



# Smarter Mealtimes for Child Care Settings Scorecard Literature Review

## At least two types of fruit are offered daily.

- [Serving a variety of vegetables and fruit as a snack increased intake in preschool children](#)
  - Roe, L. S., Meengs, J. S., Birch, L. L., & Rolls, B. J. (2013). Serving a variety of vegetables and fruit as a snack increased intake in preschool children. *The American journal of clinical nutrition*, 98(3), 693-699.
- [Increasing consumption of fruits and vegetables in the school cafeteria: the influence of active choice](#)
  - Hakim, S. M. and G. Meissen. (2013) "Increasing Consumption of Fruits and Vegetables in the School Cafeteria: The Influence of Active Choice." *Journal of Health Care for the Poor and Underserved*, 24(2): 145-157.

## At least two types of vegetables are offered daily.

- [Vegetable variety: an effective strategy to increase vegetable choice in children](#)
  - Bucher, T., Siegrist, M., & van der Horst, K. (2014). Vegetable variety: an effective strategy to increase vegetable choice in children. *Public health nutrition*, 17(6), 1232-1236.

## Sliced or cut fruit is available daily.

- [Pre-Sliced Fruit in School Cafeterias: Children's Selection and Intake](#)
  - Wansink, B., Just, D. R., Hanks, A. S., & Smith, L. E. (2013). Pre-sliced fruit in school cafeterias: children's selection and intake. *American journal of preventive medicine*, 44(5), 477-480.
- [Promoting consumption of fruit in elementary school cafeterias. The effects of slicing apples and oranges](#)
  - Swanson, M., Branscum, A., & Nakayima, P. J. (2009). Promoting consumption of fruit in elementary school cafeterias. The effects of slicing apples and oranges. *Appetite*, 53(2), 264-267.

## Fruit is offered in attractive bowls or baskets.

- [How to promote fruit consumption in children. Visual appeal versus restriction](#)
  - Jansen, E., Mulkens, S., & Jansen, A. (2010). How to promote fruit consumption in children. Visual appeal versus restriction. *Appetite*, 54(3), 599-602.

## Fruits and vegetables are offered first and last (in service line or passed twice--first and last-in family-style).

- [Slim by design: serving healthy foods first in buffet lines improves overall meal selection](#)
  - Wansink, B., & Hanks, A. S. (2013). Slim by design: serving healthy foods first in buffet lines improves overall meal selection. *PLoS one*, 8(10), e77055.
- [Healthy convenience: nudging students toward healthier choices in the lunchroom](#)
  - Hanks, A. S., Just, D. R., Smith, L. E., & Wansink, B. (2012). Healthy convenience: nudging students toward healthier choices in the lunchroom. *Journal of Public Health*, fds003.

## Fruits are presented with fun, creative, descriptive names (verbally or labeled).

- [Emerald dragon bites vs veggie beans: Fun food names increase children's consumption of novel healthy foods](#)
  - Musher-Eizenman, D. R., Oehlhof, M. W., Young, K. M., Hauser, J. C., Galliger, C., & Sommer, A. (2011). Emerald dragon bites vs veggie beans: Fun food names increase children's consumption of novel healthy foods. *Journal of Early Childhood Research*, 9(3), 191-195.
- [Feeding strategies derived from behavioral economics and psychology can increase vegetable intake in children as part of a home-based intervention: results of a pilot study](#)



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- Cravener, Terri L., et al. (2015). Feeding strategies derived from behavioral economics and psychology can increase vegetable intake in children as part of a home-based intervention: results of a pilot study. *Journal of the Academy of Nutrition and Dietetics* 115.11 (2015): 1798-1807.

### Vegetables are presented with fun, creative, descriptive names (verbally or labeled).

- [Emerald dragon bites vs veggie beans: Fun food names increase children's consumption of novel healthy foods](#)
  - Musher-Eizenman, D. R., Oehlhof, M. W., Young, K. M., Hauser, J. C., Galliger, C., & Sommer, A. (2011). Emerald dragon bites vs veggie beans: Fun food names increase children's consumption of novel healthy foods. *Journal of Early Childhood Research*, 9(3), 191-195.
- [Feeding strategies derived from behavioral economics and psychology can increase vegetable intake in children as part of a home-based intervention: results of a pilot study](#)
  - Cravener, Terri L., et al. (2015). Feeding strategies derived from behavioral economics and psychology can increase vegetable intake in children as part of a home-based intervention: results of a pilot study. *Journal of the Academy of Nutrition and Dietetics* 115.11 (2015): 1798-1807.
- [Association Between Indulgent Descriptions and Vegetable Consumption: Twisted Carrots and Dynamite Beets](#)
  - Turnwald, B.P., Doles, D.Z., and Crum, A.J. (2017). Association Between Indulgent Descriptions and Vegetable Consumption: Twisted Carrots and Dynamite Beets. *JAMA Internal Medicine*, 177(8), 1216-1218.

