

# Six new genes suggest obesity is in your head, not your gut

December 14 2008

---

Is obesity all in your head? New research suggests that genes that predispose people to obesity act in the brain and that perhaps some people are simply hardwired to overeat.

An international research team co-led by the University of Michigan found six new genes that help explain body mass index and obesity, and all but one of the genes are tied to the brain rather than to metabolic functions, such as fat storage and sugar metabolism.

In addition to the six new genes, the study also confirmed the role of two other genes previously associated with obesity, said co-principal investigator Goncalo Abecasis, an associate professor at the U-M School of Public Health. The study will appear online Dec. 14 in advance of print publication in the journal *Nature Genetics*.

It's significant that five of the six new genes also impact brain function, because the findings suggest people could simply be programmed to overeat, said U-M postdoctoral researcher Cristen Willer, first author on the study. The brain, she said, has two main functions related to weight: appetite control and the regulation of one's total energy balance (whether you burn more calories or conserve more energy).

"This research tells you a little about what kinds of drugs you want to develop and where you want them to act," Abecasis said.

Unfortunately, society is often particularly unforgiving of overweight

people, assuming them weak or lacking in discipline.

"If you just want to think about how you react to these people who are obese, they can just be wired differently, so you have to be respectful of that," Abecasis said.

"It's different if you know that overeating is about biology, and it takes a major effort to overcome that biology," Willer said. "Clearly, this suggests that some aspects of eating behavior may be something you're born with."

For example, one of the genes, NEGR1, controls how your brain is wired as it is developing by regulating neuronal growth, Abecasis said.

"In younger children, ages 5-10, we found that with three of (the genes) the children were already heavier at that young age, and with the other three genes, we saw that there was no effect on children," he said. "For those, we only saw an effect in much older individuals. This points to different mechanisms influencing your weight at different ages."

Another example is SH2B1, which was first discovered by U-M researchers studying mice, Abecasis said. Researchers created an obese mouse then returned it to its normal weight by turning on the SH2B1 gene in the brain.

Source: University of Michigan

Citation: Six new genes suggest obesity is in your head, not your gut (2008, December 14)  
retrieved 19 April 2024 from <https://medicalxpress.com/news/2008-12-genes-obesity-gut.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.