

## Promising Strategies to Increase Student Participation in School Meals

Issue Brief, November 2022

### Key Takeaways:

- School meals play a critical role in promoting child nutrition and equity. Evidence-based strategies can increase student participation in school meals while strengthening school food service finances.
- There is strong evidence that alternative breakfast models, such as breakfast in the classroom or grab-and-go breakfast, and restrictions on competitive foods can increase school meal participation.
- Additional rigorous evaluation is needed to identify other strategies to promote school meal participation, including school-based interventions and local and state policies.



### Introduction

The U.S. Department of Agriculture (USDA) National School Lunch Program (NSLP) and School Breakfast Program (SBP) play a critical role in feeding children. The Healthy, Hunger-Free Kids Act of 2010 (HHFKA) strengthened nutrition standards for school meals and led to decreased risk of obesity among children living in poverty.<sup>1</sup> Meals served in school are generally of better nutritional quality than those that students bring from home and have been linked to improved academic performance and household food security.<sup>2-5</sup> Prior to the COVID-19 pandemic, nearly 15 million breakfasts and 30 million lunches were served daily through the SBP and NSLP.<sup>6</sup> During the pandemic, schools were granted emergency authorization to offer meals for free to all students.<sup>7</sup>

Although nearly half of all U.S. public school children are eligible for free or reduced-price meals based on household income, participation in both school breakfast and lunch are remarkably low.<sup>3</sup> According to the most recent data, in school year 2014-2015, only 37% of students eligible for free

or reduced-price meals participated in breakfast, and 78% participated in lunch.<sup>3</sup> Barriers to participation in school meals include stigma associated with receiving a subsidized meal, unappealing menu offerings, and confusion among families regarding eligibility for free or reduced-price meals.<sup>3,8-10</sup>

Through the Community Eligibility Provision (CEP) of the NSLP, schools in high-poverty areas can offer universal free meals—or free meals to all students regardless of individual household income. Emerging evidence suggests that universal free meals lead to improvements in student nutrition, behavior, and academic outcomes.<sup>11,12</sup> A prior systematic review also found strong evidence that universal free meals increase school meal participation.<sup>12</sup> Despite these benefits, approximately one-third of schools eligible for CEP have not opted in, often citing financial concerns.<sup>13-15</sup> Because meal reimbursement rates for CEP schools are tied directly to student meal participation rates, maintaining high rates of meal participation is critical to making CEP financially feasible for many schools.

To pave the way for more eligible schools to offer universal free meals through CEP, as well as to increase school meal participation more broadly, a better understanding of strategies that schools, districts, and states can use to increase participation rates is needed. The aim of this research brief is to highlight and summarize rigorous evidence on strategies that increase participation in school meals. These strategies have been shown to drive meaningful improvements in participation, require minimal funding, and are a low burden to implement, making them feasible strategies for school districts or states seeking to increase access to school meals.

The information in this brief is drawn from “Strategies Associated with Increased Student Participation in School Meals: A Systematic Review,” currently under review. The review examined peer-reviewed and government studies published through January 2022 on modifiable factors

associated with school meal participation. The approaches examined include changes at the school meal level (e.g., changes to menu options and taste tests); cafeteria environment level (e.g., alternate breakfast models, meal period length, changes to the cafeteria environment); and policy level (e.g., restrictions on competitive foods, nutrition standards, wellness policies). Studies focused on universal free meals were not included in the review, as these were summarized in a recent systematic review, which found strong evidence that universal free meals are associated with increased meal participation (see Box 1).<sup>12</sup> Studies were rated for risk of bias based on study design and analysis; studies with a low risk of bias were considered “high-quality.” Only strategies supported by more than one high-quality study are discussed below. The findings from this brief can be used to inform the development of policies and practices to increase access to healthy school meals for children.

