



# Improving Child Nutrition Policy: Insights from National USDA Study of School Food Environments

February 2009

## Policy Brief

### Background

In the United States, nearly one-third of children and teens are overweight or obese. Because children consume a significant portion of their daily calories at school, the nutritional quality of school meals and competitive foods, such as those offered in vending machines, a la carte lines and school stores, is under particular scrutiny. The U.S. Department of Agriculture (USDA) sets nutrition standards for its two major school meal programs but currently has limited authority to update existing nutrition standards for competitive foods. Some states and local school districts have developed their own competitive food policies, but the national requirements for foods outside of school meal programs are 30 years old and no longer reflect current nutrition science, dietary patterns and public health concerns.

The USDA programs provide meals to children in about 95 percent of public schools and many private schools across the country. On an average day in 2007, 30.5 million children participated in the National School Lunch Program, and about 10 million participated in the School Breakfast Program.<sup>1,2</sup> Most of these meals—59 percent and 80 percent, respectively—were served free or at a reduced price to children from low-income families. The USDA also provides commodity foods for the school meal programs. Nutrition standards for the school meal programs were developed as part of the 1995 School Meals Initiative for Healthy Children (SMI).<sup>3</sup> The USDA and an Institute of Medicine expert panel are working to update the SMI standards to incorporate the Dietary Guidelines for Americans 2005<sup>4</sup> and the Dietary Reference Intakes standards.<sup>5</sup>

The third School Nutrition Dietary Assessment Study (SNDA-III), which was sponsored by the USDA's Food and Nutrition Service, provides the most comprehensive and up-to-date information on the overall food environment in public elementary, middle and high schools. SNDA-III includes data from the 2004–2005 school year on the food and nutrient content of meals offered to and selected by children, children's dietary behaviors at school and outside of school, and the availability and consumption of competitive foods. Like the previous SNDA studies, which have been influential in shaping school nutrition policy, SNDA-III is an important resource for policy-makers who are interested in supporting healthy changes to the school food environment as a way of improving children's diets and overall health.

### Key Findings

Important findings regarding competitive foods and school meals from SNDA-III and other studies using SNDA-III data are presented below.

#### *Competitive Foods*

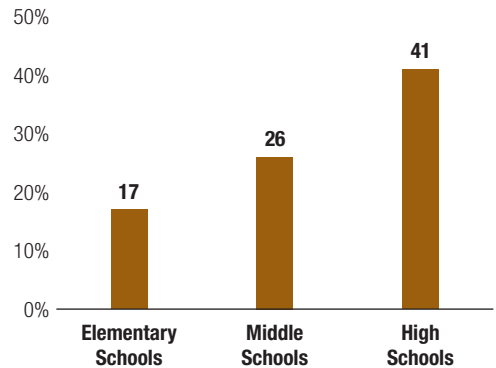
- Nationally, one or more sources of competitive foods were available in 73 percent of elementary schools, 97 percent of middle schools and 100 percent of high schools.<sup>6</sup>

**1** RWJF Policy Brief—Improving Child Nutrition Policy: Insights from National USDA Study of School Food Environments

- Overall, 40 percent of students consumed one or more competitive foods on a typical school day, and competitive food consumption increased with grade level.<sup>7</sup>
- Consistent with previous research, the most common types of competitive foods purchased were low-nutrient, energy-dense foods and beverages, including candy, desserts, salty snacks and sugar-sweetened drinks.<sup>7</sup>
- Students who attended middle and high schools with competitive food restrictions consumed fewer calories from sugar-sweetened beverages.<sup>8</sup>

