

Children's Nutrition Education in Federal Programs



What is nutrition education for children?

Nutrition education gets children excited about making healthy food choices, provides children with knowledge and skills for living healthy lives, and creates an environment where healthy choices are the easy choice.^{1,2,3} Through nutrition education children gain experiences cooking, tasting, gardening and learning about food to become empowered to take responsibility for their own wellbeing.^{1,4}

Why does nutrition education matter?

The investment of federal dollars in child nutrition programs can be maximized when access to healthy food (e.g., school meals with strong nutrition standards) are paired with nutrition education. This offers the best opportunity for children to be responsible and informed about their food - synonymous with giving a child a fishing rod along with guidance and hands-on learning experiences to catch lots of fish.



Courtesy of Wellness in the Schools

Even when we know what to eat to be healthy, it's hard, especially for kids. National food intake surveys show that nearly 100% of children ages 4-8 consume too many high fat foods such as fatty meat, full-fat dairy, chips, and fried food and too many high sugar foods such as sweetened beverages and packaged baked goods.⁵ At the same time they eat too few fruits and vegetables. Successful nutrition education programs are proven to change kids' eating habits for the better.

Studies show that nutrition education has multiple benefits for kids, including:

- Decreasing overweight and BMI,^{6,7} which can positively impact health and personal earnings⁸ throughout their lives.
- Increasing how much kids like and eat fruits and vegetables.^{9,10,11,12,13,14,15,16,17,18,19,20,21}
- Improving kids' performance in school.²²



Courtesy of GrowNYC

Examples of combining nutrition education and access to healthy food:



Garden-based Education with Access to Healthy

School gardens give kids fun hands-on experiences with fruits and vegetables, and get kids excited to try the foods that they have grown by themselves. Kids who garden in school are more likely to enjoy fruits and vegetables. Many times foods harvested from school gardens are incorporated into school meals, or the types of vegetables grown in the garden are highlighted on school menus.^{10,11,12,13}

Cooking-based Education with Access to Healthy Food:

Cooking classes can teach kids how to prepare healthy foods they will see in the cafeteria, which makes them more likely to choose those healthy options at lunch.²³ Cooking skills give kids the tools to eat well for a lifetime.



Courtesy of Wellness in the Schools



Smart Cafeteria Design and Tastings with Access to Healthy Food:

Tastings in the cafeteria make healthy eating easy and fun for kids. Offering nutritious foods in a fun, attractive way, such as a salad bar with many different vegetables, creative names for menu items, baskets with fruit, etc., makes healthy choices easier for kids.^{24,3} The more kids have opportunities to taste healthy foods and to try new things, the greater likelihood they will choose and enjoy those foods.^{14,15,16,17,25,9}

