

Teens' neural response to food commercials predicts future weight gain

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Children and adolescents see thousands of food commercials each year and most of them advertise junk foods high in sugar, fat and salt. Yet, we know almost nothing about how all of this food marketing impacts the brain, especially for teens. New research suggests that food commercials "get under the skin" of teens by activating reward regions when they are viewing ads for milk shakes, or burgers, or colas. The bad news for us is that this can result in weight gain and obesity.

In the first prospective longitudinal study to investigate [neural response](#) to unhealthy [food commercials](#), Oregon Research Institute (ORI) scientists Sonja Yokum, Ph.D. and Eric Stice, Ph.D., in collaboration with colleagues from the University of Michigan, the Yale Rudd Center for Food Policy & Obesity, and Duke University used functional Magnetic Resonance Imaging (fMRI) to scan 30 adolescents (14-17 years old) while they watched the television show "Mythbusters." The television show included 20 food commercials and 20 non-food commercials that are frequently advertised to adolescents. Yokum's team found that adolescents showing elevated responses in reward regions to food commercials gained more weight over one year follow-up compared to those with less activation in these brain regions. The magnitude of these effects is much larger than the effects for established risk factors for future [weight gain](#), such as parental obesity.

"This research tells us how food commercials may be negatively impacting teens between the ages of 14 and 17 at-risk for obesity," noted Yokum. "This is important to consider in the debate about whether to

restrict food advertising for unhealthy foods to young teens."

It will be important to replicate this study with larger samples, but this finding is an important contribution to the literature. This research suggests there are individual differences in neural vulnerability to food commercials that appear to identify youth at risk for excess weight gain. In combination with established risk factors of weight gain during adolescence such as sedentary behavior and parental obesity, elevated reward-response to commercials may be an important contributor and a potential target for prevention and intervention programs.

More information: The research findings are published online in an original article in the August issue of *Obesity: A Research Journal*.

Provided by Oregon Research Institute

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