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Healthy Eating Research

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School Meals Play Crucial Role in Health of American Children, Especially in Food-Insecure Households

New research builds on USDA study that found school nutrition standards have made school meals dramatically healthier without raising costs

Princeton, NJ – School meals are important contributors to the healthy diets of our nation’s children, especially those in food insecure households, according to new papers published in a [special issue](#) of the journal *Nutrients*. The papers use United States Department of Agriculture (USDA) data, which previously found that the nutritional quality of school meals has significantly improved, benefiting both children and schools, to generate new evidence on how the nutritional quality of school meals can impact children’s health and well-being. The papers address urgent policy challenges related to food security, childhood obesity, sugar consumption, and racial and ethnic disparities when it comes to healthy meals. [Healthy Eating Research](#), a national program of the Robert Wood Johnson Foundation, commissioned and funded the special journal issue.

The 14 papers in the special issue use data from the USDA’s [School Nutrition and Meal Cost Study](#) (SNMCS). The study collected data from over 1,200 schools, 2,000 students, and 500 school food authorities and provides a wealth of knowledge about school meals and the role they play in children’s health and well-being. Data are from the 2014-15 school year. The study was conducted by [Mathematica](#), a policy research organization based in Princeton, New Jersey.

“The School Nutrition and Meal Cost Study was the first nationally representative study to assess school meals after implementation of updated nutrition standards that were mandated in the Healthy Hunger-Free Kids Act. These new papers go even deeper in exploring how national policies have affected children and schools,” said Mary Story, PhD, RD, director of Healthy Eating Research. “As Congressional leaders look to reauthorize the bill this year, it’s critical that these standards are kept in place.”

“The papers in this special issue build on findings from the School Nutrition and Meal Cost Study and examine the school meal programs in the context of important social policy issues including racial and ethnic disparities, childhood obesity, food insecurity, and the influence of local wellness policies,” said Mary Kay Fox, Director of Nutrition Research at Mathematica.

The SNMCS assessment of the National School Breakfast and Lunch programs show that children are eating meals lower in sodium and saturated fat, while consuming more whole grains, and costs to school districts have not increased. The findings demonstrate that the Healthy Hunger-Free Kids Act has been largely successful in boosting nutritional quality of school meals and offers new evidence of how strong state and local policies can bolster the impact of the national standards.

To build on the foundation of evidence set by SNMCS, Healthy Eating Research commissioned the strategic, timely research in the special issue to fill information gaps on how the school food environment influences children’s dietary behaviors and weight, and which changes hold the most promise for reducing childhood obesity, improving diet quality, and reducing food insecurity among school-age children. The new papers shed additional light on the effects of these policies and implications for future action.

Implications for Equity

The research found that since implementation of the HHFKA, the national nutrition standards and state and local wellness policies have contributed to reducing disparities in meal quality across socio-economic status and race and ethnicity. [One of the papers](#) found that students in food-insecure and marginally secure households were more likely to participate in the National School Breakfast and Lunch Programs, indicating that efforts to boost participation in these programs, and the nutritional quality of the food served by the programs, is appropriately focused on students with the greatest need. The same paper also found that offering universal free meals was associated with higher school meal participation among food insecure and moderately food secure students.

Importantly, [one paper](#) in the special issue found that offering free meals to all students was associated with lower costs for schools. This reveals that offering free meals to all students can provide nutritious meals to more students without a financial disadvantage for schools and school districts.

[Another paper](#) found that since implementation of the HHFKA nutrition standards, disparities in the nutritional quality of school meals have been reduced, with no reported differences in the quality of meals served across socio-economic status (SES), race, and ethnicity.

Need for Continued Improvements

[One paper](#) in the special issue found that levels of added sugars in school meals are high. In fact, 92 percent of school breakfasts and 69 percent of school lunches exceeded the [Dietary Guidelines for Americans \(DGA\)](#) limit on added sugars, primarily due to the sugar content of flavored milk. The current nutrition standards do not include a standard for added sugars.

Findings presented in this paper may be useful to USDA as it considers adding a standard for added sugars, in keeping with the 2020-2025 DGA.

How Local Policies Can Help

The national standards established by the HHFKA have been effective in many ways, but state and local policies can benefit children further.

For example, [one paper](#) in the special issue found that strong state nutrition standards for snacks and à la carte (also known as competitive) foods are associated with fewer unhealthy snack foods in schools, and with lower body-mass index (BMI) scores among students. The BMI difference was significant, with students living in states with the strongest laws having a lower BMI (mean student BMI Percentile of 62) than those in states with the weakest laws (mean student BMI percentile of 68). By assessing the effects of state nutrition standards, this illustrates that federal standards on snacks in schools are critical to improving the school nutrition environment and reducing rates of childhood obesity.

[Another paper](#) found a related effect, showing that proposals for revised federal nutrition standards for snacks, similar to those [proposed](#) by the USDA in January 2020, would result in weakened guidelines and add significant levels of sodium and saturated fat to students' consumption.

