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# Food Insecurity and Health: Practices and Policies to Address Food Insecurity among Children

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PEDIATRICIANS CAN AND should play a critical role in addressing food insecurity, a health-related social need with harmful impacts on child health, development, and well-being.<sup>1</sup> Food insecurity is a term defined by the US 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.<sup>2</sup> A variety of strategies exist for pediatricians to address food insecurity among children in the United States, including screening for food insecurity in health care settings, connecting children and their families to the benefits in the federal nutrition programs, and advocating for policies to alleviate food insecurity and its root causes.<sup>1</sup> This commentary will briefly describe the prevalence of and risk factors for food insecurity among children, consequences of food insecurity for children, federal nutrition programs that improve household food security and child health, and actions pediatricians can take in their practice and through advocacy to meaningfully address food insecurity among children.

## FOOD INSECURITY PREVALENCE, RISK FACTORS, AND CONSEQUENCES

Food insecurity is a significant public health concern given the high prevalence and negative consequences for nutrition, health, and well-being. In 2018, approximately 11.2 million children lived in food-insecure households.<sup>2</sup> This represents 15.2% of all children. Research shows that certain households with children are more vulnerable to food insecurity, including those headed by a single female, Black or Hispanic, and households with incomes under 185% of the federal poverty line.<sup>2</sup> US-citizen children of immigrant mothers also face an increased risk of household food insecurity.<sup>3</sup> Furthermore, an emerging body of evidence indicates that the COVID-19 pandemic has increased food insecurity among US families and children, with one report concluding that, based on April 2020

data, “young children are experiencing food insecurity to an extent unprecedented in modern times.”<sup>4,5</sup>

While food insecurity has direct and indirect consequences across the lifespan, food insecurity—and even marginal food security (a less severe level of food insecurity)<sup>6,7</sup>—is especially detrimental to the health, development, and well-being of children.<sup>1,8</sup> Research shows a link for children between food insecurity and low birth weight,<sup>9,10</sup> birth defects,<sup>11</sup> iron deficiency anemia,<sup>12,13</sup> poor or fair health status,<sup>14,15</sup> poor dietary quality and less physical activity,<sup>16</sup> cardiometabolic risk factors,<sup>17</sup> high blood pressure,<sup>18</sup> more frequent colds and stomachaches,<sup>19</sup> asthma,<sup>20</sup> lower bone density (among boys),<sup>21</sup> untreated dental caries (ie, tooth decay),<sup>22</sup> developmental risk,<sup>23</sup> behavioral and social-emotional problems (eg, hyperactivity),<sup>24,25</sup> mental health problems (eg, depression, anxiety, suicidal ideation),<sup>26,27</sup> poor educational performance and academic outcomes,<sup>28,29</sup> and increased hospitalizations and hospital charges.<sup>6,30</sup>

Research also links food insecurity in households with young children to unfavorable outcomes for the family unit, including increased maternal depressive symptoms and parental arguing.<sup>31</sup> These findings are not surprising given the heightened stress and pressure facing parents with low incomes who struggle to feed their families.<sup>1</sup> Furthermore, because of limited financial resources, families who are food insecure may use coping strategies to stretch budgets that are harmful for health and nutrition, such as diluting or rationing infant formula<sup>32</sup> or making trade-offs between food and other basic necessities (eg, housing, medicine).<sup>33</sup>

Finally, food insecurity can complicate and compound the health challenges and expenses faced by households with children who have special health care needs—populations at high risk for food insecurity.<sup>34,35</sup> For example, children with epilepsy living in food-insecure households have significantly worse health-related quality of life and more medication side effects than their counterparts in food-secure households.<sup>36</sup>

## FEDERAL NUTRITION PROGRAMS THAT IMPROVE CHILD HEALTH AND WELL-BEING

One critical strategy to address food insecurity and its negative consequences is to connect children and their families to the major federal nutrition programs that benefit children and their families – that is, the Supplemental Nutrition Assistance Program (SNAP); Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); National School Lunch Program; School Breakfast Program; Child and Adult Care Food Program (CACFP); Summer Nutrition Programs; and Afterschool Nutrition Programs. The [Table](#) provides descriptions of these programs, all of which are administered by the USDA.