Resources and Evidence on Nutrition Education for Children

1. Contento IR. *Nutrition Education: Linking Theory, Research, and Practice*. Sudbury, MA: Jones & Bartlett. 2011.
2. Centers for Disease Control and Prevention. School health guidelines to promote healthy eating and physical activity. *MMWR* 2011;60:1–76.
3. Centers for Disease Control and Prevention and Bridging the Gap Research Program. *Strategies for Creating Supportive School Nutrition Environments, Update for the 2012–13 School Year*. Atlanta, GA: U.S. Department of Health and Human Services; 2014.
4. Roseman MG, Riddell MC, Haynes JN. A Content Analysis of Kindergarten-12th Grade School-based Nutrition Interventions: Taking Advantage of Past Learning. *Journal of Nutrition Education and Behavior*. 2011;43:2-18.
5. Department of Health and Human Services, Office of Disease Prevention and Promotion. *Scientific Report of the 2015 Dietary Guidelines Advisory Committee. Part D. Chapter 1: Food and Nutrient Intakes, and Health: Current Status and Trends*. <http://www.health.gov/dietaryguidelines/2015-scientific-report/06-chapter-1/d1-3.asp>
6. Silveira J, Taddei J, Guerra P, Nobre M. The effect of participation in school-based nutrition education interventions on body mass index: a meta-analysis of randomized controlled community trials. *Preventive Medicine [serial online]*. March 2013;56(3-4):237-243. Available from: MEDLINE, Ipswich, MA. Accessed April 18, 2015.
7. Silveira J, Taddei J, Guerra P, Nobre M. Effectiveness of school-based nutrition education interventions to prevent and reduce excessive weight gain in children and adolescents: a systematic review. *Jornal De Pediatria [serial online]*. September 2011;87(5):382-392. Available from: MEDLINE, Ipswich, MA. Accessed April 18, 2015.
8. Barkin S, Heerman W, Warren M, Rennhoff C. Millennials and the World of Work: The Impact of Obesity on Health and Productivity. *Journal Of Business And Psychology [serial online]*. June 2010;25(2):239-245. Available from: MEDLINE, Ipswich, MA. Accessed June 15, 2015.
9. Wong W, Lakkakula A, Geaghan JP, Zanovec M, Pierce SH, Tuuri G. A Cafeteria-based Tasting Program Improved Elementary School Children's Fruit Preferences and Self-efficacy to Consume Fruits and Vegetables. *Journal of Food Research*. 2012;1(2):139-147.
10. Ratcliffe, MM, Merrigan, KA, Rogers, BL, Goldberg, JP. The Effects of School Garden Experiences on Middle School-Aged Students' Knowledge, Attitudes, and Behaviors Associated with Vegetable Consumption. *Health Promotion Practice*. 2009;1-8. doi: 10.1177/1524839909349182
11. McAleese JD, Rankin LL. Garden-Based Nutrition Education Affects Fruit and Vegetable Consumption in Sixth-Grade Adolescents. *Journal of the American Dietetic Association*. 2007;107:662-665.
12. Wright W and Rowell L. Examining the effect of gardening on vegetable consumption among youth in kindergarten through fifth grade. *Wisconsin Medical Journal*, 2010;109(3):125-129.
13. Langelotto GA, Gupta A. Gardening Increases Vegetable Consumption in School- aged Children: A Meta-analytical Synthesis. *HortTechnology*, 2012;22(4):430-445.
14. Baxter SD and Thompson WO. Fourth-grade children's consumption of fruit and vegetable items available as part of school lunches is closely related to preferences. *Journal of Nutrition Education and Behavior*. 2002;34(3):166-71.
15. Brug J, Tak NI, te Velde SJ, Bere E, de Bourdeaudhuij I. Taste preferences, liking and other factors related to fruit and vegetable intakes among schoolchildren: results from observational studies. *British Journal of Nutrition*. 2008;99(suppl 1):S7–14.
16. Cullen KW, Baranowski T, Owens E, Marsch T, Rittenberry L de Moor C. Availability, Accessibility, and Preferences for Fruit, 100% Fruit Juice, and Vegetables Influence Children's Dietary Behavior. *Health Education and Behavior*. 2003;30(5):615-626.
17. DiNoia J and Byrd-Bredbenner C. Determinants of fruit and vegetable intake in low-income children and adolescents. *Nutrition Reviews*; 2014;72(9):575– 590.
18. Kann, L., Telljohann, S. K., & Wooley, S. F. Health education: results from the School Health Policies and Programs Study 2006. *Journal of School Health*, 2007;77(8):408-434.
19. Prelep M, Slusser W, Thai CL, Kinsler J, Erasquin JT. Effects of a school-based nutrition program diffused throughout a large urban community on attitudes, beliefs, and behaviors related to fruit and vegetable consumption. *J Sch Health*. 2011; 81: 520-529.
20. Prelep M, Kinsler J, Thai C, Erasquin J, Slusser W. Evaluation of a school-based multicomponent nutrition education program to improve young children's fruit and vegetable consumption. *Journal Of Nutrition Education And Behavior [serial online]*. July 2012;44(4):310-318. Available from: MEDLINE, Ipswich, MA. Accessed April 18, 2015.
21. Wall DE, Least C, Gromis J, Lohse B. Nutrition education intervention improves vegetable-related attitude, self-efficacy, preference, and knowledge of fourth-grade students. *J Sch Health*. 2012; 82: 37-43.
22. Pucher, K. K., Boot, N. M. W. M, De Vries, N. K. (2012) School Health Promotion Interventions Targeting Physical Activity and Nutrition can Improve Academic Performance in Primary- and Middle School Children. *Health Education*, 55(5), 372–391.
23. Liquori T, Koch PD, Contento IR, Castle J. The Cookshop Program: Outcome Evaluation of a Nutrition Education Program Linking Lunchroom Food Experience with Classroom Cooking Experiences. *Journal of Nutrition Education*. 1998;30:302-313.
24. Slusser WM, Cumberland WG, Browdy BL, Lange L, Neumann C. A school salad bar increases frequency of fruit and vegetable consumption among children living in low-income households. *Public Health Nutrition*. 2007;10(12), 1490–1496.
25. Gibbs L, Staiger PK, Johnson B, Block K, Macfarlane S, Gold L, Kulas J, Townsend M, Long C, Ukoumunne O. Expanding Children's Food Experiences: The Impact of a School-Based Kitchen Garden Program. *Journal of Nutrition Education and Behavior*. 2013;45:137-146.