

High-fat diet impairs satiation signaling in obese-prone

February 27 2013



Feeding obese-prone rats a high-fat diet leads to impaired satiation signaling through glucagon-like peptide-1, a gastrointestinal hormone that suppresses food intake and helps regulate energy balance, according to a study published online Feb. 19 in *Diabetes*.

(HealthDay)—Feeding obese-prone rats a high-fat diet leads to impaired satiation signaling through glucagon-like peptide-1 (GLP-1), a gastrointestinal hormone that suppresses food intake and helps regulate energy balance, according to a study published online Feb. 19 in *Diabetes*.

Frank A. Duca, Ph.D., from the Institut National de la Recherche Agronomique in Jouy-en-Josas, France, and colleagues compared [food intake](#) in obese-prone and obese-resistant rats fed either normally or a high-energy/high-fat diet, after treatment with the GLP-1 receptor (GLP-1R) agonist exendin-4 or vehicle.

The researchers found that, while exendin-4 suppressed food intake in both types of rats when fed a normal diet, exendin-4 suppressed food intake significantly less in obese-prone rats than obese-resistant rats when fed a high-energy/high-fat diet. Obese-prone rats on a high-energy/high-fat diet had lower GLP-1R expression in the vagal nodose ganglia, less GLP-1 in serum and the [intestinal epithelium](#), and fewer L-cells in the distal ileum.

"These results demonstrate that high-energy/high-fat-feeding coupled with obese-prone phenotype results in reduced endogenous GLP-1 and GLP-1R activation, indicating that impaired GLP-1 signaling during obesity may exacerbate hyperphagia and weight gain," Duca and colleagues conclude.

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

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

Citation: High-fat diet impairs satiation signaling in obese-prone (2013, February 27) retrieved 3 May 2024 from <https://medicalxpress.com/news/2013-02-high-fat-diet-impairs-satiation-obese-prone.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.
