Research Shows that the School Nutrition Standards Improve the School Nutrition Environment and Student Outcomes

FRAC Food Research & Action Center

January 2016

The Healthy, Hunger-Free Kids Act of 2010 created a process for enhancing the quality of all food and beverages served and sold in schools by empowering the U.S. Department of Agriculture (USDA) to set new nutrition standards both for school meals and for "competitive foods."* There is overwhelming evidence that the new standards for school meals are working. Administrative and public opinion data indicate that the standards are being successfully implemented and are supported across the nation.† In addition, a number of research studies have examined the impact of the relatively new school meal nutrition standards on school food offerings, school meal disparities, and student nutrition-related outcomes. The studies find many positive results, as demonstrated in this brief. (*†See notes on page 4)

School Nutrition Standards Improve the Food Offered in Schools

- According to Bridging the Gap research using nationally representative data, elementary schools have significantly improved the quality of school lunches since the new nutrition standards were implemented.[1] For instance, all elementary schools have either increased or maintained the amount and variety of fruits and vegetables served at lunch. In addition, more schools are regularly offering healthier lunch items (e.g., whole grains, fresh fruit), and fewer schools have unhealthy lunch items available (e.g., fried potatoes, higher fat milk).

CONTINUED

- The Centers for Disease Control and Prevention released national survey findings indicating that there have been a number of positive changes to school meals since the implementation of the new school nutrition standards.[2] For example, significantly more schools offered at least two different non-fried vegetables at lunch each day (79 percent of schools in 2014 compared to 62 percent in 2000). Significantly more schools also reported always or almost always engaging in practices that reduce the sodium content of school meals (e.g., using other seasonings instead of salt).
- Based on national data on 792 middle schools and 751 high schools participating in the National School Lunch Program (NSLP), significantly more U.S. secondary students attend schools offering healthier school lunches since the implementation of the new school nutrition standards.[3] More specifically, there was a significant increase in the proportion of middle school students attending schools that offered non-fat milk and whole grains every day, and a significant increase in the proportion of high school students attending schools that offered whole grains, fruits, and vegetables every day. And at both the middle and high school levels, significantly more students attended schools that did not offer candy and regular-fat snacks or higher fat milk.
- While school meals have improved in quality under the new standards, packed lunches brought from home continue to have lower nutritional quality than school lunches and do not meet school nutrition standards.[4,5] For example, packed lunches brought from home by pre-kindergarten and kindergarten students had more calories, fat, saturated fat, and sugar than school lunches, and less protein, fiber, vitamin A, and calcium, according to a study conducted after implementation of the new school meal nutrition standards in three rural Virginia schools.[6]

School Nutrition Standards Reduce School Meal Disparities

- Some prior school nutrition disparities have been reduced or eliminated since the implementation of the new school nutrition standards, based on national data on 792 middle schools and 751 high schools participating in the NSLP.[7] In the 2010 – 2011 school year (prior to the implementation of the standards), students attending predominantly white schools and larger schools had significantly greater availability of some nutritious items. Most of these disparities were eliminated or reduced in the 2012 – 2013 school year (after implementation of the standards), as schools with higher percentages of minority students and smaller schools had increased their nutritious food availability. The authors of the study concluded that "meaningful improvements have been made in the nutritional content of NSLP meals offered to U.S. secondary students; these improvements have reduced prior NSLP meal disparities associated with school characteristics, particularly school size and student body race-ethnicity."

