

# Variations in gene expression may underlie increased food intake in obesity

April 11 2016

---

Large-scale genetic studies have identified a number of variations in genes that increase an individual's susceptibility to obesity.

An allelic variant in the intronic region of a gene called [fat mass](#) and obesity-associated (*FTO*) is strongly linked to increased food intake and body weight in humans, but it is unclear how the variant causes these effects.

In this month's issue of the *JCI*, a research team led by Rudolph Leibel at Columbia University examined how the obesity-risk allele alters the regulation of nearby genes to promote obesity.

Leibel's group found that the allele was associated with reduced [expression](#) of *FTO* and a nearby gene called *RPGRIP1L*, which encodes a component of the primary cilium. In mice, altered expression of *Rpgrip1l* was linked to increased food intake and weight gain.

Further, the researchers found that reduced expression of *Rpgrip1l* in neurons produced deficits in the brain's response to leptin, a hormone that signals satiety, which may produce the observed increases in [food intake](#).

Collectively, this study suggests that the obesity-risk allele mediates its effect in part through changes in expression to neighboring genes and provides new insights into the mechanisms underlying [genetic predisposition](#) to obesity in humans.

**More information:** George Stratigopoulos et al. Hypomorphism of Fto and Rpgrip1l causes obesity in mice, *Journal of Clinical Investigation* (2016). [DOI: 10.1172/JCI85526](https://doi.org/10.1172/JCI85526)

Provided by Journal of Clinical Investigation

Citation: Variations in gene expression may underlie increased food intake in obesity (2016, April 11) retrieved 23 April 2024 from <https://medicalxpress.com/news/2016-04-variations-gene-underlie-food-intake.html>

<p>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.</p>
--