

Glucose challenge test is accurate and economical for diabetes and prediabetes screening

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The results of the study, "Glucose challenge test screening for prediabetes and undiagnosed diabetes" will be published online and in print in the journal *Diabetologia*.

"Widespread use of the glucose challenge test (GCT) to screen Americans for prediabetes and diabetes could provide a major opportunity to improve the health of more than 40 million people," said lead study author Lawrence S. Phillips, MD, Emory University School of Medicine Professor of Medicine, Division of Endocrinology.

The study screened 1,573 volunteer participants who had never been diagnosed with diabetes. At a first visit, at different times of the day and without restriction of meals, participants were given a 50-gram glucose drink. Glucose was measured both before the drink (random glucose)

and an hour after the drink (GCT glucose).

At a follow-up visit held in the morning after an overnight fast, participants had measurement of hemoglobin A1c (a standard test used to monitor diabetes), and a 75-gram oral glucose tolerance test (OGTT). The OGTT is the "gold standard" for diagnosing diabetes and prediabetes.

After screening, researchers found that 4.6 percent of the participants had previously unrecognized diabetes, and 18.7 percent had prediabetes.

The GCT was the most accurate screening test for these problems, significantly better than the random glucose or A1c tests. Since the good performance of the GCT was unaffected by the time of day, or times after meals, the GCT could be performed during a routine office visit. If a patient's GCT glucose level is low, he/she wouldn't need to be screened again for another two or three years, but if the GCT glucose level is high, patients would need a confirmatory oral glucose tolerance test.

This approach is similar to screening women for diabetes during pregnancy. GCT screening is almost universal for women in their sixth month of pregnancy.

The GCT provided consistent results for a diverse group of patients - old and young, normal weight and overweight, men and women, with and without a family history of diabetes, etc. The GCT also appeared to be less expensive than other screening strategies.

Early diagnosis is a benefit both for people who have diabetes or prediabetes, and for their health care teams. Regular glucose challenge test screening (GCT first, then a follow-up OGTT if the GCT glucose is high) would be a way to assure early diagnosis, according to Phillips and team.

"Glucose challenge test screening could help improve disease management by permitting early initiation of therapy aimed at preventing or delaying the development of diabetes and its complications," says Phillips.

Diabetes is a disease in which the body does not produce or properly use insulin. Insulin is a hormone that is needed to convert sugar, starches and other food into energy needed for daily life.

According to the American Diabetes Association, 23.6 million U.S. children and adults, or 7.8 percent of the population, have diabetes. While an estimated 17.9 million have been diagnosed with diabetes, 5.7 million people are unaware that they have the disease.

Pre-diabetes is a condition that occurs when a person's blood [glucose](#) levels are higher than normal but not high enough for a diagnosis of type 2 diabetes. There are 57 million Americans who have pre-diabetes, in addition to the 23.6 million with diabetes.

Source: Emory University ([news](#) : [web](#))

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