

Policy Statement on School Nutrition June 2020

Background

Each day in the United States, nearly 30 million students receive lunch through the National School Lunch Program (NSLP),¹ and more than 14 million students receive breakfast through the School Breakfast Program (SBP).² These numbers include all participating children whether they receive free, reduced-price, or full-price meals. The NSLP is the nation's second largest food and nutrition assistance program, after the Supplemental Nutrition Assistance Program (SNAP). In fiscal year 2019, school cafeterias served nearly five billion lunches,³ operating in nearly 100,000 public and nonprofit private schools (grades pre-K to 12) and residential childcare institutions.⁴

The NSLP and SBP are essential nutrition assistance programs in the United States. The majority of student participants are from under-resourced families—71 percent of NSLP participants and 85 percent of SBP participants receive free or reduced-price meals, which are determined by their household income. The NSLP provides reduced-price or free lunches to nearly 22 million children daily, and the SBP provides reduced-price or free breakfasts to more than 12 million children daily. Participation among students receiving free meals has dramatically increased in the past decade (from 15.4 million children in 2008 to 20 million children in 2019) and remains the largest category with about two-thirds of all participating students receiving free meals in 2019.

For almost two decades, the American Heart Association along with other health and food security partners have advocated to improve the school meals program. The process for updating national school nutrition standards began in 2004, when the U.S. Department of Agriculture (USDA)—based on requirements in the Child Nutrition and WIC Reauthorization Act of 2004—commissioned the National Academy of Medicine (NAM), formerly the Institute of Medicine, to provide recommendations on what constitutes a healthy school meal.^{7,8} In December 2010, the bipartisan Healthy, Hunger-Free Kids Act (HHFKA)⁹ was signed into law, which further empowered the USDA to update the national nutrition standards for school meals and establish nutrition standards for all other foods sold in schools throughout the school day. Released by USDA in 2012, the school meal nutrition standards represented the first major changes to meal requirements in more than 15 years and required more fruits, vegetables, and whole grains and limits to the amount of calories, saturated fats, and sodium in school foods. 10 In 2013, the USDA released the Smart Snack nutrition standards for 'competitive' foods and beverages — items sold via vending machines, snack bars, school stores, or fundraisers during school hours or in cafeteria à la carte lines that 'compete' with the school meals program. 11 The phrase 'updated nutrition standards' in this document refers to the reimbursable meal and competitive food standards released in 2012 and 2013, respectively.

Modeling data suggest that implementing the updated nutrition standards for school meals could prevent more than 1.8 million cases of childhood obesity by 2025. 12 Implementing the updated nutrition standards

^{*} Some of the reasons for the increase in free meals participations include the 2008 recession, the creation of Community Eligibility Provision, and expanding direct certification.

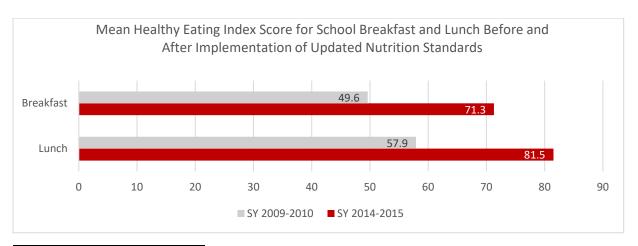
for competitive foods and beverages sold in schools could potentially prevent more than 340,000 cases of childhood obesity by 2025, if children do not compensate by increasing food intake outside of school.¹² In particular, applying standards to foods sold outside of meal programs (Smart Snacks) could lead to costs savings of nearly \$800 million.¹²

In December 2018, the USDA finalized a rule to roll back some of the requirements for school nutrition standards, including delaying the second phase of sodium reduction to the 2024-25 school year, eliminating the third and final phase of sodium reduction, weakening the whole grain standards by only requiring half of grain servings to be whole grain-rich, and expanding allowable flavored milk to include low-fat milk when under the previous rule flavored milk could only be fat-free. This rule was overturned in federal court in April 2020 for violating the Administrative Procedure Act.