### Consumption of Competitive Foods at School Highest for Middle and High School Students

Percentage of Students Consuming Competitive Foods on School Days

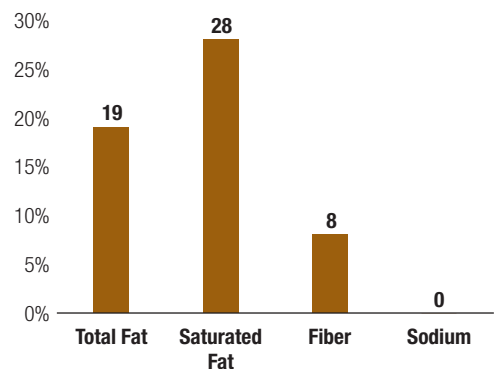


### School Meals

- National School Lunch Program participants were significantly less likely to consume competitive foods and sugar-sweetened beverages at school.<sup>7,9</sup>
- Body mass index (BMI) data indicate that students who participated in the School Breakfast Program had a lower likelihood of overweight and obesity than non-participants.<sup>10</sup>
- There was a significantly higher likelihood of obesity among elementary students whose schools offered french fries for lunch more than once a week. The same was true for students whose schools offered dessert with lunch more than once a week.<sup>11</sup>
- Elementary students who were offered fresh fruits and raw vegetables daily during lunch consumed significantly fewer calories from low-nutrient, energy-dense foods *and* consumed significantly more fruits and vegetables during the school day.<sup>8</sup>
- Fewer than one-third of public schools participating in the National School Lunch Program offered lunches that met the SMI standards for total fat or saturated fat. However, more than 85 percent of public schools met SMI standards for protein, vitamin A, vitamin C, calcium and iron.<sup>12</sup>
- Only 8 percent of schools offered lunches that were consistent with the 2005 Dietary Guidelines recommendation for fiber, and no schools met the recommendation for sodium.<sup>12</sup>
- Thirty-one percent of school lunch menus included whole milk, and 58 percent included 2% milk, which were major sources of saturated fat in the lunches.<sup>13</sup>

### Dietary Components of Most Concern Among Schools Participating in National School Lunch Program

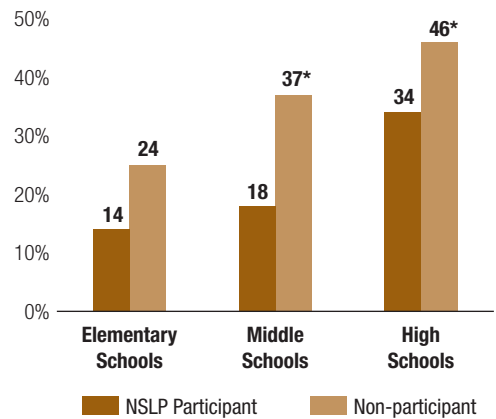
Percentage of Lunches Offered by Schools that Meet Recommendations



- Forty-two percent of schools did not offer fresh fruits or raw vegetables daily in the school lunch, and whole-grain bread products were offered in fewer than 5 percent of lunches overall.<sup>13</sup>
- Among schools with a higher percentage of low-income students, fresh fruits and raw vegetables were served significantly less often as part of National School Lunch Program meals.<sup>14</sup>
- While more than 90 percent of schools offered children the *opportunity* to select low-fat items and a low-fat school lunch, students most often chose high-fat options.<sup>6</sup>
- Processed commodities and other commercially prepared food products, such as pizza, breaded chicken nuggets, beef patties and burritos, accounted for 40 percent of the lunch entrees available. These menu items were among the top contributors of calories, fat and sodium in the lunches.<sup>12</sup>

### National School Lunch Program Participants Less Likely to Eat Competitive Foods at School

Percentage of Students Consuming Competitive Foods on School Days



\* Difference is statistically significant at the .01 level.

### Policy Recommendations

The following recommendations for policy-makers are based on a comprehensive analysis of data from SNDA-III, as presented in *The School Food Environment, Children's Diets, and Obesity: Findings from the Third School Nutrition Dietary Assessment Study*.

- Update the national standards for competitive foods and beverages to bring them in line with the 2005 Dietary Guidelines and apply them to the whole campus for the entire school day. The new standards should:
  - restrict the sale of sugar-sweetened beverages throughout the day in all schools;
  - limit the availability of low-nutrient, energy-dense foods sold a la carte and in vending machines and fundraisers; and
  - promote children's consumption of fruits, vegetables, whole grains and non-fat or low-fat dairy products.
- Update nutrition standards for the National School Lunch Program and School Breakfast Program to reflect the 2005 Dietary Guidelines and Dietary Reference Intakes for energy, fat, fiber, sodium and essential nutrients.
- Provide more fresh fruits and vegetables to schools by expanding the USDA Fresh Fruit and Vegetable Program, as well as by working through commodity food programs and the Department of Defense Fresh Fruit and Vegetable Program.
- Expand efforts that aim to increase participation in the National School Lunch Program and the School Breakfast Program.

- Expand nutrition education efforts to help students make healthy food choices and increase awareness among parents and students about the nutritional benefits of participating in the school meal programs.
- Revise menu-planning requirements for school meals to:
  - remove the current requirement specifying that schools offer milk at various fat levels and require schools to serve only non-fat (skim) or low-fat (1%) milk;
  - emphasize daily offerings of fresh fruits and whole grains, with more frequent offerings of dark green/orange vegetables and legumes; and
  - limit low-nutrient, energy-dense foods, particularly french fries and desserts.
- Support training and technical assistance for school food service managers and cooks in techniques to prepare healthy foods and promote them to students.
- Fund research to learn more about promising practices among schools that comply with the 2005 Dietary Guidelines, as well as obstacles to improving school food environments.

