

Fat mass and obesity associated genes increased risk of disease in Mexican-Americans

June 10 2008

A study from the University of Southern California suggests people of Mexican-American descent who have genetic variants of fat gene FTO and Arachidonate 5-Lipoxygenase (5-LO) had higher triglyceride and lower HDL levels. The findings were presented as an oral presentation on Sunday, June 8, at the American Diabetes Association 68th Scientific Sessions held in San Francisco.

"Our results confirm the association between FTO and fat mass and indicate that the 5-LO promoter modifies the association between FTO and lipid levels," says Mary Helen Black, candidate for PhD in Statistical Genetics and Genetic Epidemiology, at the Keck School of Medicine of USC and lead author of the study. "The genetic interaction between 5-LO and FTO was significantly associated with an inverse relationship between triglycerides and HDL levels."

The study examined 1286 participants from 165 Mexican American family members of a proband with a history of gestational diabetes and 107 control trios from the BetaGene study. Results suggest subjects who have the FTO rs9939609 A allele and at least one 5-LO short repeat allele had a 26 percent higher triglyceride count and 8 percent lower HDL cholesterol levels compared to participants with the FTO TT genotype. In contrast, among participants with two 5-LO long repeat alleles, those with an FTO A allele showed very little change in triglycerides or HDL compared to those with the FTO TT genotype.

"Understanding the interaction between these genes may help us understand the mechanism by which FTO affects adiposity. Because obesity and dyslipidemia are often precursors to diabetes, these gene interactions may play a vital role in future drug target development, which is another step toward advancing personalized medicine," Black says.

Source: University of Southern California

Citation: Fat mass and obesity associated genes increased risk of disease in Mexican-Americans (2008, June 10) retrieved 20 April 2024 from <https://medicalxpress.com/news/2008-06-fat-mass-obesity-associated-genes.html>

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