

Let's Move Salad Bars to Schools: A Public–Private Partnership To Increase Student Fruit and Vegetable Consumption

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Abstract

Few school-age youth consume the recommended amounts of fruits and vegetables, and increasing fruit and vegetable intake in children and adolescents is an important public health goal to maintain long-term good health and to decrease risk of chronic disease and obesity. School salad bars are an important tool to promote fruit and vegetable consumption among schoolchildren. Studies show that introduction of school salad bars increases the amount and variety of fruits and vegetables consumed by children in schools. However, many schools cannot afford the capital investment in the salad bar equipment. In 2010, the National Fruit & Vegetable Alliance (NFVA), United Fresh Produce Association Foundation, the Food Family Farming Foundation, and Whole Foods Market launched Let's Move Salad Bars to Schools (LMSB2S) in support of First Lady Michelle Obama's *Let's Move!* initiative. The goal of LMSB2S is to place 6000 salad bars in schools over 3 years. As of June, 2012, over 1400 new salad bar units have been delivered to schools across the United States, increasing access to fruits and vegetables for over 700,000 students. Any K through 12 school district participating in the National School Lunch Program is eligible to submit an application at www.saladbars2schools.org/. Requests for salad bar units (\$2625 each unit) are fulfilled through grassroots fund raising in the school community and through funds raised by the LMSB2S partners from corporate and foundation sources. LMSB2S is a model for coalition-building across many government, nonprofit, and industry partners to address a major public health challenge.

Introduction

Increasing fruit and vegetable intake is important for good health and may decrease risk for many chronic diseases, including heart disease,¹ stroke,² diabetes,³ and some cancers.⁴ In the context of obesity, increased fruit and vegetable intake may assist in healthy weight management when energy-dense foods are replaced by fruits and vegetables.⁵ Fruits and vegetables also provide a variety of micronutrients and fiber, and therefore, are targeted in the Dietary Guidelines for Americans, 2010, as two foods to increase to maintain overall health and reduce the risk of chronic disease and obesity.⁶ Additionally, diet quality may affect academic performance; in one study, students consuming the highest level of fruits and vegetables were shown to be significantly less likely to have poor academic

performance.⁷ However, few school-age children consume the recommended amounts of fruits and vegetables. Data from the National Health and Nutrition Examination Survey 2003–2004 found that only 6.2% of adolescents (12–18 years old) met recommendations for fruit intake and 5.8% for vegetable intake.⁸ Helping children develop good eating habits early in life is critical for maximizing academic performance during the school years and for maintaining wellness throughout their lives.

Schools can play an important role in promoting consumption by increasing access to fruits and vegetables and giving students opportunities to learn about and practice healthful eating behaviors. Several federal initiatives have been implemented to increase access to fruits and vegetables in schools, including changes to the USDA school meal pattern requirements, the HealthierUS School

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Challenge, and the National Farm to School Program. School salad bars are an important tool that can support all of these approaches to promote fruit and vegetable consumption in schools. In fact, the White House Task Force on Childhood Obesity endorsed schools using salad bars and upgrading cafeteria equipment to support providing healthier foods to children.⁹ However, not all schools can afford the capital investment in the equipment. Therefore, Let's Move Salad Bars to Schools (LMSB2S) was formed as a unique public-private partnership to promote and sponsor school salad bars with the goal of increasing their prevalence around the country.

Impact of School Salad Bars on Student Fruit and Vegetable Intake

Studies show that introduction of school salad bars increases the amount and variety of fruits and vegetables consumed by children in schools. One of the most comprehensive studies on the impact of school salad bars is a 24-hour food recall study conducted in elementary school children (ages 7–11) from low-income households participating in a salad bar program in the Los Angeles Unified School District.¹⁰ In this study, researchers found that introduction of a school salad bar in three schools resulted in an increase in frequency of fruits and vegetables consumed during the day (change almost all due to increase at lunch) among the students. When the diets were analyzed, the intake of energy, cholesterol, saturated fat, and total fat was found to be significantly lower in children after the introduction of salad bars compared to before. Another study conducted in San Diego, CA, found that elementary students who used the self-service salad bars in two schools ate a greater amount of fruits and vegetables when the variety of fruit and vegetable items was increased on the salad bar.¹¹ More recently the Center of Excellence for Training and Research Translation at the University of North Carolina at Chapel Hill released an evaluation of the Riverside Unified School District Farmer's Market Salad Bar, which is used in 29 elementary schools in the district.¹² The Riverside program focuses on local food and includes hands-on educational activities (Harvest of the Month, taste tests, etc.). This evaluation conducted in four schools found that students who chose the salad bar ate more servings of fruits and vegetables than students who chose the hot bar; food costs were not increased in schools implementing salad bars.

