

# Extreme blood sugar swings in people with type 2 diabetes may increase heart disease risk

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In patients with type 2 diabetes, big swings in blood sugar levels between doctors' visits are associated with an increased risk of heart disease.

The study, published in the journal *Diabetes, Obesity & Metabolism*, looked at more than 29,000 patients with type 2 [diabetes](#) over a two-year period. Patients who already had [heart disease](#) were excluded.

The American Diabetes Association recommends adults with diabetes maintain an A1c, the average blood sugar level over the past two to three months, of less than 7 percent to reduce complications from diabetes, such as heart disease. However, studies—including this one—have shown that wide swings in [blood sugar levels](#) may be a better predictor of diabetic complications than the A1c reading at any single doctor's office visit.

"The underlying mechanism for the relationship between wide variations in blood sugar levels

between doctor's appointments and high risk of heart disease in patients with type 2 diabetes is unclear," said Gang Hu, MD, Ph.D., Associate Professor and Director, Chronic Disease Epidemiology Lab at Pennington Biomedical Research Center. "It's possible that episodes of severely [low blood sugar](#) may be the connection."

Research has shown that wide variations in blood sugar levels are associated with poor health outcomes and even death. A 2017 Johns Hopkins study found that one-third of people with diabetes hospitalized for a severe low blood sugar episode died within three years of the incident.

"We recommend that patients and their doctors implement therapies that can reduce wide swings in blood sugar levels and the associated episodes of severe low blood sugar," Dr. Hu said. "Our findings suggest that measuring the swings in blood hemoglobin A1c levels over a specific time—six months to a year, for example—could serve as a supplemental [blood](#) sugar target," he added.

**More information:** Yun Shen et al. Association between visit-to-visit HbA1c variability and the risk of cardiovascular disease in patients with type 2 diabetes, *Diabetes, Obesity and Metabolism* (2020). [DOI: 10.1111/dom.14201](https://doi.org/10.1111/dom.14201)

Provided by Pennington Biomedical Research Center

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