#### **Box1: Universal free meals**

A prior systematic review found that there is strong evidence that universal free meals increase school meal participation.<sup>12</sup> Eligible schools can opt into a federal meal provision — such as CEP or Provision 1 or 2 — to offer free meals to all students. Some municipalities have also implemented districtwide free meals initiatives using local funding.<sup>16–18</sup> During the COVID-19 pandemic, the USDA granted emergency authorization to schools to offer universal free meals.<sup>7</sup> The nationwide emergency authorization expired in September 2022, but several states, including California, Maine, Massachusetts, Nevada, and Vermont, have passed recent legislation to continue funding for universal free meals.<sup>19</sup>



## The Evidence

### Promising Strategies to Increase School Meal Participation

These approaches were associated with significantly increased meal participation:

- **Alternative breakfast models.** Alternative breakfast models such as breakfast in the classroom, breakfast after the bell, and grab-and-go meals provide additional opportunities for students to eat after the school day begins. All 10 high-quality studies that evaluated alternative breakfast models found they were positively associated with school breakfast participation. Alternative breakfast models are designed to address factors that students commonly cite as barriers to breakfast participation: finding school breakfast inconvenient and having insufficient time to eat.<sup>3,20,21</sup> Traditionally, schools serve breakfast in the cafeteria before the school day begins, making it challenging to access for students who ride the bus to school or are otherwise unable to arrive at school early. By incorporating school breakfast into the school day, alternative breakfast programs also aim to alleviate stigma associated with meal participation.
- **Restrictions on competitive food sales (also known as Smart Snacks).** Competitive foods (i.e., foods served in vending machines, student stores, snack bars, and à la carte in the cafeteria) may draw students away from the school meal program. All six high-quality studies that examined restrictions on competitive food sales found a positive association with meal participation. These restrictions may also promote equity by eliminating foods that are inaccessible to many children from households with low incomes.<sup>22</sup> Competitive food sales are important for food service revenue, making some schools hesitant to introduce restrictions. Evidence suggests, however, that lost competitive food revenue may be offset over time by gains in revenue from increased school meal sales.<sup>23–26</sup>

#### Resources for alternative breakfast models.

Nonprofit and advocacy organizations promoting school meal participation have developed toolkits and other resources for schools implementing alternative breakfast models. For example, a Food Research & Action Center [fact sheet](#), which describes various alternative breakfast models and highlights relative benefits and implementation considerations, and [a website](#) from No Kid Hungry, which includes checklists for schools implementing alternative breakfast models.

### What We Still Need to Know

Other policies and interventions may shape meal participation rates but currently lack sufficient evidence to support their use. Each of these strategies has been hypothesized to be linked to meal participation but was the focus of only one or no high-quality studies, thus additional research in each of these areas is warranted.

- **Strategies that affect palatability of the school meal.** Students frequently cite disliking the taste of the school meal as a top reason for nonparticipation.<sup>3</sup>
  - *Modifying the menu.* Changing which menu items are offered (e.g., farm-to-school fresh produce) or how menu items are served (e.g., at salad bars) or packaged (e.g., milk in resealable plastic bottles versus cartons) may help draw in students who previously found school meals unappealing.
  - *Offering taste tests.* Food service staff may be able to identify menu options that appeal more to students and increase student familiarity with new offerings by conducting taste tests.
- **Strategies that make school meals more convenient.** Students frequently report finding school meals inconvenient and not having sufficient time to eat as top reasons for nonparticipation.<sup>3,20,21</sup>
  - *Extending the meal period length.* Making the meal period longer (i.e., 25–30 minutes rather than 20 minutes or less) may help ensure that students have sufficient time to eat.
  - *Changes to the cafeteria environment.* Adding more points of sale in the cafeteria may shorten lines and wait times. Behavioral nudge strategies such as displaying fruit in colorful bowls and serving pre-cut fruit and sandwiches in convenient, portable containers may also make school meals more convenient and enticing.
- **Strategies that promote school meals.** Strategies such as nutrition education and marketing that normalize participation in school meals or emphasize the importance of eating healthy meals may reduce stigma and improve attitudes toward school meals.

- **Strategies to increase enrollment in free and reduced-price meals.** Enrolling more students in free and reduced-price meals may reduce or eliminate financial barriers to meal participation.
  - *Promoting the free and reduced-price meal application.* Offering the free and reduced-price meal application form online and in multiple languages and conducting outreach to parents about eligibility may increase enrollment.<sup>27</sup>
  - *Improving direct certification systems.* States use direct certification to identify students as eligible for free meals based on existing administrative data from other means-tested programs (e.g., Supplemental Nutrition Assistance Program, Temporary Assistance for Needy Families). States could improve the accuracy of their direct certification systems, which in 2017 failed to identify, on average, 8% of children directly eligible for free meals.<sup>28</sup>
- **Other local, state, and federal policies.** Policies at local, state, and federal levels may directly or indirectly increase meal participation.
  - *Local wellness policies.* School districts are required to put wellness policies into place to establish student nutrition goals and guidelines for food sold on campus during the school day.<sup>29</sup>
  - *State or local policies that address “meal shaming.”* Policies that prohibit schools from overtly identifying children with unpaid meal debt (or “meal shaming”) may make students more comfortable participating in school meals.<sup>30</sup>

