



Diabetic Cardiomyopathy Can Occur Soon After Diabetes Appears

Dramatic" losses of a key biochemical substance in heart muscle tissue occur in the very earliest stages of diabetes, according to a new study.

Xianlin Han and colleagues did the study as part of a broader medical effort to understand diabetic cardiomyopathy. Heart abnormalities are the relatively common complication of diabetes and account for much of the increased mortality from heart disease in patients with diabetes.

The researchers used a powerful new technology termed "shotgun lipidomics" to show that hearts of diabetic mice lose large amounts of cardiolipin (CL), fatty materials essential for the heart's production of the energy needed for normal contraction. The changes, which involved a loss of CL followed by changes in the remaining CL, occurred as early as 5 days after rats became diabetic through administration of a compound that impairs insulin-producing cells in the pancreas.

Researchers observed the changes in two models of diabetes commonly used to study the two types of human diabetes. The changes happen before the appearance of toxic fatty materials regarded as a hallmark of diabetic cardiomyopathy and might be used as very sensitive biomarkers for the condition, the report indicates.

Article: "Alterations in Myocardial Cardiolipin Content and Composition Occur at the Very Earliest Stages of Diabetes: A Shotgun Lipidomics Study" ACS' Biochemistry, May 29, 2007.

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DID YOU KNOW:

Physical Activity in Postmenopausal Women: The relationship between physical activity dose and fitness is poorly understood. In an examination of this relationship, Church and colleagues randomly assigned sedentary, overweight or obese postmenopausal women to 1 of 3 exercise groups with an energy expenditure of 50%, 100%, or 150% of the National Institutes of Health Consensus Development Panel recommended physical activity dose or to a no-exercise control group to measure any change in aerobic fitness during the 6-month intervention. The investigators found a graded dose-response improvement in fitness across the 3 levels of exercise training that was similar across subgroups based on age, weight, baseline fitness, and ethnicity/race. *JAMA. 2007;297:2053.*

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