

As kids age, snacking quality appears to decline

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Elementary school-age kids in a new study tended to eat snacks that enhanced diet quality but older children ate snacks that detracted from diet quality. Credit: David Orenstein/Brown University

The average U.S. child snacks three times a day. Concerned about the role of snacking in obesity, a team of researchers set out to explore how eating frequency relates to energy intake and diet quality in a sample of low-income, urban schoolchildren in the Boston area. They expected that snacking would substantially contribute to kids' overall energy intake, and the new data confirm that. But they were surprised that the nutritional value of snacks and meals differed by age.

The findings, led by first author E. Whitney Evans, a postdoctoral research fellow at Brown University and the Weight Control and Diabetes Center at The Miriam Hospital, are published online in the journal *Public Health Nutrition*.

"Unexpectedly, in elementary school-age participants we found that overall eating frequency and snacks positively contributed to diet quality," wrote Evans and colleagues from the Friedman School of Nutrition Science and Policy at Tufts University, where Evans did the research under the guidance of senior author Aviva Must, professor and chair of the Department of Public Health and Community Medicine at Tufts University School of Medicine. . "In adolescents, however, our results suggested that snacks detract from overall diet quality while each additional meal increased diet quality."

The diet quality differences by age were significant. Among the 92 school-age children aged 9 to 11 in the study, each snack raised their diet quality by 2.31 points, as measured on the Healthy Eating Index, 2005 developed by the U.S. Department of Agriculture. Among the 84 teens in the study, aged 12 to 15, each snack dragged the quality score down by 2.73 points whereas each meal increased the quality score by 5.40 points.

Overall, each snack contributed about half as much to total daily [energy intake](#) as each meal, making them high-stakes eating moments, Evans said.

"Snacks don't have to be vilified," said Evans who is both a parent and a registered dietitian. "Snacks can be beneficial to children's diets when made up of the right foods. But we do need to be aware that snacks do positively contribute to energy intake in children."

The best snacks at any age, she said, are ones that are nutrient-rich,

rather than calorically dense.

Evaluating eating

To conduct the study, Evans and a team of registered dietitians asked kids (with parental consent) at four Boston-area schools to provide some basic demographic information. Then, on two separate occasions, the kids completed a 24-hour diet recall, in which they recounted what they ate during the previous day. The kids were provided with references to help them describe what and how much they consumed.

Evans, Must and their colleagues determined the number of meals and snacks reported by each child, along with their total energy intake and diet quality score, as measured by the Healthy Eating Index, 2005. In all their analyses, the researchers accounted for variables such as gender, ethnicity, eligibility for free and reduced-price lunches, maternal education, and levels of physical activity.

The study data do not overtly explain why snacking has opposite effects on diet quality depending on a child's age, but the researchers note that younger children more frequently depend on (and perhaps abide) grownups, while older kids are more often make their own snacking choices.

Snacks strategies

The findings suggest a clear decay in snacking quality as children age, but rather than despairing, parents, educators and other care providers can make use of the findings, Evans said. One step could be to emphasize good snacking habits among younger kids, who may be relatively receptive to such messages, so that their potential decline may start from a better place. Another is to recognize that adolescents may be

inclined to make worse choices and take steps to prevent that.

"It's important to help adolescents understand the implications of snacking, Evans said. "For example, [snacks](#) that could occur as mindless eating in front of the television may be the ones that increase their weight over time."

A third strategy is to embrace the clear importance of meals, especially for adolescents. The diet quality score rose 5.40 points with each meal for teens and 3.84 points with each meal for younger kids.

"Meals, especially family meals, really have a great potential for increasing the [diet quality](#) of adolescents," Evans said.

Provided by Brown University

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