

# RESEARCH BRIEF: BREAKFAST FOR HEALTH



## School Breakfast Participation Improves Children’s Dietary Intake

- School breakfast participants are more likely to consume diets that are adequate or exceed standards for important vitamins and minerals (e.g., vitamin A, vitamin C, calcium, phosphorus).<sup>1,2,3</sup>
- Children and adolescents who skip breakfast tend to have poorer nutrient intakes than those who eat breakfast.<sup>4,5</sup> Eating breakfast regularly has been linked with greater intake of fiber, calcium, iron, vitamin C, and other vitamins and minerals, and lower intake of fat, cholesterol, and sodium.<sup>6,7,8</sup>
- A recent literature review concludes that the new school nutrition standards improve nutrition-related outcomes among students, especially in terms of improving fruit and vegetable selection and consumption.<sup>9</sup>
- Children who participate in school breakfast are more likely to consume fruit and milk at breakfast.<sup>10</sup>
- Low-income children who eat school breakfast have better overall diet quality than those who eat breakfast elsewhere or skip breakfast.<sup>11</sup> Similarly, low-income students who eat both school breakfast and lunch have significantly better overall diet quality than low-income students who do not eat school meals.<sup>12</sup> An improvement in dietary quality also may extend to the family members of children with access to the breakfast program.<sup>13</sup>

## School Breakfast Decreases the Risk of Food Insecurity

- School breakfast offered at no cost to all students\* may eliminate disparities between food-secure and food-insecure children in terms of eating breakfast at all.<sup>14</sup>
- Students with improved nutrient intake as a result of a program that offers school breakfast at no cost to all students report decreases in symptoms of hunger.<sup>15</sup>
- Access to school breakfast decreases the risk of marginal food insecurity and breakfast skipping, especially for low-income children.<sup>16,17,18</sup>
- Rates of food insecurity among children are higher in the summer — a time when many do not have access to the good nutrition provided by the school meal programs available during the academic year.<sup>19,20</sup>

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\*Offering breakfast at no cost to all students is sometimes referred to as “universal breakfast” or “universal-free breakfast.” The program helps remove the stigma for low-income children of participation in school breakfast and thereby increases participation among students generally, but particularly low-income students.

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## School Breakfast May Protect Against Childhood Obesity

- School breakfast participation is associated with a lower body mass index (BMI, an indicator of excess body fat), lower probability of being overweight, and lower probability of obesity.<sup>21,22,23,24</sup>
- Food-insecure girls participating in the school lunch, school breakfast, or Supplemental Nutrition Assistance (SNAP, or food stamps) programs (or all three programs combined) have a lower risk of being overweight compared to food-insecure girls from non-participating households.<sup>25</sup>
- Participation in federally funded meals provided in child care, preschool, school, or summer settings is associated with a lower BMI among young, low-income children.<sup>26</sup>
- Children and adolescents who eat breakfast have more favorable weight-related outcomes (e.g., lower BMI, lower waist circumference, lesser likelihood of being chronically obese, decreased risk for obesity) in the short term and long term than those who skip breakfast.<sup>27,28,29,30,31,32,33,34,35,36</sup>
- Increasing participation in the federal nutrition programs — including school breakfast — is a healthy eating and childhood obesity prevention strategy recommended by two Institute of Medicine (IOM) committees and the White House Task Force on Childhood Obesity.<sup>37,38,39</sup>

## School Breakfast Participation Protects Against Other Negative Health Outcomes

- Breakfast skipping among children and adolescents is associated with a number of poor health outcomes and health-compromising behaviors, including higher blood cholesterol and insulin levels, smoking, alcohol use, physical inactivity, disordered eating, and unhealthy weight management practices.<sup>40,41,42,43,44,45</sup>
- School breakfast, including breakfast offered at no cost to all students, has been linked with fewer visits to the school nurse, particularly in the morning.<sup>46</sup>
- School breakfast participation, especially breakfast offered at no cost to all students, positively impacts children's mental health, including reductions in behavioral problems, anxiety, and depression.<sup>47,48</sup>
- Food insecurity is associated with some of the most costly health problems in the U.S., including diabetes, heart disease, and depression.<sup>49,50,51,52,53</sup> Children experiencing hunger are more likely to have lower physical functioning, more frequent stomachaches and headaches, mental health problems (e.g., depression, anxiety, behavioral problems), and to be in poorer health.<sup>54,55,56,57,58,59,60</sup>

## School Breakfast Helps Improve Student Academic Performance and Behavior; Skipping Breakfast Impairs Development and Learning†

- Students who participate in school breakfast show improved attendance, behavior, and academic performance as well as decreased tardiness.<sup>61,62</sup>

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- Students who eat breakfast the morning of a standardized test have significantly higher scores in spelling, reading, and math, compared to those who do not eat breakfast.<sup>63</sup>
  - Students who are undernourished have poorer cognitive functioning when they miss breakfast.<sup>64</sup>
  - Children and adolescents experiencing hunger have lower math scores, poorer grades, and are more likely to repeat a grade.<sup>65,66</sup>

## **Breakfast in the Classroom Programs<sup>‡</sup> and Programs Offering Breakfast at no Cost to all Children in the Cafeteria Yield Other Positive Results<sup>†</sup>**

- Programs offering breakfast at no cost to all students and breakfast in the classroom boost student breakfast participation.<sup>67,68,69,70,71,72</sup>
- Breakfast in the classroom is associated with more students eating breakfast as well as better overall dietary quality.<sup>73</sup>
- Student math and reading achievement test scores improve when breakfast is moved out of the cafeteria and into the classroom.<sup>74</sup>
- Students attending schools that offer breakfast at no cost to all students are more likely to consume a nutritionally substantive breakfast and to consume significantly more calcium, magnesium, phosphorus, fruit, and dairy products at breakfast, when compared to students from schools with a traditional means-tested school breakfast in the cafeteria program.<sup>75</sup>
- Children who increase their school breakfast participation as a result of a school breakfast program offered at no cost to all students show greater improvements in math scores, attendance, punctuality, depression, anxiety, and hyperactivity than children whose participation remains unchanged or decreases.<sup>76</sup>

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<sup>†</sup>For more information, read FRAC's *Breakfast for Learning* brief available at [www.frac.org](http://www.frac.org).

<sup>‡</sup>Breakfast in the classroom programs are an increasingly popular alternative to traditional, before-the-bell, cafeteria-based breakfast programs. Breakfast is brought in from the kitchen in containers that keep dishes at the right temperature, or is picked up from carts in the hallways as students enter class. Typically this breakfast is offered at no cost to all students. Such programs boost school breakfast participation and remove the stigma associated with participation.

This brief was originally prepared in September 2011 and updated in the spring of 2014 and October 2016 by FRAC's Heather Hartline-Grafton, DrPH, RD, Senior Nutrition Policy and Research Analyst.

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## Endnotes

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