Access to *The School Food Environment, Children's Diets, and Obesity: Findings from the Third School Nutrition Dietary Assessment Study*, appearing in the *Journal of the American Dietetic Association (Supplement, February 2009)*, is available at [www.adajournal.org](http://www.adajournal.org). Support for the special supplement was provided by the Robert Wood Johnson Foundation. The SNDA-III study was conducted by Mathematica Policy Research, Inc., under a contract with the USDA Food and Nutrition Service.

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- 1 US Department of Agriculture, Food and Nutrition Service. *National School Lunch Program: participation and lunches served*, May 23, 2008, available at [www.fns.usda.gov/pd/slsummar.htm](http://www.fns.usda.gov/pd/slsummar.htm).
  - 2 US Department of Agriculture, Food and Nutrition Service. *School Breakfast Program: participation and breakfasts served*, May 23, 2008, available at [www.fns.usda.gov/pd/sbsummar.htm](http://www.fns.usda.gov/pd/sbsummar.htm).
  - 3 Office of the Federal Register, National Archives and Records Administration. "National School Lunch Program and School Breakfast Program: School Meals Initiative for Healthy Children (7 CFR Parts 210 and 220). Final Rule." *Federal Register*, 60(113):31188–31222, 1995.
  - 4 US Department of Health and Human Services and US Department of Agriculture. *Dietary Guidelines for Americans 2005*, 2005, available at [www.health.gov/dietaryguidelines/dga2005/document/default.htm](http://www.health.gov/dietaryguidelines/dga2005/document/default.htm).
  - 5 Institute of Medicine. *Nutrition Standards and Meal Requirements for National School Lunch and Breakfast Programs: Phase I. Proposed Approach for Recommending Revisions*. Washington, DC: The National Academies Press; 2008, available at [www.nap.edu/catalog/12512.html](http://www.nap.edu/catalog/12512.html).
  - 6 Gordon AR, Crepinsek MK, Nogales R and Condon E. *School Nutrition Dietary Assessment Study-III: Vol. I: School Foodservice, School Food Environment, and Meals Offered and Served*. Princeton, NJ: Mathematica Policy Research, Inc, 2007, available at [www.fns.usda.gov/oane/MENU/published/cnp/FILES/SNDAIII-VolI.pdf](http://www.fns.usda.gov/oane/MENU/published/cnp/FILES/SNDAIII-VolI.pdf).
  - 7 Fox MK, Gordon AR, Nogales R and Wilson A. "Availability and consumption of competitive foods in US public schools." *Journal of the American Dietetic Association*, 109(suppl 1):S57–S66, 2009.
  - 8 Briefel R, Crepinsek MK, Cabili C, Wilson A and Gleason PM. "School food environments and practices affect dietary behaviors of US public school children." *Journal of the American Dietetic Association*, 109(suppl 1):S91–S107, 2009.
  - 9 Briefel R, Wilson A and Gleason PM. "Consumption of low-nutrient, energy-dense foods and beverages at school, home, and other locations among school lunch participants and nonparticipants." *Journal of the American Dietetic Association*, 109(suppl 1):S79–S90, 2009.
  - 10 Gleason PM and Dodd AH. "School breakfast program but not school lunch program participation is associated with lower body mass index." *Journal of the American Dietetic Association*, 109(suppl 1):S118–S128, 2009.
  - 11 Fox MK, Dodd AH, Wilson A and Gleason PM. "Association between school food environments and practices and body mass index of US public school children." *Journal of the American Dietetic Association*, 109(suppl 1):S108–S117, 2009.
  - 12 Crepinsek MK, Gordon AR, McKinney PM, Condon E and Wilson A. "Meals offered and served in US public schools: do they meet nutrient standards?" *Journal of the American Dietetic Association*, 109(suppl 1):S31–S43, 2009.
  - 13 Condon E, Crepinsek MK and Fox MK. "School meals: the types of foods offered to and consumed by children at lunch and breakfast." *Journal of the American Dietetic Association*, 109(suppl 1):S67–S78, 2009.
  - 14 Finkelstein DM, Hill EL and Whitaker, RC. "School Food Environments and Policies in US Public Schools." *Pediatrics*, 122(1):e251–e259; 2008.