## Policy and Practice Implications

The current evidence suggests that there are several actions schools can take to improve school meal participation:

- **Implement alternative breakfast models.** Schools should consider offering breakfast in the classroom, after school starts, or through grab-and-go stations. These strategies not only increase participation in meals but may also help destigmatize meal participation. Practical guidance for administrators seeking to implement alternative breakfast models is widely available.
- **Restrict sales of Smart Snacks, also known as competitive foods.** Policies at the school, district, state, or federal level that limit access to smart snacks, often called competitive foods because they compete with sales of the more nutritious reimbursable school meals, have the potential to drive up meal participation rates. Schools could consider incorporating restrictions on these foods and beverages in their wellness policies.

- **Implement evidence-based strategies to increase school meal consumption.** Increasing participation is only the first step toward improving students’ diets. Schools should, in parallel, pursue [evidence-based strategies to increase school meal consumption](#), including providing more choices for students on the lunch line, scheduling longer lunch periods and recess before lunch, pre-slicing fruits, and making menu offerings more palatable.<sup>31</sup>

Policymakers can also contribute to improved school meal participation by:

- **Maintaining or strengthening the Healthy, Hunger-Free Kids Act of 2010.** The HHFKA directed USDA to update nutrition standards for school meals, aligning these programs with science-based recommendations from the National Academy of Medicine and the 2010 Dietary Guidelines for Americans. Some states have also implemented their own school meal nutrition standards that go beyond the federal requirements. While some critics were concerned that stronger standards would make meals more challenging for schools to prepare and less appealing to students, there is promising evidence that stronger nutrition standards have either no effect or a positive effect on school meal participation, while also producing meaningful improvements in diet quality and obesity trends. As Congress considers the reauthorization of the Child Nutrition Act, policymakers should avoid attempts to weaken existing standards and instead push for stronger regulations that align with the latest Dietary Guidelines for Americans, including stronger standards for sodium and limits on added sugars.
- **Expanding access to universal free school meals.** Universal free school meals boost school meal participation and may also improve student diet quality, food security, and academic performance.<sup>12</sup> The COVID-19 pandemic shone a critical light on child food insecurity and the important role of school meals in feeding children. Congress authorized the USDA to grant waivers to schools to serve universal free meals between March 2020 and September 2022.<sup>7</sup> This period demonstrated to schools not previously serving universal free meals that they could successfully deliver enough meals to feed all students and highlighted for families and educators the many benefits of universal free meals. Moving forward, policymakers at the federal and state level should consider passing legislation to establish universal free meals. Some states, including California, Maine, Massachusetts, Nevada, and Vermont, have already taken this step.<sup>19</sup> Other states have begun to cover the cost of reduced-price meals, an incremental step toward universal free meals.<sup>32</sup> As part of Child Nutrition Reauthorization, federal lawmakers could also expand access to CEP by increasing reimbursement rates for participating schools and broadening eligibility criteria.

## Conclusions

The Healthy, Hunger-Free Kids Act of 2010 led to critical improvements in the quality of meals served in schools.<sup>2,3</sup> To ensure that all students benefit from healthier school meals, action is needed to drive participation. Schools that have adopted or are considering adopting CEP may especially benefit from using evidence-based strategies to boost participation. There is strong evidence to support two low-burden strategies to increase participation: offering alternative breakfast models and restricting competitive food sales. More rigorous evaluation of other strategies to increase participation, including school and cafeteria-level interventions and local, state, and federal policies is needed.

## Suggested Citation

Hecht AA, Olarte DA, McLoughlin GM, Cohen JFW. Promising Strategies to Increase Student Participation in School Meals. Durham, NC: Healthy Eating Research; 2022. Available at: <https://healthyeatingresearch.org>.

This brief summarizes findings from: Hecht AA, Olarte DA, McLoughlin GM, Cohen JFW. Strategies to Increase Student Participation in School Meals: A Systematic Review (article currently under review).