There is considerable evidence about the effective role that participation in the federal nutrition programs plays in alleviating food insecurity and poverty. For instance, children in households that participated in SNAP for 6 months are approximately one-third less likely to be food insecure than children in households recently approved for SNAP but not yet receiving it, based on a national sample of SNAP households with children.<sup>37</sup> WIC reduces the prevalence of household food insecurity by at least 20%, based on a national sample of children under the age of 5 who lived in households that were income-eligible for WIC.<sup>38</sup> Additional peer-reviewed studies demonstrate improvements in food security with school breakfast,<sup>39,40</sup> school lunch,<sup>41,42</sup> summer meals,<sup>43,44</sup> and CACFP<sup>45</sup> participation.

In terms of poverty, SNAP, school lunch, and WIC lifted 3.2 million, 1.4 million, and 302,000 people above the poverty line in 2018, respectively, based on Census Bureau data on poverty and income in the United States.<sup>46</sup> These national figures include approximately 1.3 million, 800,000, and 169,000 children, respectively.

Beyond their antihunger and antipoverty impacts, the federal nutrition programs are important health interventions for children in the short and long terms. For instance, children participating in SNAP are less likely to have obesity, underweight, developmental risk, nutritional risk, or fair or poor health status<sup>47,48</sup>; less likely to be hospitalized<sup>49</sup>; and their families are less likely to report health cost sacrifices.<sup>48</sup> Access to SNAP in utero and in early childhood also reduces the incidence of metabolic syndrome in adulthood and, for women, increases economic self-sufficiency and reports of being in good health in adulthood.<sup>50</sup>

Prenatal or early childhood participation in WIC is associated with improved dietary intake and quality,<sup>51,52</sup> weight outcomes,<sup>53</sup> immunization rates,<sup>54,55</sup> cognitive development and school performance,<sup>56</sup> and birth outcomes (including a lower risk of preterm birth, low birth weight, and perinatal death).<sup>57,58</sup> WIC is cost-saving, too, investing \$1 in prenatal WIC services saves about \$2.48 in medical, educational, and productivity costs over a newborn's lifetime by preventing preterm birth, based on simulations of WIC participation in California.<sup>59</sup>

Participation in CACFP, a program primarily targeting infants and young children, is associated with better dietary intake,<sup>60,61</sup> improved weight outcomes,<sup>60,62</sup> and a lower likelihood of being hospitalized or in fair or poor health.<sup>63</sup>

For school-aged children, national and local studies demonstrate the value of school breakfast and lunch in improving student dietary intake and quality.<sup>64,65</sup> The programs support and improve student health, including weight-related outcomes such as overweight or obesity,<sup>41,66</sup> and program participation, particularly for school breakfast, is associated with improved school attendance and academic performance.<sup>67,68</sup> Furthermore, summer nutrition programs are an important strategy for preventing summer weight gain<sup>69,70</sup> and learning loss among school-aged children.<sup>71,72</sup> Similarly, the afterschool nutrition programs provide good nutrition and enrichment activities during out-of-school time periods.<sup>73</sup>

## PEDIATRICIANS' ROLE IN ADDRESSING FOOD INSECURITY

In a 2015 policy statement, *Promoting Food Security for All Children*, the American Academy of Pediatrics (AAP) recommended that “pediatricians engage in efforts to mitigate food insecurity at the practice level and beyond,” including connecting families to and advocating for the federal nutrition programs.<sup>1</sup> To assist pediatricians in implementing the policy statement, AAP partnered with the Food Research & Action Center (FRAC) to develop, *Addressing Food Insecurity: A Toolkit for Pediatricians* (available at <https://frac.org/aaptoolkit>). The toolkit provides a variety of tools and resources to help pediatricians and their practice teams engage in the following activities: screen, intervene, and advocate.

First, pediatricians should screen for food insecurity in their practice settings using the Hunger Vital Sign, a two-question, validated tool that is widely used in clinical and community-based settings across the nation.<sup>74,75</sup> Next, when a child or family screens positive for food insecurity risk in a practice setting, or otherwise shows an interest in or need for food resources, the health care team should intervene by connecting the family to emergency food resources and the federal nutrition programs to address short-term and long-term food needs, respectively. These connections can happen at the practice level, or through referrals or partnerships with external organizations. However, research shows that not every family who reports food insecurity will want to be connected to food resources, and, conversely, some families may not endorse food insecurity in a screening tool yet desire a referral for food resources.<sup>76</sup> The latter reinforces the importance of an open dialogue with patients. The toolkit provides more details on strategies for effectively addressing food insecurity in clinical settings.