In January 2020, the USDA published a proposed rule that would further roll back the updated nutrition standards, including reducing the quantity of certain vegetable subgroup requirements, reducing fruit in breakfast served in the classroom and grab and go, and allowing more unhealthy foods in the à la carte line. Both the 2018 and 2020 rollbacks weaken the application of healthy nutrition standards and not only hurt the integrity of the school meals program, but further reduce the opportunity to help students prevent onset of chronic health conditions.

The Updated Nutrition Standards Have Improved the School Meals Program

The updated nutrition standards have improved the nutritional quality of school meals and competitive foods, increased participation in the school meals programs, have not increased overall school foodservice costs, and are generally accepted by parents and the public. ^{15,16,17,18,19} As of 2016, more than 99 percent of schools that participate in the NSLP were meeting the 2012 nutrition standards, up from 14 percent in 2009-2010. ^{20,21} The USDA's 2019 *School Nutrition and Meal Cost Study*, [†] which gathered data from more than 1,200 schools nationwide, found that the updated nutrition standards have resulted in improvements to school meals. ¹⁵ Compared to data from school year (SY) 2009–2010, in SY 2014–2015, the mean Healthy Eating Index (HEI) score (a measure of meeting the *Dietary Guidelines for Americans (DGA)*) for lunches increased from 57.9 to 81.5 and for breakfast increased from 49.6 to 71.3 out of a possible 100. ¹⁵ Additional studies have documented the efficacy of the updated nutrition standards as well. ^{22,23}



[†] The *School Nutrition and Meal Cost Study* is the most comprehensive national study on school nutrition and meals, including the updated nutrition standards.

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Lunches of NSLP participants have also been found to be more nutritious than lunches of non-NSLP participants. The *School Nutrition and Meal Cost Study* found that NSLP participants had a significantly higher HEI score compared with non-participants (80.1 versus 65.1). ¹⁵ An additional study of preschools and kindergartens in rural Virginia found that packed lunches brought from home were of generally lower nutritional quality than school lunches. ²⁴ In particular, packed lunches had significantly higher amounts of energy, saturated fat, sugar, and less protein, fiber, vitamin A, and calcium compared to school lunches, although packed lunches did have greater vitamin C and iron and lower sodium than school lunches.²⁴

The updated nutrition standards help schools promote healthier food options and establish a foundation that promotes a lifetime of healthy behaviors. Studies have suggested that a healthy diet is associated with improved academic achievement²⁵ and that certain breakfast programs are associated with increased attendance.²⁶ A 2018 systematic review found that implementing the updated nutrition standards for competitive foods reduced children's sugary drink intake by 0.18 servings per day and unhealthy snacks by 0.17 servings per day, while implementing the updated nutrition standards for school meals increased fruit intake by 0.75 servings per day and reduced sodium by 170 milligrams per day.²⁷ A rapid health impact assessment published by Healthy Eating Research found that there is strong evidence showing that consumption of foods and beverages at school impacts total daily intake and total diet quality and that weakening the updated nutrition standards would likely reduce total diet quality.^{28,‡} Over time, these changes could have a significant impact on changing children's food preferences and adopting healthier dietary behaviors.²⁷ In addition, a national cohort study found that improved school nutrition standards are associated with a decrease in obesity among low-income students.²⁹

NSLP participation rates have increased as a result of implementing the updated nutrition standards. The *School Nutrition and Meal Cost Study* found that participation in NSLP was higher in schools that served the healthiest lunches (as measured by Healthy Eating Index scores), compared with schools that served the least healthy lunches (60 percent vs. 50 percent, respectively).¹⁵

The School Nutrition and Meal Cost Study found no association between the nutritional quality of the school meals and the reported cost for the school to produce the meal after updated nutrition standards went into effect in SY 2014–2015, indicating that healthier meals did not cost more to produce than other meals.¹⁵ A nationally representative survey of 489 U.S. school nutrition directors conducted by The Pew Charitable Trusts and the Robert Wood Johnson Foundation found that 84 percent of program directors reported rising or stable combined revenue (meal reimbursements plus snack and beverage sales) in 2014–2015.¹⁶

