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School Meal Regulations and Child Nutrition: Environmental Approaches to Improve Intake

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Brief reviewed by a multidisciplinary, multi-sector team of experts.

Summary of Findings:

- The School Breakfast Program (SBP) and National School Lunch Program (NSLP) requirements have recently been updated to improve the healthfulness of school meals.¹
- For these changes to improve children's health status, efforts must be made to increase the acceptance and consumption of the available healthful foods.
- Behavioral economic approaches change the choice architecture to make the healthful choice the default option², often healthful choices are more convenient or visually appealing than less healthful choices. Thus, these approaches can nudge students toward healthful choices and increase intake of healthful foods.
- Effective behavioral economic strategies should be incorporated into federally funded nutrition programs.

Background

The SBP and NSLP are federally-assisted meal programs administered by the United States Department of Agriculture (USDA) Food and Nutrition Service at the federal level and by state education agencies at the state level.^{3,4} The overarching goal is to promote and improve the health and well-being of school children and to guarantee that low-income children have adequate, nutritious meals during the school day.³⁻⁵ The USDA supports these programs in the form of cash reimbursements for meals served. The amount of reimbursement is based on whether the meals are served free, at a reduced-price, or at full price. Children from households at ≤ 130 percent or between 130 and 185 percent of the poverty level are eligible for free or reduced-price meals, respectively.^{3,4}

Key Statistics:

- On a daily basis, in fiscal year 2012, more than 31.6 million children participated in the NSLP and over 12.9 million participated in the SBP.^{6,7}
- In fiscal year 2012, 68% of children who participated in the NSLP and 84% of children who participated in the SBP qualified for free or reduced-price meals.^{6,7}
- Most public, private, and charter schools in the United States participate in the SBP and NSLP.^{3,4}
- On an average school day (2009-2010), 28% of all students in public schools participated in the SBP and 63% participated in the NSLP.⁸ Participation was highest in elementary schools and lowest in high schools.⁸
- Children qualifying for free or reduced-price meals participated in both meal programs at higher rates than those who participated at full price.⁸

Evidence-supported Updates to School Nutrition Policy

In 2005, SBP and NSLP participants consumed adequate vitamins and minerals from school meals, however sodium and calories surpassed recommended levels compared to non-participants.⁹ Moreover, children's intake of whole grains, fruits, and vegetables has traditionally been lower than recommended.¹⁰ To better align school meals with the 2010 Dietary Guidelines for Americans,¹¹ the Healthy Hunger-Free Kids Act¹ was passed in 2010 resulting in the most recent

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and substantial change to the SBP and NSLP. Table 1 summarizes regulations pertaining to Kindergarten to 5th grades, similar to those throughout K to 12th grades. For more details, please refer to the USDA website (<http://www.fns.usda.gov/cnd/Governance/Legislation/comparison.pdf>).¹²

Implementation of the new SBP and NSLP requirements can be expected to improve dietary intakes of students, but only if healthful foods are selected and consumed. Plate waste data collected from 2007-2009 in middle schools in Boston showed that students threw away about half of their fruit, one quarter of their milk, and three-fourths of their vegetables.¹³ A study to evaluate the impact of the new regulations¹ showed that elementary and middle school students in urban schools in Massachusetts increased their selection of fruit by 23% and consumption of vegetables by 16% after the new regulations were implemented, however, waste was still substantial.¹⁴ Results from both studies warrant further research to increase acceptability and consumption of healthful foods by students.

Table 1: Comparison of previous and current (2012) School Breakfast Program (SBP) and National School Lunch Program (NSLP) requirements for K to 5th grade students.¹³

Meal Patterns	SBP		NSLP	
	Previous	2012	Previous	2012
Food groups/week	Previous	2012	Previous	2012
Fruits	2.5 cups	5 cups	2.50-3.75 cups combined	2.50 cups
Vegetables	Can replace fruits	0 cups		3.75 cups
Grains	10 grains or 10 M/MA, or 5 of each	7-10 oz eq ^{ab}	8 oz eq	8 oz eq minimum ^c
Meat/Meat Alternates (M/MA)		0 oz eq	7.5 - 10 oz eq	8 oz eq minimum
Milk	5 cups (variety of fat content allowed)	5 cups (fat free/low fat)	5 cups (variety of fat content allowed)	5 cups (fat free/low fat)
Sodium	Reduce, no set targets	≤540 mg	Reduce, no set targets	≤1230 mg
Calories	554 kcal	350-500 kcal	633 - 785 kcal	550-650 kcal

^aOunce equivalent = oz eq; ^bIn effect July 1, 2014; ^cAt least half whole grain after July 1, 2013, all grains must be whole grain rich after July 1, 2014.

Strategies to Increase Consumption of Healthful Foods

Increasing consumption of healthful foods is important because a child’s weight status, based on diet quality, is tied to future success including academic performance (completing high school and enrolling in higher education) and financial condition (employment, earnings, and home ownership).¹⁵ Effective behavioral economic strategies that apply social and environmental approaches should be implemented to maximize selection and consumption of healthful foods by children. Behavioral economic strategies differ from traditional environmental approaches in that they alter aspects of the choice architecture, therefore making the desired choice the default choice.²

Researchers have implemented simple and inexpensive behavioral economic strategies to encourage intake of healthful foods in schools.¹⁶ For example, making healthful foods convenient and attractive by serving salads in clear containers, presenting fruit in attractive bowls, and picturing nutritious images on the menu resulted in a 10% increase in the number of students consuming a full serving of fruits and vegetables.¹⁶ Placing healthful options in a convenient line decreased intake of less healthful options by 28%.¹⁷ Putting pictures of vegetables on trays to remind students what to include with lunch increased vegetables consumed.¹⁸ Giving children the choice of what vegetable to take also increased vegetables consumed compared to control groups.¹⁹ Slicing apples to make them easier to eat increased apple consumption by students.²⁰ Collectively, these findings suggest that behavioral economic approaches in school eating environments could be a simple and inexpensive solution to encourage and increase children’s consumption of healthful foods offered through the SBP and NSLP.

Recommendations for Incorporating Behavioral Economic Strategies to Improve Child Nutrition

- Apply effective behavioral economic strategies in school meal programs to increase intake of healthful foods offered as a result of updated school meal regulations.
- Develop guidelines and train staff members on how to implement effective strategies.
- Disseminate information on barriers and facilitators with respect to implementation of behavioral economic strategies in a variety of child nutrition settings.
- Conduct research to identify additional effective behavioral economic strategies in schools and to address challenges to implementation such as time students have to eat, extra supervision required, and additional preparation and/or resources needed.

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