## POLICY RECOMMENDATIONS FOR PROTECTING AND STRENGTHENING THE FEDERAL NUTRITION PROGRAMS

While screening and intervening are critical actions, it also is essential for pediatricians to advocate for systems- and policy-level changes that address food

**Table.** Federal Nutrition Programs Available to Children\*

Program Name	General Program Eligibility <sup>†</sup>	Program Description
Supplemental Nutrition Assistance Program (SNAP) <i>The program may be called something else in your state.</i>	Low-income individuals of all ages who meet income and asset tests (that can vary by state)	Monthly benefits are provided on an Electronic Benefit Transfer (EBT) card to purchase food at grocery stores, farmers' markets, and other food retail outlets across the country that accept SNAP
Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)	Low-income pregnant, breastfeeding, and postpartum women, and infants and children up to age five deemed nutritionally at risk by a health care professional	Nutritionally tailored monthly food packages are provided to families and redeemed in grocery stores and food retailers that accept WIC; additional services include breastfeeding support, nutrition education and counseling, and health referrals
National School Lunch Program and School Breakfast Program	School-aged children of families at low or moderate income levels can qualify for free or reduced-price meals	Breakfasts and lunches meeting federal nutrition standards are provided in participating schools
Child and Adult Care Food Program (CACFP)	Children, typically up to age five, attending eligible child care centers and homes, Head Start, and Early Head Start	Up to two free meals and a snack meeting federal nutrition standards are provided to infants and young children at participating centers
Summer Nutrition Programs (available through the Summer Food Service Program or the National School Lunch Program)	Children 18 years of age and under visiting participating sites	Up to two free meals meeting federal nutrition standards are provided at approved school and community sites during summer vacation
Afterschool Nutrition Programs (available through CACFP or the National School Lunch Program)	Children 18 years of age and under visiting participating sites	Free, healthy snacks and/or meals meeting federal nutrition standards are provided in participating enrichment programs running afterschool, on weekends, or during school holidays

\*Adapted with permission from the AAP and FRAC *Federal Nutrition Programs and Emergency Food Referral Chart* (available at: <https://frac.org/aaptoolkit>). Primarily for use in healthcare settings, the referral chart includes key information on nutrition programs available to children and their families.

<sup>†</sup>WIC, school meals, and the other Child Nutrition Programs are not included in a public charge determination. Receipt of traditional, federally-funded SNAP benefits by the immigrant for themselves may be included in a public charge determination, pursuant to a new federal rule change that, at press time, was subject to litigation. Nonetheless, the scope of public charge has limits. For example, receipt of SNAP for dependents eligible for SNAP benefits, such as a US citizen, does not affect a public charge determination. Public charge is also not a factor for green card holders seeking US citizenship or renewing their green card documents. For additional information and updates, visit <https://frac.org/hunger-poverty-america/hunger-among-immigrants>.

insecurity and its root causes, such as poverty. “Upstream” strategies for tackling food insecurity include creating jobs (especially full-time jobs), raising wages, improving government income-support programs for struggling families, and improving access to and strengthening the federal nutrition programs. A more detailed discussion of the latter follows.

Given the effectiveness and importance of the federal nutrition programs to child health and development, pediatricians should engage in efforts to protect and strengthen these programs during program reauthorization and other legislative vehicles at the state and federal levels. These are important opportunities for pediatricians to weigh in and provide their unique expertise and perspective. Typically, every 5 years SNAP is reauthorized by Congress as part of the Farm Bill. The reauthorization establishes who is eligible for SNAP and addresses program access, benefit levels, and other matters. Similarly, WIC, school meals, and the other Child Nutrition Programs typically are reauthorized every 5 years by Congress as part of the Child Nutrition and WIC Reauthorization Act (CNR). CNR provides an opportunity

to improve and strengthen the Child Nutrition Programs so that they better meet the needs of the nation's children in early care and education, preschool, school-based, and out-of-school time settings.

In addition to the reauthorization process, federal or state regulatory or administrative actions, budgets and annual appropriations can positively or negatively affect the programs and their participants. For instance, annual appropriations efforts secure funding to support WIC participation and the important targeted funding for breastfeeding education, research, peer counseling, and public health partnerships.