The recently updated USDA school meal patterns now require schools to increase the amount and variety of fruits and vegetables offered as part of the National School Lunch and School Breakfast Programs (NSLP and SBP).¹³ In the new guidelines, fruits and vegetables are now separate meal components; vegetables are to be served daily at lunch, including specific vegetable subgroups (dark green, red and orange, dry beans, and peas) weekly, and fruit is to be offered daily at breakfast and

lunch. In addition, schools can choose to participate in the HealthierUS School Challenge, an incentive program to recognize schools making changes in the school nutrition and physical activity environments.¹⁴ For schools to fully meet specifications for the Gold or Gold with Distinction Awards, they must offer two servings weekly from any of the three vegetable subgroups in addition to those required under the updated school meal patterns; at least three fruits/week must be served fresh. Discussions with school food services directors indicate that daily use of school salad bars make meeting these criteria for the portion size and variety of fruits and vegetables easier.

School salad bars are also an approach commonly used in Farm to School programs, which link local and regional farmers to schools through efforts to source fresh, locally grown food for school meals. Farm to School programs often include experiential learning activities such as school gardens, student visits to farms and farmer visits to schools, and on-site nutrition and culinary education. School salad bars are one way to showcase local products and can be integrated into these experiential learning activities.

Let's Move Salad Bars to Schools

However, in spite of the many benefits, many school districts cannot afford even the modest per-school investment in equipment needed to implement school salad bars. Therefore, in 2010 the National Fruit & Vegetable Alliance, United Fresh Produce Association Foundation, the Food Family Farming Foundation (F3), and Whole Foods Market launched LMSB2S in support of First Lady Michelle Obama's *Let's Move!* initiative. LMSB2S functions to raise awareness of the use of school salad bars as an important part of a comprehensive public health effort to improve child nutrition, and provides resources and support to those implementing school salad bars. The goal of LMSB2S is to place 6000 salad bars in schools over 3 years. As of June, 2012, over 1400 new salad bar units have been delivered to schools across the United States, ultimately benefitting over 700,000 students.

Any K through 12 school district participating in the NSLP is eligible to submit an application at the LMSB2S website (Let's Move Salad Bars to Schools, available at www.saladbars2schools.org/). Schools can apply for a single salad bar package, or a district can submit one application for multiple packages. The application gathers information on the demographics of the district and assesses current practices around provision of fruits and vegetables. Schools that are current HealthierUS School Challenge awardees are given top priority for available funding. Otherwise, schools are prioritized based on the percent of students eligible for free/reduced-cost lunch and commitment to support a salad bar every day in school lunch, as assessed in the application process. An individual salad bar package, which includes the unit, tongs, and other accessories, costs \$2625; this cost is lower than could be found through commercial suppliers due to volume discounts obtained by LMSB2S.

School districts are encouraged to identify funding sources through grassroots fund raising in the school community (such as through Parent-Teacher Associations/Organizations), foundation grants, and programs such as Fuel Up to Play 60. Schools that provide their own funding can still purchase the salad bar units through LMSB2S at the reduced price. LMSB2S also assists in identifying private sector donors for applicant school districts. Corporate donations from Whole Foods Market continue to be a major source of funding for the initiative. In addition, funds are raised through the new Whole Kids Foundation, the corporation's charitable arm devoted to improving children's nutrition and wellness. The majority of other corporate donors, funding anywhere from 1 to 49 salad bars each, are companies in the produce and grocery industry, many of which are members of the United Fresh Produce Association. Foundations have also provided support, and recently Home Box Office (HBO), in promoting the release of the *Weight of the Nation* series, donated 100 salad bars to schools throughout the country. In addition, a few communities, including San Antonio, TX, have used funds from Communities Putting Prevention to Work (CPPW) to provide salad bars to schools.

As of February, 2012, 964 districts from 48 states and the District of Columbia have submitted applications to request 2303 salad bars (unpublished data). Most requests are from districts that had no salad bar at the time they applied (87%). Some of the characteristics of these districts have been summarized based on information provided in the application. In these districts, dark green and orange vegetables are served, on average, only 2.8 times per month and 42% of schools serve fried foods; only 23% serve fruits and vegetables in competitive food sales. Awardee districts will be surveyed again following 1 year of implementation to assess how introduction of school salad bars influences these practices.

