

# Too many food choices exacerbate the battle against obesity, researchers find

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A new study by researchers at Virginia Tech and the Edward Via College of Osteopathic Medicine has shown that having too many food choices feeds obesity epidemic.

Some scientists say that when mothers eat poorly during pregnancy, they pass along traits to their children that make them more likely to have poor diets and have related health problems.

But a new study in mice by researchers in the Virginia Tech College of

Agriculture and Life Sciences and the Edward Via College of Osteopathic Medicine has shown that the environment in which a child lives may be an equal if not stronger force in determining obesity than their mother's diet.

In other words, nurture, not nature, could be a larger issue when dealing with the obesity epidemic.

The researchers found that having too many [food choices](#) increases the obesity problem. In fact, researchers found that having a choice of a high-fat and [low-fat diet](#) does not help—offspring in this situation tended to eat even more. Their findings were recently released in the journal *Endocrinology*.

"We like variety," said Deborah Good, an author of the paper and an associate professor of [human nutrition](#), foods, and exercise at Virginia Tech. "But when there is a choice, we eat more than when there is not any variety."

Though studies in mice don't necessarily apply to humans, the research can help inform researchers of how natural environment can affect food choices and ultimately a person's weight. In a country where one-third of adults and 17 percent of children are obese, understanding the root causes of the problem is imperative, researchers say.

It is the first study of its kind to look at the issue in terms of mimicking a real world environment in which people have the choice between eating fattening foods or healthy low-fat ones.

Previous mice studies investigating the role of a mother's diet in offspring obesity have limited the offspring's food choice to only high-fat or low-fat diets, but anyone who has walked past the candy aisle to get to the produce section can tell you that is not an accurate

representation of life in America.

"We have found that environmental factors are just as important if not more so than a mother's diet when it comes obesity," said George Davis, a professor in both the Department of Human Nutrition, Foods, and Exercise and the Department of Agricultural and Applied Economics at Virginia Tech. Davis and Good are affiliated faculty of the Fralin Translational Obesity Research Center.

The study is central to the philosophies of [osteopathic medicine](#), which promote wellness and preventive care in medicine.

"This helps to show that if you make good choices, you can overcome some of your natural tendencies and be healthier in the long-run," said Renee Prater, the associate dean for curriculum, assessment, and medical education at the Edward Via College of Osteopathic Medicine, who was also a study author.

In this study, the team had two sets of mothers – those given a high-fat diet, and those given a low-fat diet. The offspring were then given a diet that was high fat, low fat, or one in which they had a choice of foods.

The offspring that had a choice of high- or low-fat foods gained body weight and body fat, and had increased glucose levels. Those on a low fat diet showed no such negative impacts. They did, however, have a higher energy expenditure compared to those on low- or high-fat diets. Essentially, the mice burned more energy as they wandered around and evaluated which food they were going to eat.

But having a choice of either a high-fat or low-fat diet can lead to overeating, the researchers found. It is not unlike if someone had the choice of healthy and fatty foods in a grocery store – they may pick both, which leads to a higher daily fat intake.

Though the study was done on mice, the researchers believe the results are telling and could apply to humans.

The authors hint that if low-fat foods are more readily available, or priced competitively with high-fat and unhealthy foods, even babies born to overweight mothers could counter their prenatal environment and avoid being overweight themselves.

**More information:** "Mitigating or Exacerbating Effects of Maternal-Fetal Programming of Female Mice Through the Food Choice Environment." [DOI: 10.1210/en.2014-1523](https://doi.org/10.1210/en.2014-1523)

Provided by Virginia Tech

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