Pediatricians can engage in advocacy in a number of ways during program reauthorization and other legislative opportunities, such as writing an op-ed in their local newspaper about food insecurity and time-sensitive legislation, providing expert testimony to legislators about the consequences of food insecurity and the importance of the federal nutrition programs for their patients, or submitting written comments to government agencies during public comment periods on proposed rules that could harm or improve federal nutrition programs. The aforementioned

toolkit provides additional information on and examples of advocacy actions for pediatricians.

Regardless of the legislative or administrative vehicle used to address or modify program eligibility, access, or benefits, key policy recommendations to protect and strengthen the federal nutrition programs are provided below.

- **Improve the adequacy of monthly SNAP benefits.** The inadequacy of SNAP monthly benefit allotments — SNAP’s key shortcoming — severely limit the program’s ability to do even more to improve the food security, health, and well-being of the nation’s children and their families. For most households, SNAP benefits are not enough to get through the entire month without hunger or being forced to sacrifice nutrition quality.<sup>77,78</sup>
- **Oppose rollbacks on policies that allow states to get SNAP benefits to people in need.** A number of harmful proposals have been issued in recent years that would reduce or eliminate SNAP benefits for certain individuals and households, including those who are unemployed, underemployed, or earning their way up the economic ladder.<sup>79</sup> For example, a proposal to restrict broad-based categorical eligibility for SNAP would have implications for more than 2 million people living in households with children.<sup>80</sup> The proposal will contribute not only to the loss of SNAP benefits, but also compromise access to school meals for students who are directly certified (ie, automatically eligible for free school meals because they live in a household receiving SNAP benefits). In short, the loss of SNAP benefits from this proposal will make it more difficult for affected children to access free school meals.
- **Improve Child Nutrition Program access and participation by underserved children and communities.** Too many children, especially children from low-income households, are missing out on the nutritional and health benefits from participating in WIC and federal food programs in school, summer, afterschool, and child care settings. Fortunately, a number of evidence-based strategies exist to connect more children to these effective programs, such as the Community Eligibility Provision for school meals.<sup>81</sup> Under the Community Eligibility Provision created by the Healthy, Hunger-Free Kids Act of 2010, high-poverty schools and school districts can offer school meals at no charge to all students.
- **Ensure nutrition quality in the Child Nutrition Programs through science-based standards.** This is especially relevant for the school meals program. Schools and advocates have made tremendous progress in improving the nutrition quality of foods and beverages available to students during the school day, but this progress is being undermined. Despite widespread support, overwhelming evidence of compliance, and positive nutrition impacts, efforts have been underway to rollback the science-based school meal nutrition

standards issued in January 2012.<sup>82,83</sup> If successful, the end result will be a weakening of the standards for whole grains, sodium, milk, fruits, and vegetables. These rollbacks, some of which have been contested in lawsuits, are inconsistent with the current scientific literature as well as the Dietary Guidelines for Americans, which recommends serving whole-grain foods, fruits and vegetables, and limiting sodium and saturated fat.

- **Protect immigrant families from policies that, directly or indirectly, threaten their health, nutrition, and well-being.** One in 4 children in the United States has at least one foreign-born parent.<sup>84</sup> A host of anti-immigrant threats are creating a climate of fear in many immigrant communities, making it more difficult for families to access federal nutrition programs and other safety net programs.<sup>85,86</sup> Pediatricians should provide up-to-date information to immigrant families about their eligibility for program benefits as well as what benefits do not count against immigration status. The [Table](#) provides information on eligibility for the federal nutrition programs (see footnote for immigrant eligibility).

Pediatricians can stay abreast of the latest news, research, and policy action on these and other pressing issues related to food insecurity by subscribing to policy updates from national health and advocacy groups, such as AAP, FRAC, or Children’s HealthWatch.

## CONCLUSIONS

Food insecurity has serious consequences on the health, development, and well-being of children, and has negative effects on the health care system and economy. Pediatricians can support and improve the health of their patients, as well as children across the nation, by addressing food insecurity and its root causes at the practice level and through policy advocacy.

