

Federal snack program does not yield expected impacts, researchers find

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A well-intentioned government regulation designed to offer healthier options in school vending machines has failed to instill better snacking habits in a sample of schools in Appalachian Virginia, according to a study by Virginia Tech researchers. Credit: Virginia Tech

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"We thought the legislation would have a profound effect and assumed there would be changes in snack behavior at school and at home," said Professor Elena Serrano, who co-authored the study. Instead, Serrano and Georgianna Mann, a former Virginia Tech graduate student, discovered that while there were improvements in the nutritional value of snacks available to students, teens did not report making healthier choices.

One in five American school-aged children has obesity, defined as excess body fat. Many children and parents struggle to make healthy food choices, particularly given that offices, schools, and other public settings may provide limited access to nutritious foods and snacks. All too often, vending machines stocked with a tantalizing array of colorfully packaged sugar- and fat-laden temptations offer an instant, if fleeting, answer to food cravings. Because children spend much of their time in school, educational institutions can have a significant impact on diet through the foods and drinks they make available to students.

The study by Mann, now an assistant professor at the University of Mississippi, and Serrano, a Virginia Cooperative Extension specialist who serves as Family Nutrition Program Project director and professor in the Department of Human Nutrition, Foods, and Exercise in the College of Agriculture and Life Sciences, was recently published in the *Journal of Nutrition Education and Behavior*.

The research team examined the U.S. Department of Agriculture's Smart Snacks in School regulation. Introduced at the beginning of the 2014-15 school year, the federal mandate was intended to replace unhealthy school snacks and beverages with more wholesome options, including

fruits, vegetables, and packaged treats low in fat, sugar, and sodium. More than 25 percent of children's daily calories may come from snacks.

The researchers examined the impact of this policy on children's snack food and beverage intake at eight [middle schools](#) in rural Appalachian Virginia. Certain factors, such as low socioeconomic status and a rural lifestyle, are correlated with lower dietary quality and higher obesity rates.

The researchers investigated the [food](#) environment both before and after implementation of the Smart Snacks standards. Before implementation, 416 sixth-grade students were surveyed. After implementation, 304 sixth- and 363 seventh-grade students were surveyed.

"We did not see any significant difference in overall snack behavior before or after," Serrano said.

Childhood obesity has tripled over the past three decades, according to the Centers for Disease Control. Smart Snacks complemented the 2010 Healthy, Hunger-Free Kids Act, which overhauled the federal school breakfast and lunch programs with new standards to promote whole grains, fruits, vegetables, low-fat milk products, and less sodium and fat in school meals. Since school meals formulate only part of a student's daily calorie intake, Smart Snacks was added to close the nutritional gap by providing healthy foods and beverages through school vending machines, stores, and à la carte services.

The good news is that foods with the highest number of eating occasions during the school day were fruit (23 percent of the students consumed it once per day) and vegetables (13.9 percent), followed by candy and chips. Students reported similar percentages for snack foods enjoyed outside of [school](#). In short, no significant differences were found after implementation of the Smart Snacks program.

Snack packaging may have clouded [student](#) reporting, according to the researchers.

"Many snacks now available to students in schools have been reformulated to meet the new, healthier snack standards," said Serrano. However, these "copycat" snacks are packaged to look very much like their less healthy counterparts, which are available in stores.

"If you don't know the difference, you may not report it as different. This would prevent researchers from detecting a difference," she said.

In addition, the researchers examined snack habits rather than meal behaviors, which may have changed for the better.

While the middle schools did their best to comply with the new, more rigorous federal nutrition standards, most were not fully compliant.

"Based on a [parallel study](#) of the same eight middle schools, 90 percent of à la carte foods were compliant with the standards after implementation, an increase from 36 percent compliance before the standards," Serrano stated.

Full compliance, according to Serrano, will take time, education, and resources. Some schools, particularly those in impoverished districts, have struggled to adopt healthier, albeit often more costly, [snack](#) options.

Serrano is supportive of the enhanced federal nutrition standards and cautions that healthier dietary habits are not established overnight. Given time, she feels these programs will help adolescents incorporate more nourishing foods into their diets. Serrano's hope is echoed by parents, many of whom want to see schools play a leading role in nourishing students' minds and bodies, a practice that may ultimately lower the country's obesity rates and instill life-long healthy nutritional habits.

More information: Georgianna Mann et al. Smart Snacks in School Legislation Does Not Change Self-Reported Snack Food and Beverage Intake of Middle School Students in Rural Appalachian Region, *Journal of Nutrition Education and Behavior* (2017). [DOI: 10.1016/j.jneb.2017.05.338](#)

Provided by Virginia Tech

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