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1-hour blood glucose level predicts type 2 diabetes development

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Future type 2 diabetes and diabetes complications and mortality may be better predicted with elevated 1-hour blood glucose levels compared with 2-hour blood glucose levels, according to study findings published in *Diabetes Care.*

"A 1-hour blood glucose measurement during an oral glucose tolerance test appears to be a significant predictor for the development of type 2 diabetes," **Michael Bergman, MD, FACP,** clinical professor of medicine at NYU School of Medicine, director of the NYU Diabetes Prevention Program and co-author of this study, told Endocrine Today. "The measurement is also more sensitive than the 2-hour value for identifying high-risk individuals and can predict as well the risk for diabetes complications and mortality. Therefore, the 1-hour test could replace the traditional 2-hour test, making it more acceptable in clinical practice."

Bergman, **Manan Pareek, MD, PhD,** of Brigham and Women's Hospital Heart and Vascular Center at Harvard Medical School, and colleagues evaluated data from the Malmö Preventive Project (1974-1992) in 4,867 men (median age, 48 years; mean BMI, 24.8 kg/m^2) to determine the effectiveness of 1-hour blood glucose measurements vs. 2-hour blood glucose measurements for predicting incident type 2 diabetes, vascular complications and mortality. Participants were followed for up to 39 years.

Manan Pareek

Among the cohort, 13% developed type 2 diabetes during follow-up.

The discriminative ability of an elevated 1-hour blood glucose level was significantly greater than impaired glucose tolerance based on 2-hour blood glucose level at 12 years ($P < .001$) and

39 years ($P < .001$). The risk for type 2 diabetes was greater with elevated 1-hour glucose tolerance at 12 years and 39 years than with impaired fasting glucose or IGT.

The risks for mortality, myocardial infarction, fatal ischemic heart disease, retinopathy and peripheral vascular complications were greater in participants with elevated 1-hour blood glucose levels than those with elevated 2-hour blood glucose levels.

“It is well-known that subjects with traditionally defined impaired glucose tolerance benefit from intensive lifestyle intervention,” Pareek told *Endocrine Today.* “Given the results of our study, it definitely seems possible that targeting subjects with an abnormal 1-hour blood glucose level could halt the progression to manifest diabetes in an even larger number of individuals. Thus, the most desirable next step would be a randomized study of intensive lifestyle therapy vs. control in patients enrolled on the basis of an abnormal 1-hour blood glucose level.” – *by Amber Cox*

For more information:
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Disclosures: Bergman and Pareek report no relevant financial disclosures. Please see the study for all other authors’ relevant financial disclosures.