

Food insecurity doubles rate of severe hypoglycemia in diabetic adults, research suggests

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Scientists have called for more research into these issues to better understand the population health impact of food insecurity. Credit: Kampus Production/Pexels

Adults living with diabetes who can't afford to put food on the table are at more than twice the risk of severe hypoglycemia.

In the first investigation of its kind, Alexandria Ratzki-Leewing,

professor in the Department of Epidemiology and Biostatistics and colleagues at Schulich School of Medicine & Dentistry revealed that severe [hypoglycemia](#) was 2.3 times as frequent in people taking insulin and/or secretagogues who reduced or skipped meals altogether compared to those not exposed to food insecurity. Secretagogues are medicines that increase insulin secretion from the pancreas.

The results stem from the U.S.–wide [iNPHORM study](#) and were presented last week by Ratzki-Leewing at the [annual meeting](#) of the European Association for the Study of Diabetes (EASD) in Hamburg, Germany.

Severe hypoglycemia occurs when a person's blood sugar levels fall to such an extent that loss of consciousness, seizures, coma and, in rare cases, death, can occur. It is defined by the American Diabetes Association as a level 3 low blood glucose concentration, requiring professional or non-professional aid for recovery.

While food insecurity is known to impact health, its effect on level 3 hypoglycemia is unquantified in the U.S., said Ratzki-Leewing. To gauge the impact of food insecurity, the team adapted a question from the National Health and Nutrition Examination Survey: Within the past 12 months, did you ever cut the size of your meals or skip meals because there was not enough money for food? Data was collected using surveys distributed from spring 2020 and over 12 consecutive months. All participants in the analysis were taking insulin and/or secretagogues; they were on average 51 years old and had a median diabetes duration of 12 years.

"We have shown that food insecurity is prevalent across this population in the U.S. and it more than doubles the rate of severe hypoglycemia," she said. "Even in Canada, about one in five people experience food insecurity. The data we have from the United States could translate here

as well, but more research is needed."

With the continued rise in the cost of living, these results are alarming for both the short- and [long-term health](#) of those with diabetes, said Ratzki-Leewing.

"Not only does severe hypoglycemia cause dangerous acute symptoms, but it can also set the stage for long-term neurologic and cardiac harm, leading to premature death. Events are further linked to reduced emotional and social well-being."

The impact of the pandemic on the results is not clear, said Ratzki-Leewing, "but at the very least, we know that food insecurity can have a lasting effect on [severe hypoglycemia](#) rates even in the aftermath of the pandemic."

Ratzki-Leewing called for more research into these issues to better understand the population health impact of [food insecurity](#).

"Ultimately, such insight is essential to providing equitable care, certainly in the context of hypoglycemia and [diabetes](#), but more broadly as well."

Provided by University of Western Ontario

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