School Nutrition Standards Improve Student Nutrition-Related Outcomes

National Studies

- A study using national data found that offering fruits and vegetables wherever foods were sold, only offering fat-free or low-fat milk, and having a greater number of nutrition environment improvements were associated with lower odds of overweight/obesity among high school students. This suggests favorable impacts on weight outcomes for students across the country with the full implementation of the new school meal and competitive food nutrition standards.[8]

CONTINUED

- According to a national study of elementary school personnel by Bridging the Gap, most students have accepted the changes to school lunches since the implementation of the revised USDA school meals nutrition standards.[9] School personnel at elementary schools serving a higher proportion of students eligible for free and reduced-price lunch also perceived increases in lunch purchases and consumption. Generally positive student reactions also were observed among middle and high school students in another Bridging the Gap national report. [10]

School District Studies

- Researchers examined the impact of the new fruit and vegetable nutrition standards for the NSLP in a pilot study of elementary and intermediate schools in one Houston area district in the fall of 2011. The standards positively impacted students' fruit and vegetable selection and consumption.
- Vegetable consumption and fruit selection both significantly increased at lunch after implementation of the standards among elementary and middle school children in an urban, low-income school district of Massachusetts.[12] In addition, food waste did not increase in the district under the new standards.
- Based on a study of 7,200 middle and high school students in a diverse, urban Washington State school district, the school foods selected by students were more nutrient dense and had fewer calories per gram after implementation of the new standards.[13] The study also found that school meal participation did not significantly change after implementation.
- Researchers observed students eating reimbursable NSLP meals at eight elementary schools in one southeast Texas school district before and after implementation of the new school meal patterns.[14] Significantly more students selected fruit, 100 percent fruit juice, other vegetables (e.g., green beans, celery), total grains, whole grains, protein foods (e.g., meat, poultry, cheese), and milk after implementation, and significantly fewer selected starchy vegetables. Among students selecting them, students also consumed significantly greater amounts of "total fruit plus 100 percent fruit juice" and red-orange vegetables. The study found no differences in food waste for fruit, whole grains, and most vegetables.
- A study in an urban, low-income school district in Connecticut found significant increases in fruit selection at lunch after the standards went into effect.[15] In addition, among students selecting vegetables, they consumed significantly more of the serving and threw less away after implementation of the standards. A similar pattern was observed for entrees. The authors concluded that "overall, the revised meal standards and policies appear to have significantly lowered plate waste in school cafeterias."

For more information on the school nutrition standards, visit FRAC's website at www.frac.org.

This brief was prepared by FRAC's Heather Hartline-Grafton, DrPH, RD, Senior Nutrition Policy and Research Analyst.

Notes

* USDA issued the final rule on school meal nutrition standards in January 2012. That rule governing federally-funded breakfasts and lunches is intended to revise the meal patterns and nutrition requirements to achieve consistency with the Dietary Guidelines for Americans. Overall, the rule requires schools to offer more fruits, vegetables, and whole grain-rich foods; offer only fat-free or low-fat (1 percent) fluid milk; limit saturated fat and sodium; minimize trans fat; and limit the calories that can be offered in a meal. The lunch standards began to take effect in the 2012 – 2013 school year; the breakfast standards began to take effect in the 2013 – 2014 school year. The new competitive foods standards rule, known as the Smart Snacks in School rule, is a separate initiative governing foods provided or sold in schools (e.g., vending machines, food sold in competition with federal meals) other than those from the federal nutrition programs. It was issued by USDA in June 2013 and began to take effect in the 2014 – 2015 school year. In general, these standards promote whole grains, low-fat dairy, fruits, vegetables, and leaner protein, while limiting the calories, fat, sugar, and sodium of items.

† For more information, see FRAC's "New Studies Continue to Report that Parents, Students, Schools, and Health Research All Support the New Federal School Nutrition Standards" at www.frac.org.

References

1 Turner, L., & Chaloupka, F. J. (2015). *Improvements in School Lunches Result in Healthier Options for Millions of U.S. Children: Results from Public Elementary Schools between 2006 – 07 and 2013 – 14 - A BTG Research Brief.* Chicago, IL: Bridging the Gap Program, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago.

2 Merlo, C., Brener, N., Kann, L., McManus, T., Harris, D., & Mugavero, K. (2015). School-level practices to increase availability of fruits, vegetables, and whole grains, and reduce sodium in school meals – United States, 2000, 2006, and 2014. *Morbidity and Mortality Weekly Report,* 64(33), 905-908.