### Cut vegetables, when offered, are paired with a low-fat dip such as ranch, hummus, or salsa.

- [Offering "Dip" Promotes Intake of a Moderately-Liked Raw Vegetable among Preschoolers with Genetic Sensitivity to Bitterness](#)
  - Fisher, J. O., Mennella, J. A., Hughes, S. O., Liu, Y., Mendoza, P. M., & Patrick, H. (2012). Offering "dip" promotes intake of a moderately-liked raw vegetable among preschoolers with genetic sensitivity to bitterness. *Journal of the Academy of Nutrition and Dietetics*, 112(2), 235-245.
- [The Addition of a Plain or Herb-Flavored Reduced-Fat Dip Is Associated with Improved Preschoolers' Intake of Vegetables](#)
  - Savage, J. S., Peterson, J., Marini, M., Bordi, P. L., & Birch, L. L. (2013). The addition of a plain or herb-flavored reduced-fat dip is associated with improved preschoolers' intake of vegetables. *Journal of the Academy of Nutrition and Dietetics*, 113(8), 1090-1095.

### Featured entrees are presented with fun, creative, descriptive names (verbally or labeled).

- [What would Batman eat?: priming children to make healthier fast food choices](#)
  - Wansink, B., Shimizu, M., & Camps, G. (2012). What would Batman eat?: priming children to make healthier fast food choices. *Pediatric obesity*, 7(2), 121-123.
- [Emerald dragon bites vs veggie beans: Fun food names increase children's consumption of novel healthy foods](#)
  - Musher-Eizenman, D. R., Oehlhof, M. W., Young, K. M., Hauser, J. C., Galliger, C., & Sommer, A. (2011). Emerald dragon bites vs veggie beans: Fun food names increase children's consumption of novel healthy foods. *Journal of Early Childhood Research*, 9(3), 191-195.
- [Feeding strategies derived from behavioral economics and psychology can increase vegetable intake in children as part of a home-based intervention: results of a pilot study](#)
  - Cravener, Terri L., et al. (2015). Feeding strategies derived from behavioral economics and psychology can increase vegetable intake in children as part of a home-based intervention: results of a pilot study. *Journal of the Academy of Nutrition and Dietetics* 115.11 (2015): 1798-1807.

### Taste tests of fruits, vegetables, and entrees are provided at least annually.

- [Repeated taste exposure increases liking for vegetables by low-income elementary school children](#)
  - Lakkakula, A., Geaghan, J., Zanovec, M., Pierce, S., & Tuuri, G. (2010). Repeated taste exposure increases liking for vegetables by low-income elementary school children. *Appetite*, 55(2), 226-231.
- [A Garden Pilot Project Enhances Fruit and Vegetable Consumption among Children](#)



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- Heim, S., Stang, J., & Ireland, M. (2009). A garden pilot project enhances fruit and vegetable consumption among children. *Journal of the American Dietetic Association*, 109(7), 1220-1226.
- [Parent food purchases as a measure of exposure and preschool-aged children's willingness to identify and taste fruit and vegetables](#)
  - Busick, D. B., Brooks, J., Pernecky, S., Dawson, R., & Petzoldt, J. (2008). Parent food purchases as a measure of exposure and preschool-aged children's willingness to identify and taste fruit and vegetables. *Appetite*, 51(3), 468-473.
- [Factors in the School Cafeteria Influencing Food Choices by High School Students](#)
  - Shannon, C., Story, M., Fulkerson, J. A., & French, S. A. (2002). Factors in the school cafeteria influencing food choices by high school students. *Journal of School Health*, 72(6), 229-234.

**Children are provided opportunities to learn about food and gardening (planting a garden, seed planting, farm tours, nutrition education, etc.).**

- [Determining the motivation of childcare providers to implement instructional gardens as a means of increasing fruit and vegetable consumption among children ages 2 to 5](#)
  - Davis, K. L. (2013). Determining the Motivation of Childcare Providers to Implement Instructional Gardens as a Means of Increasing Fruit and Vegetable Consumption Among Children Ages 2 through 5. *Public health, food studies and nutrition-theses*. Paper 1.
- [A plant to plate pilot: a cold-climate high school garden increased vegetable selection but also waste](#)
  - Wansink, B., Hanks, A. S., & Just, D. R. (2015). A plant to plate pilot: a cold-climate high school garden increased vegetable selection but also waste. *Acta Paediatrica*, 104(8), 823-826.