The LMSB2S website provides a variety of resources to school districts for successful implementation of school salad bars, including information from the USDA as well as a unique operations manual and a curriculum guide developed by F3 and their Lunch Box Project. Other technical support is provided in conjunction with the National Food Service Management Institute, including a webinar on salad bar operations available on their website (National Food Service Management Institute. Salad Bars in School Nutrition Programs—Webinar, available at www.nfsmi.org/ResourceOverview.aspx?ID=407/). These resources assist school districts in addressing common concerns about salad bar operations, including providing standard operating procedures for staff and educational activities for students to ensure food safety with self-service, strategies for placing the salad bar relative to point-of-sale and monitoring portion size to determine a complete reimbursable meal, and how to manage costs for additional purchases of fruits and vegetables. Salad bar success stories from the media and individual schools are posted on the LMSB2S Facebook site. In addition, recipi-

ent school districts and their salad bar programs are profiled on the *Let's Move!* Blog (Let's Move Blog, available at www.letsmove.gov/blog/).

Partnerships with other nonprofit organizations have been instrumental in promoting LMSB2S. The Association of State & Territorial Public Health Nutrition Directors (ASTPHND) and its National Council of Fruit & Vegetable Nutrition Coordinators, a National Fruit & Vegetable Alliance (NFVA) member, represents a network of state-level public health partners. The Centers for Disease Control and Prevention provides funding to ASTPHND to provide yearly training to fruit and vegetable coordinators and for a mini-grant program to promote salad bars within awardee states. Other school food organizations, including the National Farm to School Network, the School Nutrition Association, the National Food Service Management Institute, School Food FOCUS, and the Culinary Institute of America provide opportunities to inform, and learn from, school child nutrition professionals through webinars, workshops at conferences, and newsletters.

Conclusion

LMSB2S is a model for coalition building across many government, nonprofit, and industry partners to address a major public health challenge. To date, LMSB2S has given more than 700,000 children and adolescents increased access to a variety of fruits and vegetables in school cafeterias. In the words of Rodney Taylor, Nutrition Services Director in the Riverside (CA) Unified School District, "When food is fresh and user-friendly, when the salad bar smiles with colors and varieties, kids don't have to be coerced into eating."¹⁵

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Author Disclosure Statement

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References

1. He FJ, Nowson CA, Lucas M, et al. Increased consumption of fruit and vegetables is related to a reduced risk of coronary heart disease: Meta-analysis of cohort studies. *J Hum Hypertens* 2007;21:717-728.
2. He FJ, Nowson CA, MacGregor GA. Fruit and vegetable consumption and stroke: Meta-analysis of cohort studies. *The Lancet* 2006;367:320-326.

3. Montonen J, Knekt P, Järvinen R, et al. Dietary antioxidant intake and risk of type 2 diabetes. *Diabetes Care* 2004;27:362–366.
4. World Cancer Research Fund, American Institute for Cancer Research. Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective. 2007.
5. Vernarelli JA, Mitchell DC, Hartman TJ, et al. Dietary energy density is associated with body weight status and vegetable intake in U.S. children. *J Nutr* 2011;141:2204–2210.
6. U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary Guidelines for Americans, 2010. U.S. Government Printing Office: Washington, DC, 2010.
7. Florence MD, Asbridge M, Veugelers PJ. Diet quality and academic performance. *J Sch Health* 2008;78:209–215.
8. Kimmons J, Gillespie C, Seymour J, et al. Fruit and vegetable intake among adolescents and adults in the United States: Percentage meeting individualized recommendations. *Medscape J Med* 2009;11:26.
9. White House Task Force on Childhood Obesity. Solving the Problem of Childhood Obesity within a Generation, White House Task Force on Childhood Obesity Report to the President. Washington, DC, May, 2010.
10. Slusser WM, Cumberland WG, Browdy BL, et al. A school salad bar increases frequency of fruit and vegetable consumption among children living in low-income households. *Public Health Nutr* 2007;10:1490–1496.
11. Adams MA, Pelletier RL, Zive MM, et al. Salad bars and fruit and vegetable consumption in elementary schools: A plate waste study. *J Am Diet Assoc* 2005;105:1789–1792.
12. UNC Center for Health Promotion and Disease Prevention Center of Excellence for Training and Research Translation. Riverside Unified School District Farmers' Market Salad Bar Program. University of North Carolina, Chapel Hill: Chapel Hill, NC, 2010.
13. USDA Food and Nutrition Service. Nutrition Standards in the National School Lunch and School Breakfast Programs. *Fed Reg* 2012;77:4088–4167.
14. USDA Food and Nutrition Service. HealthierUS School Challenge Application Criteria, Effective July 1, 2012. Available at http://teamnutrition.usda.gov/HealthierUS/2012criteria_chart.html. Accessed July 3, 2012.
15. Olsen C. Fresh Food Nation. *Mothering* 2007;143:72–79.

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