

'Prediabetes' diagnosis less useful in older patients

8 February 2021



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Older adults who are classified as having "prediabetes" due to moderately elevated measures of blood sugar usually don't go on to develop full-blown diabetes, according to a study led by researchers at Johns Hopkins Bloomberg School of Public Health.

Doctors still consider prediabetes a useful indicator of future diabetes risk in young and middle-aged adults. However, the study, which followed nearly 3,500 [older adults](#), of median age 76, for about six and a half years, suggests that prediabetes is not a useful marker of diabetes risk in people of more advanced age.

The results were published February 8 in *JAMA Internal Medicine*.

"Our results suggest that for older adults with [blood sugar levels](#) in the prediabetes range, few will actually develop diabetes," says study senior author Elizabeth Selvin, Ph.D., professor in the Department of Epidemiology at the Bloomberg School. "The category of prediabetes doesn't seem to be helping us identify high-risk people. Doctors

instead should focus on healthy lifestyle changes and important disease risk factors such as smoking, [high blood pressure](#), and high cholesterol."

Type 2 diabetes leads to a chronically excess [blood](#) level of glucose, which stresses organs including the kidneys, weakens the immune system, and damages blood vessels, promoting heart disease and stroke among other conditions. The prevalence of diagnosed type 2 diabetes in the United States has gone from less than one percent in the 1950s to more than 7 percent today—and researchers believe that the actual figure now, including undiagnosed diabetes, is over 12 percent. This sharp increase is due to the aging U.S. population and increased rates of overweight and obesity.

Doctors have used the concept of prediabetes—involving blood glucose levels that are higher than normal but not yet in the diabetic range—as an indicator of elevated diabetes risk in younger and middle-aged people. However, the utility of the concept in older adults—especially those 70 and older—has been less clear.

"It's very common for older adults to have at least mildly elevated blood glucose levels, but how likely they are to progress to diabetes has been an unresolved question," Selvin says.

To get a better picture of how older adults with prediabetes fare, Selvin and colleagues turned to the Atherosclerosis Risk in Communities Study. This large epidemiological cohort project, funded by the U.S. National Heart, Lung, and Blood Institute and including both Black and white participants, has been running at four U.S. medical centers, including Johns Hopkins, since 1987. For their prediabetes analysis, the researchers selected 3,412 ARIC study participants who had attended a follow-up visit during 2011-13—a time when the participants were between 71 and 90 years old—and did not have any history of diabetes. The

researchers then looked at how measures of the participants' [blood glucose levels](#) had changed at the next follow-up visit during 2016-17.

As expected, the researchers found that "prediabetes," defined according to two different blood-test measures, was very common among the participants at the 2011-13 visit. Those with prediabetes, defined by moderately high blood levels of glucose following overnight fasting (the impaired fasting glucose test, or IFG), represented 59 percent of the initial sample, and those with prediabetes defined with a different blood test for glycated hemoglobin (HbA1c), represented 44 percent of the initial sample.

However, the results showed that only small numbers of the participants who had prediabetes in 2011-13 had developed diabetes by the time of the 2016-17 visit—8 percent of the IFG-defined prediabetics, and 9 percent of the HbA1c-defined prediabetics.

By contrast, 44 percent of the IFG group and 13 percent of the HbA1c group had improved enough by the 2016-17 visit that their test results were back in the normal range. Moreover, 16 and 19 percent of these two groups had died of other causes by the 2016-17 visit.

The results show that older adults with prediabetes, over intervals like the one in the study, are more likely to have lower blood sugar levels—or to die for other reasons—than to progress to [diabetes](#).

"It appears that in older adults, 'prediabetes' is just not a robust diagnosis," Selvin says.

"Our findings support a focus on lifestyle improvements, including exercise and diet when feasible and safe, for older adults with prediabetes," says Mary Rooney, Ph.D., a postdoctoral fellow at the Bloomberg School and the paper's first author. "This approach has broad benefits for patients."

Selvin and her colleagues recommend that for older adults, physicians should focus their screening efforts on risk factors, such as hypertension, that are more useful in predicting illness and mortality in this population.

More information: Mary R. Rooney, PhD et al, Risk of Progression to Diabetes Among Older Adults With Prediabetes, *JAMA Intern Med*. Published online February 8, 2021. [DOI: 10.1001/jamainternmed.2020.8774](#)

Provided by Johns Hopkins University Bloomberg School of Public Health

APA citation: 'Prediabetes' diagnosis less useful in older patients (2021, February 8) retrieved 11 April 2021 from <https://medicalxpress.com/news/2021-02-prediabetes-diagnosis-older-patients.html>

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