

# New study finds link between overfeeding and high blood pressure

December 21 2012

---



(Medical Xpress)—A new study conducted by researchers at Lehman College, and recently published in the American Heart Association's journal *Hypertension*, shows conclusively that overfeeding causes increases in sympathetic nerve activity (SNA)—part of the fight or flight reflex—which can lead to the development of high blood pressure. Dr. Martin Muntzel, a professor in the College's Dept. of Biology and an expert on diet, Type 2 diabetes and high blood pressure, led the study.

For years, scientists have known that obesity and weight gain are the major causes of [high blood pressure](#), but they haven't been able to determine how this happens. To find out, Dr. Muntzel and his team

implanted radiotelemetry devices into fourteen female Wistar rats to monitor SNA, heart rate and [arterial pressure](#). This experiment marks the first successful use of radiotelemetry technology in rats.

Over a three-week period, the researchers fed seven of the rats a diet high in fat that included vanilla wafers, crackers, buttered popcorn, cheetos and other high-caloric nutrients, while the other seven rats were fed a low-fat diet. The results were immediate—within fifteen days the rats consuming the high-fat diet gained weight and their fat mass doubled, activating lumbar SNA, which in turn caused their heart rate and blood pressure to rise.

"One thing that really surprised me through the course of this experiment is that just two weeks of consuming junk food doubled the subject's fat mass," says Dr. Muntzel. The team chose the cafeteria-style diet not only for its palatability and high caloric content, but also because they knew that it would have precisely the effect they wanted, which was [rapid weight gain](#).

"None of this would have been possible had we not been able to attain the radiotelemetry technology," explains Dr. Muntzel. Telemetry-based devices, specifically the kind that records SNA, have been in use for only four years. "There are a number of researchers from around the world that are using this, but our group was the first to actually make it work in rats," he adds proudly.

**More information:** [hyper.ahajournals.org/content/60/6/1498.abstract](http://hyper.ahajournals.org/content/60/6/1498.abstract)

Provided by City College of New York

Citation: New study finds link between overfeeding and high blood pressure (2012, December

21) retrieved 11 May 2024 from

<https://medicalxpress.com/news/2012-12-link-overfeeding-high-blood-pressure.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.