Parents and caregivers support the updated school meal standards. A 2014 national poll conducted by The Pew Charitable Trusts, the Robert Wood Johnson Foundation, and the American Heart Association found that parents of school-age children overwhelmingly support national nutrition standards for all foods and beverages sold to students during school: 72 percent of parents favor national nutrition standards for school meals, 72 percent support standards for school snacks, 75 percent think salt should be limited in meals, and 91 percent support requiring schools to include a serving of fruits and vegetables with every

[‡] While there have been reports of increased food waste in schools, research suggests that food waste has not increased since implementing the updated nutrition standards. More information on food waste in schools can be found in the food waste section.

meal.¹⁷ A nationally representative survey of elementary school administrators and food service staff found that in 2012–2013, just after the updated nutrition standards for meals took effect, 70 percent agreed that students liked the new lunches.¹⁸ A national poll conducted by the W.K. Kellogg Foundation in 2015 found that 86 percent of the public supported the updated nutrition standards and 86 percent said the nutrition requirements should stay the same or be strengthened.¹⁹

The rapid health impact assessment published by Healthy Eating Research found that USDA's 2020 proposed changes to school nutrition standards would negatively affect the quality of children's diets who consume school meals and competitive foods and increase the risk that students fall into food insecurity. In addition, the health impact assessment found rolling back the nutrition standards could impact student academic performance and learning, especially among Hispanic and black children and those from underresourced communities, who rely most on school foods. The health impact assessment also found that there is strong evidence showing that nutrition standards affect students' participation in school meal programs and school food service revenue. Stronger nutrition standards increase the likelihood of a student's participation in school meal programs, thus increasing food service revenue. In summary, the changes to nutrition changes would affect children's diets and their health, school meal participation, and school revenue.

Policy recommendations:

- Maintain robust school nutrition standards for meals and competitive foods to ensure the health
 and wellbeing for all children, especially those who experience food insecurity, and preserve the
 success of the programs.
- Prevent and reverse any rules that weaken the school nutrition standards to ensure the nutrition standards are aligned with the most current Dietary Guidelines for Americans, as required by law, and the updated Dietary Reference Intake for sodium.

Continuing to Strengthen the Nutrition Standards

Added Sugars

The 2015 DGA, recommends limiting added sugars to less than 10 percent of daily calories.³⁰ The American Heart Association recommends that children ages 2-18 years old should have no more than 6 teaspoons (100 calories) of added sugars per day from foods and beverages.³¹ Yet, U.S children 2-19 years old consume, on average, 14 percent of their daily calories from added sugars.³² It would take a 28 percent reduction to meet the 10 percent of total daily calories limit. Only about 35 percent of children met the DGA's added sugars recommendation in 2015-2016.³²

According to the 2015 DGA, strong evidence supports that eating patterns lower in added sugars intake are associated with reduced risk of cardiovascular disease and moderate evidence indicates that those eating patterns are associated with reduced risk of obesity, type 2 diabetes, and some types of cancer. ³⁰

Since added sugars are not part of the school nutrition standards, USDA does not collect information on the amount of added sugars in school meals. Anecdotally, many share that added sugars are a problem, particularly in the SBP where many sugary grains (sweetened cereals, French toast sticks, pancakes, pastries, etc.) are served. 33,34,35,36 When the updated nutrition standards were published, the DGA recommendation to limit added sugars to less than 10 percent of daily calories did not exist, nor was

information on added sugars available on the Nutrition Facts label. In contrast, the updated Nutrition Facts label, which went into effect January 1, 2020 for manufacturers with \$10 million or more in annual food sales, § now includes information on added sugars along with a percent Daily Value. Having added sugars on the Nutrition Facts label makes it significantly easier for programs to comply with an added sugars standard. Moreover, setting an added sugars limit in school meals and competitive foods could encourage industry innovation to reformulate and reduce the added sugars in common foods served and sold in schools.

Policy Recommendation:

• Include a limit for added sugars in the school nutrition standards (meals and competitive foods).

