

# Calorie-restricted weight loss restores ghrelin sensitivity

21 January 2013



In a mouse model, calorie-restricted weight loss reverses the high-fat diet-induced ghrelin resistance that may contribute to rebound weight gain, according to research published online Jan. 10 in *Endocrinology*.

(HealthDay)—In a mouse model, calorie-restricted weight loss reverses the high-fat diet-induced ghrelin resistance that may contribute to rebound weight gain, according to research published online Jan. 10 in *Endocrinology*.

Noting that high-fat diet feeding causes ghrelin resistance in neuropeptide Y (NPY)/agouti-related protein (AgRP) neurons, Dana I. Briggs, Ph.D., of Monash University in Clayton, Australia, and colleagues used a diet-induced obese (DIO) [mouse model](#) to study the role of ghrelin resistance in diet-induced weight loss and rebound weight gain. DIO mice were allocated to receive chow ad libitum or chow diet with 40 percent [calorie restriction](#) until they reached the weight of age-matched lean controls.

The researchers found that body weight, [glucose tolerance](#), and plasma insulin all normalized with both dietary interventions. Calorie restriction-induced weight loss correlated with increased plasma ghrelin, restoration of ghrelin sensitivity, and increases in total NPY/AgRP mRNA expression.

"We show that calorie-restricted weight loss after diet-induced obesity restores the ability of ghrelin to induce food intake, indicating a reversal of diet-induced obesity ghrelin resistance with diet-induced weight loss," the authors write. "We suggest long-term diet-induced obesity changes the body weight setpoint, and as the body interprets calorie-restricted weight loss as negative energy balance, ghrelin fights to defend this higher body weight. This represents a novel [target](#) to restrict rebound weight gain in humans."

**More information:** [Abstract](#)  
[Full Text \(subscription or payment may be required\)](#)

Copyright © 2013 [HealthDay](#). All rights reserved.

APA citation: Calorie-restricted weight loss restores ghrelin sensitivity (2013, January 21) retrieved 28 April 2021 from <https://medicalxpress.com/news/2013-01-calorie-restricted-weight-loss-ghrelin-sensitivity.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.*