## References

1. Kenney EL, Barrett JL, Bleich SN, Ward ZJ, Craddock AL, Gortmaker SL. Impact Of The Healthy, Hunger-Free Kids Act On Obesity Trends. *Health Affairs*. 2020;39(7):1122-1129. doi:10.1377/hlthaff.2020.00133
2. Liu J, Micha R, Li Y, Mozaffarian D. Trends in Food Sources and Diet Quality Among US Children and Adults, 2003-2018. *JAMA Netw Open*. 2021;4(4):e215262. doi:10.1001/jamanetworkopen.2021.5262
3. Fox MK, Gearan E. School Nutrition and Meal Cost Study. Volume 4: Student Participation, Satisfaction, Plate Waste, and Dietary Intakes.; 2019. Accessed November 14, 2019. <https://www.fns.usda.gov/school-nutrition-and-meal-cost-study>
4. Huang J, Barnidge E. Low-Income Children's Participation in the National School Lunch Program and Household Food Insecurity. *Social Science & Medicine*. 2016;150:8-14. doi:10.1016/j.socscimed.2015.12.020
5. Frisvold DE. Nutrition and Cognitive Achievement: An Evaluation of the School Breakfast Program. *Journal of Public Economics*. 2015;124:91-104. doi:10.1016/j.jpubeco.2014.12.003
6. United States Department of Agriculture, Food and Nutrition Service. Child Nutrition Tables: National Level Annual Summary Tables: FY 1969-2021. Accessed April 21, 2022. <https://www.fns.usda.gov/pd/child-nutrition-tables>
7. United States Department of Agriculture. Child Nutrition COVID-19 Waivers. Published online 2020. Accessed November 20, 2020. <https://www.fns.usda.gov/programs/fns-disaster-assistance/fns-responds-covid-19/child-nutrition-covid-19-waivers>
8. Moore Q, Hulsey L, Ponza M. Factors Associated with School Meal Participation and the Relationship Between Different Participation Measures--Final Report.; 2009:173.
9. Poppendieck J. Free for All: Fixing School Food in America. 1st ed.; 2010. Accessed August 19, 2019. <https://www.jstor.org/stable/10.1525/j.ctt1pn8qf>
10. Mirtcheva DM, Powell LM. Participation in the National School Lunch Program: Importance of School-Level and Neighborhood Contextual Factors. *J Sch Health*. 2009;79(10):485-494. doi:10.1111/j.1746-1561.2009.00438.x
11. Hecht AA, Pollack Porter KM, Turner L. Impact of The Community Eligibility Provision of the Healthy, Hunger-Free Kids Act on Student Nutrition, Behavior, and Academic Outcomes: 2011-2019. *Am J Public Health*. 2020;110(9):1405-1410. doi:10.2105/AJPH.2020.305743
12. Cohen JFW, Hecht AA, McLoughlin GM, Turner L, Schwartz MB. Universal School Meals and Associations With Student Participation, Attendance, Academic Performance, Diet Quality, Food Security, and Body Mass Index: A Systematic Review. *Nutrients*. 2021;13(3):911. doi:10.3390/nu13030911
13. Hecht AA, Neff RA, Kelley TL, Pollack Porter KM. Universal Free School Meals Through the Community Eligibility Provision: Maryland Food Service Provider Perspectives. *Journal of Agriculture, Food Systems, and Community Development*. 2021;10(2):529-550-529-550. doi:10.5304/jafscd.2021.102.033
14. United States Department of Agriculture, Food and Nutrition Service. USDA Community Eligibility Provision Characteristics Study, SY 2016-17.; 2022. Accessed April 21, 2022. <https://www.fns.usda.gov/cn/usda-cep-characteristics-study-sy-2016-17>
15. Food Research and Action Center. Community Eligibility: The Key to Hunger-Free Schools School Year 2020-2021. Food Research & Action Center. Accessed July 23, 2021. <https://frac.org/research/resource-library/community-eligibility-the-key-to-hunger-free-schools-school-year-2020-2021>