Sodium

More than 90 percent of school-age children consume too much sodium, a risk factor for high blood pressure and many other health problems. ³⁷ High blood pressure was once generally considered to be an illness that affected mainly middle-aged and older individuals, yet one in seven U.S. youth aged 12–19 years had high blood pressure or elevated blood pressure in 2013–2016. ³⁸ High blood pressure increases the risk for heart disease and stroke, two leading causes of death in the U.S. ³⁹ The National Academies of Sciences, Engineering, and Medicine updated the Dietary Reference Intake (DRI) for sodium in 2019, and lowered the recommended amount of sodium that children should consume to reduce chronic disease risk. ⁴⁰ Instead of weakening the sodium standards, the new DRI indicates that the sodium standards need to be strengthened.

Policy Recommendation:

• Strengthen the sodium standards in the school nutrition standards to align with the updated sodium Dietary Reference Intake.

School Breakfast Program Nutrition Standards

As mentioned in the added sugars section, school breakfast often consists of sugary grains (sweetened cereals, French toast sticks, pancakes, pastries, etc.). The proposed rollbacks to the SBP nutrition standards would leave SBP even less nutritious, with more processed grains and potatoes and less fruit. In addition to the whole grain rollback, USDA has proposed halving the fruit requirement for breakfast served outside of the cafeteria and is seeking public input on whether it should further revise the breakfast fruit requirement to substitute any vegetable, including starchy vegetables. Swapping any vegetable for fruit would mean schools could offer more potatoes, like hash browns, tator tots, or home fries. Reducing whole grains and fruit in SBP reduces fiber. The DGA classifies fiber as a nutrient of public health concern, because Americans do not consume enough of it.³⁰

Currently, offering milk is the only protein requirement in SBP. While milk is a good source of protein, not all SBP participants are consuming the milk. ⁴¹ Some students may have intolerances, allergies, or dietary preferences that prevent them from drinking milk. Children do consume enough protein, ³⁰ so an additional protein requirement is not necessary. The protein source in the SBP could be broadened to include options like dairy, soy, eggs, beans, plant-based meats, and other lean protein sources. The protein source would

[§] Manufacturers with less than \$10 million in annual food sales will need to comply with the law January 1, 2021.

need to meet sodium and saturated fat standards and any meats should be lean or extra lean. Processed meats should be minimized and if offered, should be free of added nitrates/nitrites.

Policy Recommendation:

• Strengthen the School Breakfast Program nutrition standards to increase whole grains and fiber, reduce added sugars, and ensure a good source of protein.

Food Security

In 2018, 11.2 million children living in the U.S. were food insecure. ⁴² This number is likely to rise in the economic recession following COVID-19. Before COVID-19, data showed that 1 in 9 U.S. households were food insecure. Emerging data show that as of May 2020, the rate had already increased to 1 in 5 households (2 in 5 for families with children). ⁴³ NSLP and SBP are essential nutrition assistance programs and an important community safety net to ensure children have access to healthy foods throughout the school year. Research from the USDA has found that children from food-insecure and marginally secure households were more likely to eat school meals and receive more of their food and nutrient intake from school meals than did other children. ⁴⁴ A longitudinal study found that NSLP participation was associated with a 14 percent reduction in the risk of food insufficiency among households with at least one child receiving a free or reduced-price school lunch. ⁴⁵ The following sections go into more detail on food security for school-aged children.

Summer Food Service Program

It is important to ensure children have access to nutritious meals year-round. Research shows that rates of food insecurity among children are higher in the summer—a time when children do not have access to NSLP and SBP, which are only available during the academic year. 46 The Summer Food Service Program (SFSP) plays a critical role in closing the summer nutrition gap that exists for under-resourced families when the academic year ends. Yet, only one in seven children who consumed free or reduced-price lunches during the 2017-2018 school year participated in Summer Nutrition Programs in July 2018—leaving a large gap for many families. 47

SFSP is often combined with educational, recreational, or other enrichment activities. Data have shown it may be effective in reducing the most severe form of low food security for under-resourced families with children. ⁴⁸ An analysis of SFSP sites using 2015 data found that on average sites only operate for 7 weeks in the summer. ⁴⁹ The majority of those SFSP sites were in urban areas (53 percent), with 24 percent of sites in rural areas and 23 percent in suburban areas. ⁴⁹ More than half of the participants were elementary schoolaged children, 11 percent were preschool, 18 percent middle school, and 19 percent high school. ⁴⁹ Transportation to sites can be a barrier, yet in 2015 only 18 percent of sites offered transportation. For the sites that did offer transportation, the majority of children used it. ⁴⁹

