

# Insulin resistance linked to a human gene variant

23 March 2015

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Insulin resistance is a risk factor for developing both type 2 diabetes and cardiovascular disease. Almost one third of the U.S. population has some degree of insulin resistance, though it is undiagnosed in many of these individuals. Obesity is associated with reduced insulin sensitivity and the development of insulin resistance. However, recent large-scale genetic studies have indicated that insulin resistance is heritable.

A new study in the *Journal of Clinical Investigation* identifies a gene that is strongly associated with the presence of many features of [insulin resistance](#).

Thomas Quertermous and colleagues at Stanford University examined [gene variation](#) in over 5,000 different individuals and determined that the presence of a specific variant of the gene encoding N-acetyltransferase 2 (NAT2) is associated with [risk factors](#) for diabetes and heart disease. Moreover, inhibition of the NAT2 homolog in a mouse model decreased insulin sensitivity. Together, these results provide strong evidence that NAT2 mutations underlie insulin resistance in some individuals.

The study also highlights the advantage of coupling large-scale genome-wide association studies with detailed clinical measurements to provide insight into complex diseases.

**More information:** Identification and validation of N-acetyltransferase 2 as an insulin sensitivity gene, *J Clin Invest.* 2015;125(4):1739–1751. [DOI: 10.1172/JCI74692](#)

Provided by Journal of Clinical Investigation  
APA citation: Insulin resistance linked to a human gene variant (2015, March 23) retrieved 5 May 2021 from <https://medicalxpress.com/news/2015-03-insulin-resistance-linked-human-gene.html>

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