

# RESEARCH BRIEF

## The Connections Between Food Insecurity, the Federal Nutrition Programs, and Student Behavior



**S**tudents who live in food-insecure\* households can have multiple disadvantages in school when compared to peers from food-secure households. Food insecurity negatively impacts the social, emotional, and behavioral development of school-age children and adolescents, and exacerbates their risk for behavioral issues that interfere with learning and achieving academic success.<sup>1</sup> Access to good nutrition, including access to the Federal Nutrition Programs,<sup>†</sup> such as the School Breakfast Program and the Afterschool Nutrition Programs, is a key strategy to support positive development and behavior among students facing food insecurity.



This brief highlights research on the connections between food insecurity and behavior, and the critical role that the Federal Nutrition Programs play when addressing these issues among school-age children and adolescents.

### Food insecurity inhibits students' social skills.

- Food insecurity impairs a child's ability to develop interpersonal relationships (e.g., form and maintain friendships, get along with people who are different from them, comfort or help other children); maintain self-control (e.g., respect others and their belongings, control one's temper, respond appropriately to peer pressure); and welcome learning opportunities (e.g., attentiveness, task persistence, eagerness to learn, flexibility).<sup>2</sup>
- Children who experience hunger are seven times more likely to engage in physical altercations.<sup>3</sup>
- Children from food-insecure households have lower levels of self-control in early childhood and higher levels of delinquency during late childhood, compared to their peers from food-secure households.<sup>4</sup>
- Teachers are more likely to report poor interpersonal skills, internalizing behaviors, and a decrease in self-control among students who have become food-insecure.<sup>5</sup> (Examples of internalizing behaviors include fearfulness, anxiety, and withdrawal.)
- Female students that live in households that become food insecure have impaired social skills development, such as experiencing loneliness and a diminished ability to get along with other children.<sup>6</sup>

\* Food insecurity is a term defined by the United States Department of Agriculture (USDA) that indicates that the availability of nutritionally adequate and safe food, or the ability to acquire such food, is limited or uncertain for a household.

† The federal nutrition programs include the Supplemental Nutrition Assistance Program (SNAP); Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); National School Lunch Program (NSLP); School Breakfast Program (SBP); Child and Adult Care Food Program (CACFP); Summer Food Service Program (SFSP); and Afterschool Nutrition Programs.

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## Toxic Stress and Adverse Childhood Experiences

Growing up in poverty is associated with toxic stress, which is chronic stress that can have enormous impacts on child development and health.<sup>39,40,41</sup> Under prolonged stress, stress hormone levels become excessively high for long periods of time. This leads to a “wear and tear” on the brain and body, referred to as allostatic load. Toxic stress can inhibit normal brain and physical development and metabolic processes among children, making them more susceptible to behavior and learning impairments and physical and mental illness later in life.<sup>42</sup> Toxic stress in children often results from strong, repeated, or prolonged exposure to adversity, such as adverse childhood experiences (ACEs).<sup>43</sup> ACEs are potentially traumatic experiences, such as economic hardship, loss of a parent due to divorce, witnessing domestic violence, or the incarceration of a parent. ACEs are more common among children living in poverty.<sup>44</sup> Exposure to more ACEs puts children at greater risk for health and economic problems later in life.<sup>45,46</sup> For instance, one study found that female caregivers’ ACEs were associated with current household and child food-insecurity status.<sup>47</sup>

## Food insecurity increases students’ risk for additional mental health issues and challenges.

- Food insecurity is strongly correlated to higher levels of anxiety and irritability among children.<sup>7</sup>
- As the severity of household food insecurity increases, so does the likelihood that children and adolescents will develop a mental disorder.<sup>8</sup>
- Teens experiencing hunger are more likely to have difficulty getting along with peers, get suspended from school, see a psychologist, have suicidal tendencies, and struggle with depression, as compared to their food-secure peers.<sup>9,10</sup>
- When food insecurity worsens for a teenager, the risk of developing a mood disorder, such as depression or bipolar disorder, increases.<sup>11</sup>
- Chronic stress (commonly referred to as toxic stress) among children experiencing chronic poverty and food insecurity can lead to delays in brain development and produce anxiety, impaired mood control, and emotional behavioral disorders.<sup>12,13,14</sup>

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## Students struggling with food insecurity may have difficulty being engaged in the classroom.

- Food-insecure students are more likely to be apathetic, withdrawn, non-responsive, and have decreased motivation in the classroom.<sup>15</sup>
- Children experiencing hunger are more likely to be tardy or absent from school.<sup>16</sup>
- Students who experience income shocks (i.e., severe fluctuations of income) at home are more likely to become disengaged in the school environment.<sup>17</sup>

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## The federal nutrition programs reduce food insecurity among school-age children and adolescents.

- Access to school breakfast decreases the risk of marginal food security and breakfast skipping, especially for low-income children.<sup>18,19,20</sup> School breakfast availability also reduces low food security and very low food security (the most severe level of food insecurity) among elementary school children.<sup>21</sup>

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- According to national data, free or reduced-price school lunches reduce food insecurity prevalence by at least 3.8 percent.<sup>22</sup>
  - School lunch participation is associated with a 14 percent reduction in the risk of food insufficiency<sup>‡</sup> among households with at least one child receiving a free or reduced-price school lunch.<sup>23</sup>
  - Rates of food insecurity and food insufficiency among children are higher in the summer — a time when students do not have access to the school meals that are available during the academic year.<sup>24,25,26</sup> Several studies demonstrate that greater summer meal availability or accessibility has beneficial effects on food insecurity, especially on very low food security.<sup>27,28</sup>
  - Children in households that have participated in the Supplemental Nutrition Assistance Program (SNAP) for six months are approximately one-third less likely to be food insecure than children in households recently approved for SNAP, but not yet receiving it.<sup>29</sup>
  - Among low-income families with children, SNAP receipt reduces the probability of very low food security for households and for children.<sup>30</sup>
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## **Participation in the federal nutrition programs, especially school breakfast,<sup>‡</sup> can improve behavior in school.**

- Students who participate in school breakfast show improved behavior, attendance, and academic performance as well as decreased tardiness.<sup>31,32</sup>
- School breakfast participation, especially breakfast offered at no cost to all students, positively impacts children’s mental health, including reductions in hyperactivity, anxiety, and depression.<sup>33,34</sup>
- Providing students with breakfast in the classroom is associated with fewer disciplinary office referrals, lower tardy rates, and improved attendance rates.<sup>35,36</sup>
- Schools that do not operate an afterschool snack program report a slightly larger increase in disciplinary events in the last week of the month, as compared to schools that provide an afterschool snack.<sup>37</sup> The last week of the month is when SNAP benefits often are running low or depleted for low-income households.
- Similarly, disciplinary infractions increase at the end of the SNAP benefit cycle for students in SNAP and non-SNAP households. However, the increase is larger for students from SNAP households. This means that students in SNAP households have lower rates of disciplinary issues earlier in the month, in contrast to later in the month when SNAP benefits are most likely exhausted.<sup>38</sup>

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<sup>‡</sup> Food insufficiency refers to an inadequate amount of food intake due to lack of money or resources.

<sup>‡</sup> For more information on the benefits of school breakfast, see FRAC’s research briefs, *Breakfast for Learning* and *Breakfast for Health*, at [www.frac.org](http://www.frac.org).

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## Endnotes

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