Local wellness policies, which are often created and implemented at the district and school building levels, can also benefit children. [One paper](#) in the special issue found that schools in districts with strong wellness policies had higher school breakfast participation rates, stronger local procurement policies limiting saturated fats and sugars, and better school nutrition practices, such as including students in meal planning and providing nutrition information on items served. Local wellness policies provide districts and schools with an important opportunity to target the issues they feel are most relevant in their community, and to optimize student food security, nutrition and health.

The national childhood obesity rate has been rising for decades, with strong implications for negative health outcomes. According to the US Centers for Disease Control and Prevention (CDC), 15.5 percent of children aged 10-17 have obesity, which puts them at greater risk for many chronic diseases such as type 2 diabetes, high blood pressure and asthma. These rates are higher among children of color and children from low-income families. Because children consume up to 50 percent of their calories at school, nutritional standards for the meals and snacks served at school can have a tremendous impact on their health.

See a full list of the papers in the special journal issue below.

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About Healthy Eating Research

Healthy Eating Research is a national program of the Robert Wood Johnson Foundation. The program supports research on policy, systems, and environmental change strategies with strong potential to promote the health and well-being of children, and that advance health equity in the areas of nutrition, nutritional disparities, and food security. For more information, visit www.healthyeatingresearch.org.

About the Robert Wood Johnson Foundation

For more than 40 years the Robert Wood Johnson Foundation has worked to improve health and health care. We are working with others to build a national Culture of Health enabling everyone in America to live longer, healthier lives. For more information, visit www.rwjf.org. Follow the Foundation on Twitter at www.rwjf.org/twitter or on Facebook at www.rwjf.org/facebook.

List of Papers in the Nutrients special issue: “[The School Nutrition and Meal Cost Study-I: Findings Related to Improving Diet Quality, Weight, and Disparities in US Children](#)”

- [Added Sugars in School Meals and the Diets of School-Age Children](#)
By Mary Kay Fox, Elizabeth C. Gearan and Colin Schwartz
- [Universal Free Meals Associated with Lower Meal Costs While Maintaining Nutritional Quality](#)
By Michael W. Long, Keith Marple and Tatiana Andreyeva
- [Associations among Food Security, School Meal Participation, and Students’ Diet Quality in the First School Nutrition and Meal Cost Study](#)
By Sarah Forrestal, Elizabeth Potamites, Joanne Guthrie and Nora Paxton
- [Can Monitoring Make It Happen? An Assessment of How Reporting, Monitoring, and Evaluation Can Support Local Wellness Policy Implementation in US Schools](#)
By Lindsey Turner, Yuka Asada, Julien Leider, Elizabeth Piekarz-Porter, Marlene Schwartz and Jamie F. Chiqui
- [State Wellness Policy Requirement Laws Matter for District Wellness Policy Comprehensiveness and Wellness Policy Implementation in the United States](#)
By Jamie F. Chiqui, Julien Leider, Lindsey Turner, Elizabeth Piekarz-Porter and Marlene B. Schwartz
- [Are Nutrition Standards for Beverages in Schools Associated with Healthier Beverage Intakes among Adolescents in the US?](#)

By Jamie F. Chriqui, Julien Leider, Juliana F. W. Cohen, Marlene Schwartz and Lindsey Turner

- [**Analyzing the Association between Student Weight Status and School Meal Participation: Evidence from the School Nutrition and Meal Cost Study**](#)

By Sarah Bardin and Alice Ann Gola

- [**Association between Nutrition Policies and Student Body Mass Index**](#)

By Marlene B. Schwartz, Julien Leider, Juliana F. W. Cohen, Lindsey Turner and Jamie F. Chriqui

- [**Differences in Diet Quality between School Lunch Participants and Nonparticipants in the United States by Income and Race**](#)

By Elizabeth C. Gearan, Kelley Monzella, Leah Jennings and Mary Kay Fox

- [**District Wellness Policy Nutrition Standards Are Associated with Healthier District Food Procurement Practices in the United States**](#)

By Elizabeth Piekarz-Porter, Julien Leider, Lindsey Turner and Jamie F. Chriqui

- [**Meal Quality of Entrées That Can Be Sold as Competitive Foods in Schools and Potential Impact of the Proposed USDA Rollbacks**](#)

By Juliana F.W. Cohen, Marlene B. Schwartz, Julien Leider, Lindsey Turner and Jamie F. Chriqui

- [**Disparities in the Healthfulness of School Food Environments and the Nutritional Quality of School Lunches**](#)

By Sarah Bardin, Liana Washburn and Elizabeth Gearan

- [**Assessing the Relationship between District and State Policies and School Nutrition Promotion-Related Practices in the United States**](#)

By Gabriella M. McLoughlin, Lindsey Turner, Julien Leider, Elizabeth Piekarz-Porter and Jamie F. Chriqui

- [**The Role of District Wellness Policies in Encouraging Student Participation in the School Breakfast Program, United States**](#)

By Julien Leider, Wanting Lin, Elizabeth Piekarz-Porter, Lindsey Turner and Jamie F. Chriqui