## REFERENCES

1. American Academy of Pediatrics. Promoting food security for all children. *Pediatrics*. 2015;136:e1431–e1438.
2. Coleman-Jensen A, Rabbitt MP, Gregory CA. *Household Food Security in the United States in 2018*. Washington, DC: US Department of Agriculture, Economic Research Service; 2019. Available at: <https://www.ers.usda.gov/publications/pub-details/?pubid=94848>. Accessed January 16, 2020.
3. Chilton M, Black MM, Berkowitz C, et al. Food insecurity and risk of poor health among US-born children of immigrants. *Am J Public Health*. 2009;99:556–562.
4. Bauer L. *The COVID-19 Crisis has Already Left Too Many Children Hungry in America*. Washington, DC: Brookings Institution; 2020. Available at: <https://www.brookings.edu/blog/up-front/2020/05/06/the-covid-19-crisis-has-already-left-too-many-children-hungry-in-america/>. Accessed May 26, 2020.
5. Karpman M, Zuckerman S, Gonzalez D, et al. *The COVID-19 Pandemic is Straining Families’ Abilities to Afford Basic Needs*. Washington, DC: Urban Institute; 2020. Available at: [https://www.urban.org/sites/default/files/publication/102124/the-covid-19-pandemic-is-straining-families-abilities-to-afford-basic-needs\\_4.pdf](https://www.urban.org/sites/default/files/publication/102124/the-covid-19-pandemic-is-straining-families-abilities-to-afford-basic-needs_4.pdf). Accessed May 26, 2020.