3 Terry-McElrath, Y. M., O'Malley, P. M., & Johnston, L. D. (2015). Foods and beverages offered in US public secondary schools through the National School Lunch Program from 2011 – 2013: early evidence of improved nutrition and reduced disparities. *Preventive Medicine,* 78, 52-58.

4 Caruso, M. L., & Cullen, K. W. (2015). Quality and cost of student lunches brought from home. *JAMA Pediatrics,* 169(1), 86-90.

5 Farris, A. R., Misyak, S., Duffey, K. J., Davis, G. C., Hosig, K., Atzaba-Poria, N., McFerren, M. M., & Serrano, E. L. (2014). Nutritional comparison of packed and school lunches in pre-kindergarten and kindergarten children following the implementation of the 2012 – 2013 National School Lunch Program standards. *Journal of Nutrition Education and Behavior,* 46(6), 621-626.

6 Farris, A. R., Misyak, S., Duffey, K. J., Davis, G. C., Hosig, K., Atzaba-Poria, N., McFerren, M. M., & Serrano, E. L. (2014). Nutritional comparison of packed and school lunches in pre-kindergarten and kindergarten children following the implementation of the 2012 – 2013 National School Lunch Program standards. *Journal of Nutrition Education and Behavior,* 46(6), 621-626.

7 Terry-McElrath, Y. M., O'Malley, P. M., & Johnston, L. D. (2015). Foods and beverages offered in US public secondary schools through the National School Lunch Program from 2011 – 2013: early evidence of improved nutrition and reduced disparities. *Preventive Medicine,* 78, 52-58.

8 Terry-McElrath, Y. M., O'Malley, P. M., & Johnston, L. D. (2015). Potential impact of national school nutritional environment policies: cross-sectional associations with US secondary student overweight/obesity, 2008 – 2012. *JAMA Pediatrics,* 169(1), 78-85.

9 Turner, L., & Chaloupka, F. J. (2014). Perceived reactions of elementary school students to changes in school lunches after implementation of the United States Department of Agriculture's new meals standards: minimal backlash, but rural and socioeconomic disparities exist. *Childhood Obesity,* 10(4), 349-356.

10 Terry-McElrath, Y. M., Turner, L., Colabianchi, N., O'Malley, P. M., Chaloupka, F. J., & Johnston, L. D. (2014). *Student Reactions during the First Year of Updated School Lunch Nutrition Standards - A BTG Research Brief.* Ann Arbor, MI: Bridging the Gap Program, Institute for Social Research, University of Michigan.

11 Cullen, K. W., Chen, T. A., Dave, J. M., & Jensen, H. (2015). Differential improvements in student fruit and vegetable selection and consumption in response to the new National School Lunch Program regulations: a pilot study. *Journal of the Academy of Nutrition and Dietetics,* 115(5), 743-750.

12 Cohen, J. F., Richardson, S., Parker, E., Catalano, P. J., & Rimm, E. B. (2014). Impact of the new U.S. Department of Agriculture school meal standards on food selection, consumption, and waste. *American Journal of Preventive Medicine,* 46(4), 388-394.

13 Johnson, D. B., Podrabsky, M., Rocha, A., & Otten, J. J. (2016). Effect of the Healthy Hunger-Free Kids Act on the nutritional quality of meals selected by students and school lunch participation rates. *JAMA Pediatrics,* 170(1), e15391.

14 Cullen, K. W., Chen, T., & Dave, J. M. (2015). Changes in foods selected and consumed after implementation of the new National School Lunch Program meal patterns in southeast Texas. *Preventive Medicine Reports,* 2, 440-443.

15 Schwartz, M. B., Henderson, K. E., Read, M., Danna, N., & Ickovics, J. R. (2015). New school meal regulations increase fruit consumption and do not increase total plate waste. *Childhood Obesity,* 11(3), 242-247.

FRAC
Food Research & Action Center

1200 18th Street NW, Suite 400, Washington, DC 20036
202.986.2200 | www.frac.org