Unlike the NSLP and SBP, the SFSP meal pattern does not have requirements for whole grains, vegetable subgroups, calorie ranges, or limits on sodium or saturated fat intake. ⁵⁰ Yet, the DGA reports that children in the U.S. do not consume enough whole grains and vegetables and consume too much saturated fat and sodium. ³⁰ There is very limited data on the nutritional adequacy of SFSP or on the dietary intakes and nutritional health of SFSP participants. ⁵¹

In an effort to expand program participation, USDA is piloting different ways of delivering SFSP benefits to eligible families. A pilot has been in place to offer additional resources to families whose children receive free or reduced-price meals during the school year through the Summer Electronic Benefit Transfer for Children (Summer EBT). While it is ideal to offer meals along with educational, recreational, or enrichment programming, like with traditional SFSP sites, Summer EBT can help children access food even when programming is not available. Because this is still in the pilot phase, Summer EBT currently only reaches a small number of children. Under the 2011 and 2012 pilot model, families with children who receive free or reduced-price lunch received either a \$60 or \$30 monthly benefit following either a SNAP model or WIC model. With the SNAP model, families can purchase any SNAP eligible foods. Under the WIC model, families were authorized to redeem specified quantities of WIC-approved foods in eight categories and up to a specified dollar value of qualifying fruits and vegetables. ⁵²

When comparing the \$60 benefit to no benefit, the reduction in food security was substantively large and statistically significant. The benefit decreased the prevalence of the most severe food insecurity among children by one-third and reduced the prevalence of food insecurity among children by nearly a fifth. The impact of the \$30 benefit was about half that of the \$60 benefit. ⁵²

Across all evaluations, Summer EBT improved dietary quality for most of the nutrition outcomes measured by the evaluation.⁵² For most nutrition outcomes, there was a statistically significant increase for both the SNAP model and WIC model, but impact on children's nutrition with the WIC model was twice that of the SNAP model. The \$30 benefit showed smaller improvements in diet quality compared to the \$60 benefit.⁵² Summer EBT should be expanded to all 50 states and when possible should follow the WIC model. Summer EBT could be particularly beneficial in rural areas where SFSP is more limited.

Policy Recommendation:

 Support expanding the Summer Food Service Program and Summer EBT and update the Summer Food Service Program nutrition standards to align with the current Dietary Guidelines for Americans.

Unexpected School Closures

It is also important to make sure children continue to receive nutritious meals during extended school closures.⁵³ The continuation of school meal programs in a safe, workable form during a disaster response or in the case of a public health emergency is critical. During the COVID-19 pandemic, school nutrition professionals mobilized in an unprecedented way playing an important role in ensuring children continued to receive meals during extreme circumstances, with many shifting to an emergency feeding model for their communities. Researchers must assess how school meal service programs continued to serve food to children and the community—including how the USDA state waivers were utilized—during the COVID-19 pandemic to determine how to better prepare school meal programs for future crises.

Policy Recommendation:

• Use research on school food operations and utilization during the COVID-19 pandemic to inform policy approaches to strengthen the school meals program for future crises.

Community Eligibility Provision

As part of the HHFKA, Congress created a universal meal option—the Community Eligibility Provision (CEP)—through which schools in under-resourced communities can provide free meals to all students and do not need eligible students individually apply.⁵⁴ CEP was phased into a few states at a time before it was expanded nationwide in SY 2014–2015. During SY 2018–2019, 28,614 schools and 4,698 school districts participated in CEP, which served healthier meals to more than 13.6 million children. In SY 2018–2019, more than half (53.8 percent) of all eligible school districts and 64.6 percent of eligible schools nationwide participated in CEP.⁵⁵

Schools that participate in CEP often see increased participation in school meals and a reduced paperwork burden, allowing school nutrition professionals to focus less on program administration and more directly on offering and preparing healthy, appealing meals.^{56,57} CEP reduces stigma that school meals are only for children from under-resourced families.⁵⁵ In addition, when schools do not need to collect fees for paid and reduced-price meals, students can move more quickly through the cafeteria line, potentially giving children, especially the youngest and most vulnerable children, more time to eat.⁵⁵

Policy Recommendation:

• Continue to implement and expand the Community Eligibility Provision, allowing communities to offer free meals to all students.