6. Cook JT, Black M, Chilton M, et al. Are food insecurity's health impacts underestimated in the US population? Marginal food security also predicts adverse health outcomes in young US children and mothers. *Adv Nutr*. 2013;4:51–61.
7. Grineski SE, Morales DX, Collins TW, et al. Transitional dynamics of household food insecurity impact children's developmental outcomes. *J Dev Behav Pediatr*. 2018;39:715–725.
8. Shankar P, Chung R, Frank DA. Association of food insecurity with children's behavioral, emotional, and academic outcomes: a systematic review. *J Dev Behav Pediatr*. 2017;38:135–150.
9. Borders AE, Grobman WA, Amsden LB, et al. Chronic stress and low birth weight neonates in a low-income population of women. *Obstet Gynecol*. 2007;109(2 Pt 1):331–338.
10. Grilo SA, Earnshaw VA, Lewis JB, et al. Food matters: food insecurity among pregnant adolescents and infant birth outcomes. *J Appl Res Child*. 2015;6:1–14. Article 4.
11. Carmichael SL, Yang W, Herring A, et al. Maternal food insecurity is associated with increased risk of certain birth defects. *J Nutr*. 2007;137:2087–2092.
12. Metallinos-Katsaras E, Colchamiro R, Edelstein S, et al. Household food security status is associated with anemia risk at age 18 months among low-income infants in Massachusetts. *J Acad Nutr Diet*. 2016;116:1760–1766.
13. Eicher-Miller HA, Mason AC, Weaver CM, et al. Food insecurity is associated with iron deficiency anemia in US adolescents. *Am J Clin Nutr*. 2009;90:1358–1371.
14. Ryu JH, Bartfeld JS. Household food insecurity during childhood and subsequent health status: the early childhood longitudinal study – kindergarten cohort. *Am J Public Health*. 2012;102:e50–e55.
15. Drennen CR, Coleman SM, Ettinger de Cuba S, et al. Food insecurity, health, and development in children under age four years. *Pediatrics*. 2019;144:e20190824.
16. Fram MS, Ritchie LD, Rosen N, et al. Child experience of food insecurity is associated with child diet and physical activity. *J Nutr*. 2015;145:499–504.
17. Robson SM, Lozano AJ, Papas M. Food insecurity and cardiometabolic risk factors in adolescents. *Prev Chronic Dis*. 2017;14:e110.
18. South AM, Palakshappa D, Brown CL. Relationship between food insecurity and high blood pressure in a national sample of children and adolescents. *Pediatr Nephrol*. 2019;34:1583–1590.
19. Alaimo K, Olson CM, Frongillo Jr EA, et al. Food insufficiency, family income, and health in US preschool and school-aged children. *Am J Public Health*. 2001;91:781–786.
20. Mangini LD, Hayward MD, Dong YQ, et al. Household food insecurity is associated with childhood asthma. *J Nutr*. 2015;145:2756–2764.
21. Eicher-Miller HA, Mason AC, Weaver CM, et al. Food insecurity is associated with diet and bone mass disparities in early adolescent males but not females in the United States. *J Nutr*. 2011;141:1738–1745.
22. Chi DL, Masterson EE, Carle AC, et al. Socioeconomic status, food security, and dental caries in US children: mediation analyses of data from the National Health and Nutrition Examination Survey, 2007–2008. *Am J Public Health*. 2014;104:860–864.
23. Rose-Jacobs R, Black MM, Casey PH, et al. Household food insecurity: associations with at-risk infant and toddler development. *Pediatrics*. 2008;121:65–72.
24. Johnson AD, Markowitz AJ. Associations between household food insecurity in early childhood and children's kindergarten skills. *Child Dev*. 2018;89:e1–e17.
25. Poole-Di Salvo E, Silver EJ, Stein RE. Household food insecurity and mental health problems among adolescents: what do parents report. *Acad Pediatr*. 2016;16:90–96.
26. McLaughlin KA, Green JG, Alegría M, et al. Food insecurity and mental disorders in a national sample of US adolescents. *J Am Acad Child Adolesc Psychiatry*. 2012;51:1293–1303.
27. McIntyre L, Williams JV, Lavorato DH, Patten S. Depression and suicide ideation in late adolescence and early adulthood are an outcome of child hunger. *J Affect Disord*. 2013;150:123–129.
