

Glucose intolerance and insulin resistance link to unfavorable cardiac function, structure

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A study of U.S. Hispanics with diabetes mellitus showed a link between impaired glucose regulation and adverse measures of cardiac function and structure. Researchers at Columbia University's Mailman School of Public Health in collaboration with colleagues from Wake Forest Medical School and six other institutions extended previous knowledge regarding the concept of 'diabetic cardiomyopathy, by also observing that these relationships emerged early and before the full onset of diabetes mellitus. The findings are published online in the journal *Circulation: Cardiovascular Imaging*.

This is the first study to assess the impact of [diabetes mellitus](#) on cardiac geometry using several measures and the first to report the association between insulin resistance and [cardiac structure](#) and function among a U.S. sample population of Hispanic/Latinos not previously studied.

"Our findings inform and extend the clinical concept of diabetic cardiomyopathy—adverse changes in cardiac structure and function commonly observed among patients with diabetes mellitus in two ways," said lead author Ryan Demmer, PhD, assistant professor of Epidemiology at the Mailman School of Public Health. "First, they confirm that diabetes mellitus—both controlled and uncontrolled—is related to the worse measures of cardiac structure and function among Hispanics. Second, they demonstrate that these relationships emerge early in the natural history of diabetogenesis and prior to diabetes

development."

Results were from the ECHO-SOL (Echocardiographic Study of U.S. Latinos) which examined chronic disease risk factors and related morbidity and mortality of 1,818 Hispanic/Latino men (43 percent) and women (57 percent) 45 years of age and older. Participants were recruited from the Bronx, New York; Chicago; Miami; and San Diego.

Glucose intolerance was defined as having a prediabetes hemoglobin of ≥ 5.7 and

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