

Food insecurity doubles rate of severe hypoglycemia in adults with diabetes, research shows

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Research presented at the Annual Meeting of the European Association for the Study of Diabetes ([EASD](#)) in Hamburg, Germany (2–6 Oct) has

found that severe hypoglycemia is more than twice as common among adults with diabetes who struggle to afford food.

Severe hypoglycemia occurs when a person's blood sugar levels fall to such an extent that it can cause loss of consciousness, seizures, coma and, in rare cases, death.

Severe hypoglycemia is rare in people with [diabetes](#) unless they are taking insulin or secretagogues—two commonly prescribed classes of diabetes drug. When people are taking insulin or secretagogues, [severe hypoglycemia](#) occurs primarily as a side-effect of their medication.

The analysis of data from the US revealed that severe hypoglycemia was 2.2 times more frequent in people who experienced [food insecurity](#).

Food insecurity is known to influence health but there has been little real-world population-based research into its effect on rates of severe hypoglycemia.

In the first investigation of its kind, Dr. Alexandria Ratzki-Leewing, of Western University, London, Ontario, Canada, and colleagues conducted a secondary analysis of data from the US-wide iNPHORM study: a 12-month prospective panel survey of real-world hypoglycemia risk.

Their analysis comprised 1,001 adults (49.6% male) with either type 1 diabetes (T1D, 16.1%) or type 2 diabetes (T2D) who were treated, for at least one year, with insulin and/or secretagogues. Participants were on average 51 years old and had a median diabetes duration of 12 years.

Questionnaires at baseline (spring 2020) and over 12 consecutive months captured data on respondents' characteristics and frequency of severe hypoglycemia. Based on the American Diabetes Association Standards of Care guidelines, severe hypoglycemia was defined as a Level 3 low

blood glucose concentration, regardless of blood glucose value, causing altered mental and/or physical status requiring professional or non-professional aid for recovery.

At baseline, participants were asked this screening question, "Within the past 12 months, did you ever cut the size of your meals or skip meals because there was not enough food?" Those who answered "yes" were classified as having experienced food insecurity.

Around one in five of the participants said they'd experienced food insecurity; rates were similar in T1D (18.6%) and T2D (20.4%). Among these individuals, over half experienced at least one Level 3 event in the past year.

The authors performed multi-variable regression to determine if food insecurity caused higher rates of severe hypoglycemia. Their analysis revealed that, after adjusting for potential confounders (age, annual gross household income, insurance coverage, living arrangements and diabetes type), those who had experienced food insecurity had just over twice as many severe hypoglycemia events during the year studied as those not exposed to food insecurity.

Dr. Ratzki-Leewing said, "This is the first community-based, prospective study to look at the impact of food insecurity on rates of Level 3 (severe) hypoglycemia in adults in the US with diabetes on insulin and/or secretagogues.

"We showed that food insecurity is alarmingly common across this population and that it more than doubles the rate of severe hypoglycemia.

"We recommend clinicians use our screening question and exercise vigilance when managing individuals with food insecurity prescribed

insulin or secretagogues. Public health strategies to address [food insecurity](#) are also vital to prevent severe hypoglycemia and its profound consequences.

"In the short term, severe hypoglycemia can cause dangerous symptoms (such as seizures and coma) and accidents. It can also lead to impaired awareness of hypoglycemia (the diminished ability to perceive falling [blood glucose levels](#)), which in turn, can increase the risk of future hypoglycemia events.

"Long-term, severe hypoglycemia has been associated with nerve and heart damage, as well as premature mortality. These effects have substantial direct and indirect economic costs.

"Ultimately, our study uncovers a key opportunity to reduce the burden of diabetes-related severe [hypoglycemia](#), while improving overall health. The results are timely given the rising cost of living, not only in the US but also globally."

Provided by Diabetologia

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