28. Nelson BB, Dudovitz RN, Coker TR, et al. Predictors of poor school readiness in children without developmental delay at age 2. *Pediatrics*. 2016;138:e20154477.
29. Howard LL. Does food insecurity at home affect non-cognitive performance at school? A longitudinal analysis of elementary student classroom behavior. *Econ Educ Rev*. 2011;30:157–176.
30. Ettinger de Cuba S, Casey PH, Cutts D, et al. Household food insecurity positively associated with increased hospital charges for infants. *J Appl Res Child*. 2018;9:1–19. Article 8.
31. Johnson AD, Markowitz AJ. Food insecurity and family well-being outcomes among households with young children. *J Pediatr*. 2018;196:275–282.
32. Burkhardt MC, Beck AF, Kahn RS, et al. Are our babies hungry? Food insecurity among infants in urban clinics. *Clin Pediatr*. 2012;51:238–243.
33. Knowles M, Rabinowich J, Ettinger de Cuba S, et al. Do you wanna breathe or eat?": parent perspectives on child health consequences of food insecurity, trade-offs, and toxic stress. *Matern Child Health J*. 2016;20:25–32.
34. Rose-Jacobs R, Goodhart Fiore J, Ettinger de Cuba S, et al. Children with special health care needs, supplemental security income, and food insecurity. *J Dev Behav Pediatr*. 2016;37:140–147.
35. Balistreri KS. Food insufficiency and children with special health-care needs. *Public Health*. 2019;167:55–61.
36. O'Malley JA, Klett BM, Klein MD, et al. Revealing the prevalence and consequences of food insecurity in children with epilepsy. *J Community Health*. 2017;42:1213–1219.
37. Mabl J, Worthington J. Supplemental nutrition assistance program participation and child food security. *Pediatrics*. 2014;133:610–619.
38. Kreider B, Pepper JV, Roy M. Identifying the effects of WIC on food insecurity among infants and children. *South Econ J*. 2016;82:1106–1122.
39. Bartfeld JS, Ahn HM. The School Breakfast Program strengthens household food security among low-income households with elementary school children. *J Nutr*. 2011;141:470–475.
40. Fletcher JM, Frisvold DE. The relationship between the school breakfast program and food insecurity. *J Consum Aff*. 2017;51:481–500.
41. Gundersen C, Kreider B, Pepper J. The impact of the national school lunch program on child health: a nonparametric bounds analysis. *J Econom*. 2012;166:79–91.
42. Arteaga I, Heflin C. Participation in the national school lunch program and food security: an analysis of transitions into kindergarten. *Children and Youth Serv Rev*. 2014;47:224–230.
43. Nord M, Romig K. Hunger in the summer: seasonal food insecurity and the national school lunch and summer food service programs. *J Child Poverty*. 2006;12:141–158.
44. Miller DP. Accessibility of summer meals and the food insecurity of low-income households with children. *Public Health Nutr*. 2016;19:2079–2089.
45. Heflin C, Arteaga I, Gable S. The child and adult care food program and food insecurity. *Soc Serv Rev*. 2015;89:77–98.
46. Fox L. *The Supplemental Poverty Measure: 2018*. Washington, DC: US Census Bureau; 2019. Available at: <https://www.census.gov/library/publications/2019/demo/p60-268.html>. Accessed January 16, 2020.
47. Lee BJ, Mackery-Bilaver L, Chin M. *Effects of WIC and Food Stamp Program Participation on Child Outcomes*. Washington, DC: US Department of Agriculture, Economic Research Service; 2006. Available at: <https://www.ers.usda.gov/publications/pub-details/?pubid=86100>. Accessed January 6, 2020.
48. Ettinger de Cuba SA, Bovell-Ammon AR, Cook JT, et al. SNAP, young children's health, and family food security and healthcare access. *Am J Prev Med*. 2019;57:525–532.
49. Cook JT, Frank DA, Levenson SM, et al. Child food insecurity increases risks posed by household food insecurity to young children's health. *J Nutr*. 2006;136:1073–1076.
50. Hoynes H, Schanzenbach DW, Almond D. Long-run impacts of childhood access to the safety net. *Am Econ Rev*. 2016;106:903–934.

