

Continuous glucose monitors warn of low blood sugar threat

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Continuous glucose monitors (CGM) can protect individuals who have had type 1 diabetes for years and are at risk of experiencing dangerously low blood sugar by increasing their awareness of the symptoms, according to a study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism*.

Episodes of low blood sugar, known as hypoglycemia, are a major barrier to achieving glycemic control for people with diabetes.

The study's publication comes as the Endocrine Society is developing a multi-year, multi-stakeholder initiative to improve understanding of hypoglycemia and reduce associated costs by implementing strategies to improve prevention and surveillance.

Severe hypoglycemia can cause seizures, loss of consciousness and death. Hypoglycemia linked to the use of insulin was responsible for an [estimated \\$600 million in emergency room visits between 2007 and 2011](#).

"In individuals who have repeatedly experienced hypoglycemia, the body blunts awareness of symptoms warning of impending episodes," said the study's first author, Michael R. Rickels, M.D., M.S., of the Perelman School of Medicine at the University of Pennsylvania in Philadelphia, Pa. "Wearing a continuous [glucose](#) monitor that flags falling glucose levels and has built-in alarms raises recognition of the threat."

Eleven individuals who had been diagnosed with type 1 diabetes for at least 10 years and had impaired awareness of hypoglycemia received CGMs to monitor their blood sugar levels during an 18-month period. The researchers found the participants became more aware of hypoglycemia events and were less likely to experience severe hypoglycemic episodes after they started using CGMs. However, the body's defense mechanisms against developing [low blood sugar](#) remained impaired. The participants' hemoglobin A1c levels, which track average [blood](#) glucose over time, did not change.

"While the body's own defenses against hypoglycemia did not improve, CGMs filled a valuable need in alerting individuals to oncoming episodes," Rickels said. "In the absence of physiologic defenses against the development of [low blood glucose](#), near-constant use of continuous glucose monitoring may be required to minimize the burden of problematic hypoglycemia in patients with long-standing type 1 diabetes."

The Endocrine Society and its 18 partners in the Hypoglycemia Quality Collaborative identified reducing and preventing the condition as a high priority.

The Society's new hypoglycemia quality initiative aims to improve outcomes in individuals with type 2 diabetes. The project's goals include decreasing the frequency and severity of hypoglycemia episodes, identifying patients who are at high risk in a timely manner, and supporting appropriate clinical interventions that can be administered in doctors' offices and clinics, avoiding the need for hospitalization. The effort brings together stakeholders from industry, nonprofit organizations and patient groups.

"Hypoglycemia is a potential problem for all patients with diabetes, but it is more often an unrecognized complication for [individuals](#) with type 2

[diabetes](#)," said Robert W. Lash, M.D., the Endocrine Society's incoming Chief Professional & Clinical Affairs Officer. "We are working to find effective ways to minimize the occurrence of this dangerous and costly problem. Our new initiative will play a crucial role in identifying those at risk and reducing the incidence of [hypoglycemia](#)."

More information: "Continuous Glucose Monitoring for Hypoglycemia Avoidance and Glucose Counterregulation in Long Standing Type 1 Diabetes," *Journal of Clinical Endocrinology & Metabolism* (2017). [DOI: 10.1210/jc.2017-01516](https://doi.org/10.1210/jc.2017-01516)

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