**Popular characters are used to promote healthy options using labels or stickers.**

- [What would Batman eat?: priming children to make healthier fast food choices](#)
  - Wansink, B., Shimizu, M., & Camps, G. (2012). What would Batman eat?: priming children to make healthier fast food choices. *Pediatric obesity*, 7(2), 121-123.
- [Using brand characters to promote young children's liking of and purchase requests for fruit](#)
  - De Droog, Simone M., Patti M. Valkenburg, and Moniek Buijzen. Using brand characters to promote young children's liking of and purchase requests for fruit. *Journal of Health Communication* 16.1 (2010): 79-89.
- [Influence of licensed characters on children's taste and snack preferences.](#)
  - Roberto, Christina A., et al. (2010). Influence of licensed characters on children's taste and snack preferences. *Pediatrics*, 126(1): 88-93.
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**Meals are offered family-style.**

- [Outcome of a Food Observational Study Among Low-Income Preschool Children Participating in a Family-Style Meal Setting](#)
  - Treviño, R. P., Vasquez, L., Shaw-Ridley, M., Mosley, D., Jechow, K., & Piña, C. (2015). Outcome of a food observational study among low-income preschool children participating in a family-style meal setting. *Health Education & Behavior*, 42(2), 240-248.
- [Head Start and child care providers' motivators, barriers and facilitators to practicing family-style meal service](#)
  - Dev, D. A., Speirs, K. E., McBride, B. A., Donovan, S. M., & Chapman-Novakofski, K. (2014). Head Start and child care providers' motivators, barriers and facilitators to practicing family-style meal service. *Early Childhood Research Quarterly*, 29(4), 649-659.
- [Do children eat less at meals when allowed to serve themselves?](#)
  - Savage, J. S., Haisfield, L., Fisher, J. O., Marini, M., & Birch, L. L. (2012). Do children eat less at meals when allowed to serve themselves?. *The American journal of clinical nutrition*, 96(1), 36-43.



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**Staff role models healthful eating behavior (e.g. Sits at the table with children and eats the same food).**

- [Use of Food Practices by Childcare Staff and the Association with Dietary Intake of Children at Childcare](#)
  - Gubbels, J. S., Gerards, S. M., & Kremers, S. P. (2015). Use of food practices by childcare staff and the association with dietary intake of children at childcare. *Nutrients*, 7(4), 2161-2175.
- [Are Mealtime Best Practice Guidelines for Child Care Centers Associated with Energy, Vegetable, and Fruit Intake?](#)
  - Kharofa, R. Y., Kalkwarf, H. J., Khoury, J. C., & Copeland, K. A. (2016). Are Mealtime Best Practice Guidelines for Child Care Centers Associated with Energy, Vegetable, and Fruit Intake?. *Childhood Obesity*, 12(1), 52-58.
- [Head Start and child care providers' feeding practices: a potential avenue for obesity prevention in young children](#)
  - Dev, D. (2014). *Head Start and child care providers' feeding practices: a potential avenue for obesity prevention in young children* (Doctoral dissertation). University of Illinois at Urbana-Champaign
- [Pre-school manager training: a cost-effective tool to promote nutrition-and health-related practice improvements in the Irish full-day-care pre-school setting](#)
  - Molloy, C. J., Kearney, J., Hayes, N., Slattery, C. G., & Corish, C. (2015). Pre-school manager training: a cost-effective tool to promote nutrition-and health-related practice improvements in the Irish full-day-care pre-school setting. *Public health nutrition*, 18(09), 1554-1564.

**Staff members announce the menu in daily routine.**

- [I don't like it because it eats sprouts: Conditioning preferences in children](#)
  - Field, A. P. (2006). I don't like it because it eats sprouts: Conditioning preferences in children. *Behaviour research and therapy*, 44(3), 439-455.
- [Teachers' Interaction With Children in the School Meal Situation: The Example of Pedagogic Meals in Sweden](#)
  - Osowski, C. P., Göransson, H., & Fjellström, C. (2013). Teachers' interaction with children in the school meal situation: The example of pedagogic meals in Sweden. *Journal of nutrition education and behavior*, 45(5), 420-427.
- [Family and Child-care Provider Influences on Preschool Children's Fruit, Juice, and Vegetable Consumption](#)
  - Nicklas, T. A., Baranowski, T., Baranowski, J. C., Cullen, K., Rittenberry, L., & Olvera, N. (2001). Family and child-care provider influences on preschool children's fruit, juice, and vegetable consumption. *Nutrition reviews*, 59(7), 224-235.

**Attractive, healthful food signage (posters, stickers, or clings) are displayed in the child care environment.**

- [Marketing Vegetables in Elementary School Cafeterias to Increase Uptake](#)
  - Hanks, A. S., Just, D., & Brumberg, A. (2016). Marketing Vegetables in Elementary School Cafeterias to Increase Uptake. *Pediatrics*, e20151720.