51. Colman S, Nichols-Barrer IP, Redline JE, et al. *Effects of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC): A Review of Recent Research*. Alexandria, Va: US Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis; 2012. Available at: <https://www.fns.usda.gov/effects-special-supplemental-nutrition-program-women-infants-and-children-wic-review-recent-research>. Accessed January 16, 2020.
52. Hamner HC, Paolicelli C, Casavale KO, et al. Food and beverage intake from 12 to 23 months by WIC status. *Pediatrics*. 2019;143:e20182274.
53. Black MM, Quigg AM, Cook J, et al. WIC participation and attenuation of stress-related child health risks of household food insecurity and caregiver depressive symptoms. *Arch Pediatr Adolesc Med*. 2012;166:444–451.
54. Thomas TN, Kolasa MS, Zhang F, et al. Assessing immunization interventions in the women, infants, and children (WIC) program. *Am J Prev Med*. 2014;47:624–628.
55. Bersak T, Sonchak L. The impact of WIC on infant immunizations and health care utilization. *Health Serv Res*. 2018;53(Suppl 1):2952–2969.
56. Jackson M. Early childhood WIC participation, cognitive development and academic achievement. *Soc Sci Med*. 2015;126:145–153.
57. Fingar KR, Lob SH, Dove MS, et al. Reassessing the association between WIC and birth outcomes using a fetuses-at-risk approach. *Matern Child Health J*. 2017;21:825–835.
58. Sonchak L. The impact of WIC on birth outcomes: new evidence from South Carolina. *Matern Child Health J*. 2016;20:1518–1525.
59. Nianogo RA, Wang MC, Basurto-Davila R, et al. Economic evaluation of California prenatal participation in the special supplemental nutrition program for women, infants and children (WIC) to prevent preterm birth. *Prev Med*. 2019;124:42–49.
60. Korenman S, Abner KS, Kaestner R, Gordon RA. The child and adult care food program and the nutrition of preschoolers. *Early Child Res Q*. 2013;28:325–336.
61. Andreyeva T, Kenney EL, O'Connell M, et al. Predictors of nutrition quality in early child education settings in Connecticut. *J Nutr Educ Behav*. 2018;50:458–467.
62. Lumeng JC, Kaciroti N, Sturza J, et al. Changes in body mass index associated with head start participation. *Pediatrics*. 2015;135:e449–e456.
63. Gayman A, Ettinger de Cuba S, March E, et al. *Child Care Feeding Programs Support Young Children's Healthy Development*. Boston, Mass: Children's HealthWatch; 2010. Available at: <https://childrenshealthwatch.org/child-care-feeding-programs-support-young-childrens-healthy-development/>. Accessed January 16, 2020.
64. Vernarelli JA, O'Brien B. A vote for school lunches: school lunches provide superior nutrient quality than lunches obtained from other sources in a nationally representative sample of US children. *Nutrients*. 2017;9:e924.
65. Fox MK, Gearan E. *School Nutrition and Meal Cost Study: Summary of Findings*. Alexandria, Va: US Department of Agriculture, Food and Nutrition Service; 2019. Available at: <https://www.fns.usda.gov/school-nutrition-and-meal-cost-study>. Accessed January 16, 2020.
66. Wang S, Schwartz MB, Shebi FM, et al. School breakfast and body mass index: a longitudinal observational study of middle school students. *Pediatr Obes*. 2017;12:213–220.
67. Frisvold DE. Nutrition and cognitive achievement: an evaluation of the school breakfast program. *J Public Econ*. 2015;124:91–104.
68. Anzman-Frasca S, Djang HC, Halmo MM, et al. Estimating impacts of a breakfast in the classroom program on school outcomes. *JAMA Pediatr*. 2015;169:71–77.
69. Kimbro RT, Rigby E. Federal food policy and childhood obesity: a solution or part of the problem? *Health Aff*. 2010;29:411–418.
70. Franckle R, Adler R, Davison K. Accelerated weight gain among children during summer versus school year and related racial/ethnic disparities: a systematic review. *Prev Chronic Dis*. 2014;11:e101.
71. Augustine CH, McCombs JS, Pane JF, et al. *Learning from Summer: Effects of Voluntary Summer Learning Programs on Low-Income Urban Youth*. Santa Monica, Calif: RAND Corporation; 2016. Available at: [https://www.rand.org/pubs/research\\_reports/RR1557.html](https://www.rand.org/pubs/research_reports/RR1557.html). Accessed January 16, 2020.
72. Bruce JS, De La Cruz MM, Moreno G. Lunch at the library: examination of a community-based approach to addressing summer food insecurity. *Public Health Nutr*. 2017;20:1640–1649.
73. Kenney EL, Austin SB, Cradock AL, et al. Identifying sources of children's consumption of junk food in Boston after-school programs, April–May 2011. *Prev Chronic Dis*. 2014;11:e205.
74. Hager ER, Quigg AM, Black MM, et al. Development and validity of a 2-item screen to identify families at risk for food insecurity. *Pediatrics*. 2010;126:e26–e32.
75. Gundersen C, Engelhard EE, Crumbaugh AS, et al. Brief assessment of food insecurity accurately identifies high-risk US adults. *Public Health Nutr*. 2017;20:1367–1371.
76. Bottino CJ, Rhodes ET, Kreatsoulas C, et al. Food insecurity screening in pediatric primary care: can offering referrals help identify families in need? *Acad Pediatr*. 2017;17:497–503.
77. Chiappone A, Parks CA, Calloway E, et al. Perceptions and experiences with SNAP and potential policies: viewpoint from SNAP participants. *J Hunger Environ Nutr*. 2019;14:98–109.
78. Edin K, Boyd M, Mabli J, et al. *SNAP Food Security In-Depth Interview Study*. Alexandria, Va: US Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis; 2013. Available at: <https://www.fns.usda.gov/snap-food-security-depth-interview-study>. Accessed January 16, 2020.
79. Richterman A, Ivers LC. Misguided changes to SNAP - defending a public health intervention for the poor. *N Engl J Med*. 2020;382:1191–1193.
80. Waxman E, Joo N. *How Households with Children Are Affected by Restricting Broad-Based Categorical Eligibility for SNAP*. Washington, DC: Urban Institute; 2019. Available at: <https://www.urban.org/research/publication/how-households-children-are-affected-restricting-broad-based-categorical-eligibility-snap>. Accessed January 14, 2020.
81. Maurice A, Rosso R, FitzSimons C, et al. *Community Eligibility: The Key to Hunger-Free Schools (School Year 2018–2019)*. Washington, DC: Food Research & Action Center; 2019. Available at: <https://frac.org/wp-content/uploads/community-eligibility-key-to-hunger-free-schools-sy-2018-2019.pdf>. Accessed January 16, 2020.
82. Kogan R. Rollback of Nutrition Standards Not Supported by Evidence. Available at: <https://www.healthaffairs.org/doi/10.1377/hblog20190312.130704/full/>. Accessed January 16, 2020.
83. Schwartz MB, Brownell KD, Miller DL. Primer on US food and nutrition policy and public health: protect school nutrition standards. *Am J Public Health*. 2019;109:990–991.
84. Lou C, Adams G, Bernstein H. *Part of Us: A Data-Driven Look at Children of Immigrants*. Washington, DC: Urban Institute; 2019. Available at: <https://www.urban.org/features/part-us-data-driven-look-children-immigrants>. Accessed January 16, 2020.
85. Zallman L, Finnegan KE, Himmelstein DU, et al. Implications of changing public charge immigration rules for children who need medical care. *JAMA Pediatr*. 2019;e191744.
86. Pelto DJ, Ocampo A, Garduño-Ortega O, et al. The nutrition benefits participation gap: barriers to uptake of SNAP and WIC among Latin American immigrant families. *J Community Health*. 2020;45:488–491.