

New! Sign up for our free **email newsletter**.

Science News

from research organizations

Nervous system activity may predict successful weight loss

Date: January 10, 2012

Source: The Endocrine Society

Summary: A recent study of obese volunteers participating in a 12-week dietary weight-loss program found that successful weight losers had significantly higher resting nerve activity compared to weight-loss resistant individuals.

Share: [!\[\]\(faf942dc3e59ce8eb64b4ac481eca7e0_img.jpg\)](#) [!\[\]\(f6b0299e0b5e4340e509b71914970da0_img.jpg\)](#) [!\[\]\(b5153706f6ea2fc2c42e8803b6804d18_img.jpg\)](#) [!\[\]\(2b8adb27d8c9518333278b6317e2d8a2_img.jpg\)](#) [!\[\]\(a190466037967efc7087885259e58e7a_img.jpg\)](#)

FULL STORY

A recent study of obese volunteers participating in a 12-week dietary weight-loss program found that successful weight losers had significantly higher resting nerve activity compared to weight-loss resistant individuals. The study was accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism (JCEM)*.

The sympathetic nervous system is widely distributed throughout the body and subconsciously regulates many physiological functions including the control of resting metabolic rate and the dissipation of calories after food intake.

The present study examined the relationship between activity of the sympathetic nervous system and weight-loss outcome in a group of obese individuals on a low-calorie diet intervention program.

"We have demonstrated for the first time that resting muscle sympathetic nerve activity (MSNA) is a significant independent predictor of weight-loss outcome in a cohort of overweight or obese subjects," said Nora Straznicky, PhD, of the Baker IDI Heart & Diabetes Institute in Melbourne, Australia and lead author of the study.

"Our findings provide two opportunities. First, we may be able to identify those persons who would benefit most from lifestyle weight-loss interventions such as dieting. Secondly, the findings may also help in developing weight-loss treatments through stimulating this specific nervous activity."

In this study, researchers examined 42 overweight or obese subjects who had participated in dietary-lifestyle intervention trials that cut their daily caloric intake by 30 percent for 12 weeks.

MSNA was measured by microneurography, a process involving the insertion of metal microelectrodes into nerve fascicles (a bundle of nerve fibers). Researchers found that weight loss was independently predicted by baseline resting MSNA.

"We also found that successful weight losers demonstrated large increases in nerve activity following a carbohydrate test meal, whereas the responses were completely blunted in weight-loss resistant subjects," said Straznicky.

"Our findings suggest a significant contribution of subconscious nervous system activity to the success of dietary weight loss."

Other researchers working on the study include Nina Eikelis, Paul Nestel, John Dixon, Tye Dawood, Mariee Grima, Carolina Sari, Markus Schlaich, Murray Esler, Alan Tilbrook, Gavin Lambert and Elisabeth Lambert of Baker IDI Heart & Diabetes Institute.

The article, "Baseline sympathetic nervous system activity predicts dietary weight loss in obese metabolic syndrome subjects," appears in the February 2012 issue of *JCEM*.

RELATED TOPICS	RELATED TERMS
Health & Medicine	> Weight Watchers
> Diet and Weight Loss	> Hyperthyroidism
> Obesity	> Weight machine
> Fitness	> Birth weight
> Diseases and Conditions	> Fetus
> Men's Health	> Weight training
> Medical Topics	> Local anesthetic
> Hearing Loss	> Polonium
> Hair Loss	

Story Source:

Materials provided by **The Endocrine Society**. Note: Content may be edited for style and length.

The Endocrine Society. "Nervous system activity may predict successful weight loss." ScienceDaily. ScienceDaily, 10 January 2012. <www.sciencedaily.com/releases/2011/12/111205082251.htm>.

Explore More

from ScienceDaily

RELATED STORIES

Study Suggests That Unintentional Weight Loss Is a Signal to See a Doctor

Jan. 23, 2024 – Unintentional weight loss is associated with an increase in the risk of a cancer diagnosis within the coming year, according to a new study. Compared with participants who did not lose weight, recent ...

Behavior Patterns of People Who Achieve Clinically Significant Weight Loss

May 2, 2023 – A new study analyzing data on over 20,000 U.S. adults links a healthier diet and increased exercise to weight loss that reduces heart disease risk -- while associating skipping meals and taking ...

Shedding Pounds May Benefit Your Heart -- Even If Some Weight Is Regained

Mar. 28, 2023 – Weight loss was associated with decreased risk factors for cardiovascular disease and Type 2 diabetes for at least five years -- even if some weight was regained, according to a review of research on ...

New, Remote Weight-Loss Method Helped Slash Pounds

July 14, 2020 – A new remote weight-loss program, called Opt-IN, provides maximum weight loss for the lowest cost and with much less hassle than the gold-standard National Diabetes Prevention Program (DPP), the most ...

Breaking

this hour

-
- > Enhancing Performance in Organic Semiconductors
 - > Half a Billion-Year-Old Spiny Slug
 - > Rising Earth in Antarctica: Sea Level Rise
 - > Origins of the Moon's Tenuous Atmosphere
 - > Sea Level Changes Shaped Early Life On Earth
 - > What Gave the First Molecules Their Stability?

- › Fossil Shows How Penguins' Wings Evolved
- › Global Warming and Rising Sea Levels
- › Shifts in Vital Pacific Arctic Fisheries
- › DNA Replication: Humans and Baker's Yeast

Trending Topics

this week

HEALTH & MEDICINE

Cholesterol

Lung Cancer

Influenza

MIND & BRAIN

Stroke

Social Psychology

Consumer Behavior

LIVING & WELL

Consumer Behavior

Staying Healthy

Racial Issues

Strange & Offbeat

HEALTH & MEDICINE

When It Comes to DNA Replication, Humans and Baker's Yeast Are More Alike Than Different
Key to Rapid Planet Formation

Artificial Blood Vessels Could Improve Heart Bypass Outcomes

MIND & BRAIN

Exploring Consciousness With Eureka Moments

Study Uses Game of Thrones to Advance Understanding of Face Blindness

Smell of Human Stress Affects Dogs' Emotions Leading Them to Make More Pessimistic Choices

LIVING & WELL

Want to Spot a Deepfake? Look for the Stars in Their Eyes

What Fat Cats on a Diet May Tell Us About Obesity in Humans

Free Subscriptions

Stay informed with ScienceDaily's free email newsletter, updated daily and weekly. Or view our many newsfeeds in your RSS reader:


 [Email Newsletter](#)

 [RSS Feeds](#)

Follow Us

Keep up to date with the latest news from ScienceDaily via social networks:

 [Facebook](#)

 [X / Twitter](#)

Have Feedback?

Tell us what you think of ScienceDaily -- we welcome both positive and negative comments. Have any problems using the site? Questions?

 [Leave Feedback](#)

 [Contact Us](#)

[About This Site](#) | [Staff](#) | [Contribute](#) | [Advertise](#) | [Privacy Policy](#) | [Editorial Policy](#) | [Terms of Use](#)

Copyright 1995-2024 ScienceDaily or by other parties, where indicated. All rights controlled by their respective owners. Content on this website is for information only. It is not intended to provide medical or other professional advice. Views expressed here do not necessarily reflect those of ScienceDaily, contributors or partners. Financial support for ScienceDaily comes from advertisements and referral programs.