

Resisting rich foods: Quieting a gene in mice helps them say no to unhealthy meals

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Credit: AI-generated image ([disclaimer](#))

If candy and potato chips didn't beckon from every street corner, wouldn't we all be thin? Thankfully, science is looking at ways to resist. Researchers have found that silencing a particular gene in mice keeps them from getting fat, even when presented with an abundance of calorie-dense food.

Along with colleagues, Andrew Greenberg, M.D., the Atkins Professor in Nutrition and Metabolism at Tufts School of Medicine and director of the Obesity and Metabolism Laboratory at the HNRCA, bred a strain of mice born without the gene that codes for perilipin-2, a protein that regulates the storage of fat within cells. They offered those mice, along with a genetically conventional group, the equivalent of a Western diet—sugary, high-fat food—and let them eat their fill.

After 12 weeks, the mice lacking perilipin-2 had gained significantly less weight than the control group, which, as expected, continued to eat hungrily. The perilipin-2-free mice ate less in comparison, and even moved around more.

They also had all the health advantages that go along with being lean: smaller fat cells, less inflammation, lower triglyceride levels and better [insulin sensitivity](#).

In addition to eating less and moving more, the genetically altered mice appeared to have more brown fat cells, which, unlike typical white [fat cells](#), actually have the ability to burn calories.

Because humans also carry the perilipin gene, the findings eventually could lead to ways to fight obesity and diabetes. "This is an exciting observation because it provides an opportunity to identify new pathways that modulate food intake, physical activity and potentially, metabolism of fat," says Greenberg, an associate professor at the Friedman School.

The study was published in the *Journal of Lipid Research*.

Provided by Tufts University

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