

# 'Pre-diabetics' face heightened risk of heart disease

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The study, published in the *Journal of Clinical Endocrinology & Metabolism*, was led by Jill P. Crandall, M.D., associate professor of clinical medicine and director of the Diabetes Clinical Trials Unit at Einstein.

Diabetes becomes increasingly common with age. An estimated 37 million Americans over the age of 65 have diabetes, almost one-quarter of that population. Another 20 to 30 percent of seniors, an estimated 7.5 to 11.1 million, are not clinically diabetic but have impaired glucose tolerance, which is considered a form of "pre-diabetes."

"In most cases, this mild form of high blood glucose causes no symptoms and is often overlooked by both doctors and patients, but studies have shown that it may be associated with increased risk of heart disease," says Dr. Crandall. "The purpose of this study was to explore the cardiovascular risk profile of older adults with pre-diabetes."

The study looked at 58 older adults with an average age of 71, half with normal glucose tolerance and half with post-challenge hyperglycemia (PCH). PCH is characterized by a temporary spike in blood glucose levels that occurs immediately after a meal. Various measures were taken before and after study participants consumed a standard high carbohydrate meal.

The researchers found that the adults with PCH not only had higher glucose and insulin levels after the meal, but also higher levels of

triglycerides (a type of blood fat considered an independent risk factor for cardiovascular disease). They also had higher levels of a protein that promotes blood clotting, and more inflammation of blood vessels, compared to controls. In addition, a test of blood vessel function after the meal showed impairment only in the PCH group. Studies show that increases in each of these measures raise one's risk for heart disease.

Routine glucose screening of the elderly, using the standard oral glucose tolerance test (OGTT), could be used to identify these high-risk individuals, the researchers note. The OGTT measures the body's ability to use glucose, the body's main source of energy. The test begins with a measure of one's fasting blood glucose level, providing a baseline for comparing other glucose values. The patient then drinks a sweet liquid containing a specific amount of glucose. Blood samples are collected at several intervals over the next two or three hours.

Despite the results of this study, it has not been established whether treatment aimed at reducing mild hyperglycemia will lower their risk for heart disease. "Consequently, other interventions designed to reduce the risk of cardiovascular disease, including the use of statins and aspirin, should be strongly considered for older adults with PCH," says Dr. Crandall.

More information: The study, "Post-challenge Hyperglycemia in Older Adults is Associated with Increased Cardiovascular Risk Profile," was published in the February 10 online version of the *Journal of Clinical Endocrinology & Metabolism*.

Source: Albert Einstein College of Medicine

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