-Onset Type 1 Diabetes and Subsequent Adult Psychiatric Disorders: A Nationwide Cohort and Genome-wide Mendelian Randomization Study, *Nature Mental Health* (2024). [DOI: 10.1038/s44220-024-00280-8](https://doi.org/10.1038/s44220-024-00280-8)

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