

New study identifies genes associated with unhealthy liver function

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A groundbreaking study of nearly 2,300 extremely obese diabetes patients, led by the Translational Genomics Research Institute (TGen), has identified genes associated with unhealthy liver function.

This is believed to be the nation's first large-scale genome-wide association study in overweight patients with diabetes.

Results of the study, done in conjunction with the Geisinger Health System, will be presented at the 64th annual meeting of the American Association for the Study of Liver Diseases Nov. 1-5 at the Walter E. Washington Convention Center in Washington, D.C.

The study—Genome-wide analysis identifies loci associated with total bilirubin levels, steatosis, and mild fibrosis in [nonalcoholic fatty liver disease](#)—looked at how genomic factors affect the development of non-alcoholic fatty liver disease. It was selected for presentation from among a record 3,139 submittals from around the world proposed for what also is known as The Liver Meeting 2013.

"These genetic factors could help us identify patients who are most at risk of developing non-alcoholic forms of fatty-liver disease (NAFLD), and which patients may be more likely to progress to severe forms of NAFLD, such as steatohepatitis (NASH)," said Dr. Johanna DiStefano, the study's principal investigator and lead author. Dr. DiStefano is Director of TGen's Diabetes, Cardiovascular and Metabolic Diseases Division.

NAFLD is the build up of extra fat in [liver cells](#), not caused by alcohol. It is one of the most common causes of [chronic liver disease](#). NASH is [liver inflammation](#) and damage caused by a buildup of fat in the liver, not caused by alcohol.

"Our results showed evidence for new genetic loci that may play a role in the biological mechanisms of NAFLD and NASH," said Dr. Glenn S. Gerhard, a faculty member of the Geisinger Obesity Institute and a co-investigator of the study.

"We discovered genes that may help identify those patients most at risk for the types of [liver disease](#) so severe that they could require transplants," said Dr. Gerhard, Administrative Director for the Institute for Personalized Medicine at Penn State University-Hershey.

Patients included in this study were those with extreme obesity enrolled in a bariatric surgery program.

The study identified evidence for association with markers in the neurocan gene (NCAN) on chromosome 19p12, and rs2501843 on chromosome 1.

Provided by The Translational Genomics Research Institute

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