

# Studying the effects of food ads on childhood obesity

May 25 2021, by Kristie Auman-Bauer

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According to lead researcher Kathleen Keller, associate professor of nutritional and food science at Penn State, being able to identify factors that protect children for overeating in response to pervasive food cues like advertisements is a public health priority. Credit: Ksenia Chernaya/Pexels

Food advertisements targeting kids can encourage poor eating habits that contribute to obesity, however not all children are susceptible. Penn State researchers are exploring the factors that protect children from overeating in response to food ads in a \$2.3 million NIH (National Institutes of Health) National Institute of Diabetes and Digestive and Kidney Disorders funded project.

According to lead researcher Kathleen Keller, associate professor of nutritional and [food science](#), being able to identify factors that protect [children](#) for overeating in response to pervasive [food](#) cues like advertisements is a public health priority.

"Our goal is to figure out what makes some kids resilient in an [obesity](#) environment, which includes access to high-calorie foods, large portion sizes and an abundance of advertising. Once we can identify the traits that protect them, we can use these traits to develop interventions for other kids who lack these protective factors."

In a four-year preliminary study funded by Penn State's [Social Science Research Institute](#) (SSRI), Keller found that some children exhibit neural, cognitive and behavioral traits that help to protect them from food-cue induced overeating. The current study will help confirm these initial findings and follow a group of children over 18 months to determine whether these traits also protect against obesity.

The researchers will follow 140 healthy-weight, seven- to eight-year-old children for 18 months. Half of the children will be at higher risk for obesity due to both parents having obesity, while the other half will be at lower risk with both parents at a healthy weight.

Researchers will compare the effects of exposing children to food and toy commercials while in a functional MRI. "We hypothesize that exposure to food commercials will prompt children to want to eat, but

that there will be substantial variability in this response across children," said Keller.

In the second part of the study, the researchers will determine how food commercials affect children's subsequent food intake during meals when they are hungry and snack times when kids are not hungry, and relate these responses to underlying [neural circuitry](#).

The researchers will code children's' eating behaviors, including speed of eating, size of bites, and level of motivation for the food.

"This is a novel approach, because previous studies only looked at the calories of food consumed, but did not provide insight on how children's eating behaviors are affected," said Keller.

Researchers hope to use their results to identify the neural, behavioral and cognitive traits that can offset the effect of familial risk on obesity.

"This will be the first study to focus on resiliency factors that protect pre-adolescent children from obesity," Keller said. "We expect that kids who have better executive-functioning skills and are better at activating those skills and additionally have lower overall advertising exposure, will be better protected from obesity."

In the future, Keller would like to explore other measures, such as metabolomics and [genetic markers](#), with the long-term goal of identifying early risk and resiliency markers for many chronic diseases. She would also like to follow the children through adolescence to predict some of these behaviors later in life.

Provided by Pennsylvania State University

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