

Economic conditions may trump genetics when battling obesity

October 23 2012, by Zeke Barlow



George Davis and Deborah Good work in the laboratory where they found that economic conditions can play a more important role than genetics when it comes to making healthy food choices.

In a first of its kind study that shows environmental conditions can be more influential than genetics, Virginia Tech researchers have found that the cost of food — not someone's genetic makeup—is a major factor in eating fattening food.

The study, which was recently published in *The Open [Neuroendocrinology Journal](#)*, suggests that economic environments could be altered to help counteract the [obesity epidemic](#) plaguing more than one-third of Americans.

In the U.S. over the last 30 years, the price of fattening food has declined compared to [healthy food](#), while [obesity rates](#) increased. This research suggests that if fattening foods cost more or were taxed, people would be less likely to eat them.

"This study shows that the current low costs of high-fat foods only exacerbates the obesity epidemic, even among those individuals who might not otherwise be prone to obesity," said George Davis, a professor of agricultural and applied economics and health, nutrition, foods and exercise in the College of Agriculture and Life Sciences.

"People may think that if they are genetically geared toward being obese that they may not be able to do anything about it," said Deborah Good, a [geneticist](#) and associate professor of [human nutrition](#), foods and exercise. "These data suggest that environmental conditions are as important as genetic make-up."

Their 18-month study used two groups of mice: one that had the *Tub* gene—which leads to adult-onset obesity—and a group that did not. The mice had two different levers to push to make food drop—one which released fatty food, another which produced more healthy food.

Over time, the researchers decreased the number of pushes required for the mice to get the [fatty food](#), making it "cheaper." The healthy food stayed the same cost.

Both sets of mice reacted similarly and put on weight. It suggests that the economic environment is just as important as genetic make-up when it

comes to how much people will eat and the weight they put on.

The results illustrate that even people who might otherwise eat healthy will eat poorly if the food is cheaper. If the price of fattening foods were higher, people would be less likely to eat poorly, Davis said. Government legislation or economic incentives such as a "fat tax" could be strong tools to counteract obesity, Davis said.

"People get the impression that if something is in their genes, there is nothing they can do about it," Davis said. "This gives us hope that people who are predisposed to certain types of behavior can overcome those impulses by using economic incentives."

More information: [benthamscience.com/open/tonneur ...
V005/13TONEUROEJ.pdf](https://benthamscience.com/open/tonneur...V005/13TONEUROEJ.pdf)

Provided by Virginia Tech

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