16. Leos-Urbel J, Schwartz AE, Weinstein M, Corcoran S. Not Just for Poor Kids: The Impact of Universal Free School Breakfast on Meal Participation and Student Outcomes. *Econ Educ Rev.* 2013;36:88-107. doi:10.1016/j.econedurev.2013.06.007
17. Schwartz A, Rothbart M. Let Them Eat Lunch: The Impact of Universal Free Meals on Student Performance.; 2017. <https://surface.syr.edu/cpr/235>
18. Bartfeld JS, Berger L, Men F, Chen Y. Access to the School Breakfast Program Is Associated with Higher Attendance and Test Scores among Elementary School Students. *J Nutr.* 2019;149(2):336-343. doi:10.1093/jn/nxy267
19. Economou R. States Step in as End of Free School Meal Waivers Looms. National Conference of State Legislatures. Published July 29, 2022. Accessed October 16, 2022. <https://www.ncsl.org/research/human-services/states-step-in-as-end-of-free-school-meal-waivers-looms-magazine2022.aspx>
20. Hearst MO, Shanafelt A, Wang Q, Leduc R, Nanney MS. Barriers, Benefits and Behaviors Related to Breakfast Consumption Among Rural Adolescents. *J Sch Health.* 2016;86(3):187-194. doi:10.1111/josh.12367
21. Grannon KY, Nanney MS, Wang Q, et al. Do Rural High School Students Participate in Second Chance Breakfast Programs? *J Sch Health.* 2020;90(2):119-126. doi:10.1111/josh.12857
22. Bhatia R, Jones P, Reicker Z. Competitive Foods, Discrimination, and Participation in the National School Lunch Program. *Am J Public Health.* 2011;101(8):1380-1386. doi:10.2105/AJPH.2011.300134
23. Cohen JFW, Gorski MT, Hoffman JA, et al. Healthier Standards for School Meals and Snacks. *Am J Prev Med.* 2016;51(4):485-492. doi:10.1016/j.amepre.2016.02.031
24. Probart C, McDonnell E, Hartman T, Weirich JE, Bailey-Davis L. Factors Associated with the Offering and Sale of Competitive Foods and School Lunch Participation. *Journal of the American Dietetic Association.* 2006;106(2):242-247. doi:10.1016/j.jada.2005.10.031
25. Peterson C. Competitive Foods Sales Are Associated with a Negative Effect on School Finances. *Journal of the American Dietetic Association.* 2011;111(6):851-857. doi:10.1016/j.jada.2011.03.021
26. Wharton CM, Long M, Schwartz MB. Changing Nutrition Standards in Schools: The Emerging Impact on School Revenue. *J Sch Health.* 2008;78(5):245-251. doi:10.1111/j.1746-1561.2008.00296.x
27. Food Research and Action Center. Strategies to Increase Applications for School Meals Toolkit. Accessed August 28, 2022. [https://frac.org/wp-content/uploads/FRAC\\_SchoolMealsToolkit\\_Jan2021.pdf](https://frac.org/wp-content/uploads/FRAC_SchoolMealsToolkit_Jan2021.pdf)
28. United States Department of Agriculture. Direct Certification in the National School Lunch Program Report to Congress: State Implementation Progress, School Year 2015-2016 and 2016-2017.; 2018. Accessed October 1, 2019. <https://fns-prod.azureedge.net/sites/default/files/resource-files/NSLPDirectCertification2016.pdf>
29. United States Department of Agriculture. Local School Wellness Policy Implementation Under the Healthy, Hunger-Free Kids Act of 2010.; 2016. Accessed May 28, 2022. <https://www.federalregister.gov/documents/2016/07/29/2016-17230/local-school-wellness-policy-implementation-under-the-healthy-hunger-free-kids-act-of-2010>
30. American University School of Education. What Is Lunch Shaming? How Accessibility to Lunch Impacts Student Learning. Accessed August 28, 2022. <https://soeonline.american.edu/blog/what-is-lunch-shaming/>
31. Cohen JFW, Hecht AA, Hager ER, Turner L, Burkholder K, Schwartz MB. Strategies to Improve School Meal Consumption: A Systematic Review. *Nutrients.* 2021;13(10):3520. doi:10.3390/nu13103520
32. School Meals Legislation and Funding by State. Food Research & Action Center; 2022. <https://frac.org/wp-content/uploads/School-Meals-State-Legislation-Chart.pdf>

### About Healthy Eating Research

*Healthy Eating Research* (HER) is a national program of the Robert Wood Johnson Foundation. Technical assistance and direction are provided by Duke University under the direction of Mary Story PhD, RD, program director, and Megan Lott, MPH, RDN, deputy director. HER supports research to identify, analyze, and evaluate environmental and policy strategies that can promote healthy eating among children and prevent childhood obesity. Special emphasis is given to research projects that benefit children and adolescents and their families, especially among lower-income and racial and ethnic minority population groups that are at highest risk for poor health and well-being and nutrition related health disparities. For more information, visit [www.healthyeatingresearch.org](http://www.healthyeatingresearch.org) or follow HER on Twitter at [@HERResearch](https://twitter.com/HERResearch).

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