[The impact of visual and child-oriented packaging elements versus information on children's purchase influence across various age groups](#)

- Hota, Monali, and Karine Charry. (2014). The impact of visual and child-oriented packaging elements versus information on children's purchase influence across various age groups. *International Journal of Retail & Distribution Management* 42(11/12): 1069-1082.

**A weekly or monthly menu is provided to all families.**

- [Descriptive Menu Labels Effect on Sales](#)
  - Wansink, Brian, James M. Painter, and Koert van Ittersum (2001). Descriptive Menu Labels Effect on Sales. *Cornell Hotel and Restaurant Administrative Quarterly*, 42(6), 68-72.
- [Slim by design: Menu strategies for promoting high-margin, healthy foods](#)



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- Wansink, B., & Love, K. (2014). Slim by design: Menu strategies for promoting high-margin, healthy foods. *International Journal of Hospitality Management*, 42(6), 137-143.

- **How descriptive food names bias sensory perceptions in restaurants**
  - Wansink, B., Van Ittersum, K., & Painter, J. E. (2005). How descriptive food names bias sensory perceptions in restaurants. *Food quality and preference*, 16(5), 393-400.
- **Randomized intervention to increase children's selection of low-fat foods in school lunches**
  - Whitaker, R. C., Wright, J. A., Koepsell, T. D., Finch, A. J., & Psaty, B. M. (1994). Randomized intervention to increase children's selection of low-fat foods in school lunches. *The Journal of pediatrics*, 125(4), 535-540.

## Children are involved with mealtime set-up and clean-up routine.

- **Nutrition socialization experiences of children in the Head Start program**
  - Gable, S., & Lutz, S. (2001). Nutrition socialization experiences of children in the Head Start program. *Journal of the American Dietetic Association*, 101(5), 572-577.

## All lights in the eating area work and are turned on.

- **Shining Light on Atmospherics: How Ambient Light Influences Food Choices**
  - Biswas, D., Szoca, C., Wansink, B., & Chacko, R. (2016). Shining Light on Atmospherics: How Ambient Light Influences Food Choices. *Journal of Marketing Research*. 54(1), 111-123.
- **Effect of ambience on food intake and food choice**
  - Stroebele, N., & De Castro, J. M. (2004). Effect of ambience on food intake and food choice. *Nutrition*, 20(9), 821-838.
- **Clutter, Chaos, and Overconsumption The Role of Mind-Set in Stressful and Chaotic Food Environments**
  - Vartanian, L. R., Kernan, K. M., & Wansink, B. (2016). Clutter, Chaos, and Overconsumption The Role of Mind-Set in Stressful and Chaotic Food Environments. *Environment and Behavior*. 49(2), 215-223.

## Children and families are asked to provide feedback on the foods served to inform menu development.

- **Improving the School Food Environment: Results from a Pilot Study in Middle Schools**
  - Cullen, K. W., Hartstein, J., Reynolds, K. D., Vu, M., Resnicow, K., Greene, N., ... & Studies to Treat or Prevent Pediatric Type 2 Diabetes Prevention Study Group. (2007). Improving the school food environment: results from a pilot study in middle schools. *Journal of the American Dietetic Association*, 107(3), 484-489.
- **"How Can We Stay Healthy when you're Throwing All of this in Front of Us?" Findings from Focus Groups and Interviews in Middle Schools on Environmental Influences on Nutrition and Physical Activity**
  - Bauer, K. W., Yang, Y. W., & Austin, S. B. (2004). "How can we stay healthy when you're throwing all of this in front of us?" Findings from focus groups and interviews in middle schools on environmental influences on nutrition and physical activity. *Health Education & Behavior*, 31(1), 34-46.
- **Factors Influencing Food Choices of Adolescents: Findings from Focus-Group Discussions with Adolescents**
  - Neumark-Sztainer, D., Story, M., Perry, C., & Casey, M. A. (1999). Factors influencing food choices of adolescents: findings from focus-group discussions with adolescents. *Journal of the American dietetic association*, 99(8), 929-937.
- **Involving students in learning and health promotion processes - clarifying why? what? and how?**
  - Jensen, B. B., & Simovska, V. (2005). Involving students in learning and health promotion processes-clarifying why? what? and how?. *Promotion & Education*, 12(3-4), 150-156.
- **Dietary Intake by Dutch 1-to 3-Year-Old Children at Childcare and at Home**
  - Gubbels, J. S., Raaijmakers, L. G., Gerards, S. M., & Kremers, S. P. (2014). Dietary intake by Dutch 1-to 3-year-old children at childcare and at home. *Nutrients*, 6(1), 304-318.