Universal Meals

In addition to CEP, universal meals is another option for increasing school meal participation, reducing stigma of eating school meals, and reducing burden on school food service programs and families. Universal meals allow all enrolled children in a school that operates the National School Lunch Program or School Breakfast Program to receive free breakfast and free lunch, regardless of their family's income. Universal meals also negates the need for families to apply or schools to verify eligibility for the programs.

Universal meals operates differently than CEP. Under universal meals school food programs would get reimbursed at the free rate for all children who eat lunch or breakfast at schools. Some proposals for universal meals suggest reimbursing lower-income schools at higher rates, in order to make the system even more equitable. Under CEP, schools with 40 percent or more of students who are directly certified through programs like the Supplemental Nutrition Assistance Program (SNAP), the Temporary Assistance for Needy Families (TANF), or Medicaid can serve breakfast and lunch for free to the entire school or district. With CEP, schools are reimbursed according to the percentage of directly certified children.

Universal meals ensure that all students receive two free, healthy meals every school day and benefits families by reducing the burden on families to complete the eligibility paperwork; ensuring that students on the edges of eligibility, those whose families may move in and out of eligibility, or are in the foster care system always receive healthy meals; and mitigating stigma and lunch shaming. For the school food service program, universal meals reduces administrative burden, provides a steady budget, eliminates unpaid meal balances, helps the lunch line move faster, and takes pressure off of school food service programs to increase revenue by serving foods that may be lower in nutritional quality.

Policy Recommendation:

• Adopt universal meals and allow all students to receive free breakfast and lunch while in school.

School Breakfast Program

SBP availability can reduce food insecurity among elementary school children.⁵⁸ Daily participation in SBP has been associated with higher diet quality over a 24-hour period—a cross sectional observation study conducted between 2013-2015 among 4-15 year old children, found that consuming school breakfast daily resulted in higher intakes of fruits, vegetables, legumes, whole grains, and dietary fiber compared to students who did not eat school breakfast every day.⁵⁹ Students in 4th and 5th grade who participated in breakfast in the classroom had higher overall diet quality and did not have higher mean energy intakes from breakfast nor higher daily energy intakes than students who ate breakfast at home, in the cafeteria, or second chance breakfast.⁶⁰

There are concerns that children participating in breakfast in the classroom are also eating a breakfast at home—thus consuming two breakfasts, which might cause them to gain weight. A longitudinal observational study of middle school students found that those who regularly consume breakfast at school were more likely to have a healthy weight trajectory, that weight changes from year to year were similar between students who consumed two breakfasts, and there were increased odds of overweight or obesity among frequent breakfast skippers compared with students who consumed breakfast.⁶¹

A recent systematic review documented that breakfast consumption in particular has a positive association with academic achievement.²⁵ Another systematic review compared the effects of breakfast consumption with breakfast skippers and found that breakfast consumption aided tasks requiring attention, executive function, and memory more reliably than among children and adolescents who did not eat breakfast.⁶² There are also data to suggest that a universal breakfasts program can increase both school attendance and test scores in elementary school students.⁶³

Offering breakfast at school has been shown to improve diet quality, and may impact academic achievement and attendance, but more research is needed to determine whether the different school breakfast models (breakfast in the classroom, breakfast after the bell, universal breakfast, etc.) have different outcomes.

Policy Recommendation:

School Breakfast Program should be supported to ensure it is reaching all students. More research
is needed to determine whether the various school breakfast models (breakfast in the classroom,
breakfast after the bell, universal breakfast, etc.) have different health and educational outcomes.

Fresh Fruit and Vegetable Program

Only 1.5 percent of children living in the U.S. consume the amount of vegetables recommended by the DGA and 3-14 percent of children eat the recommend amount of fruit.⁶⁴ The Fresh Fruit and Vegetable Program (FFVP) targets elementary school children from the most under-resourced families and provides a free fruit or vegetable snack in the classroom, often coupled with nutrition education. Each student receives the equivalent of \$50-75 worth of fresh produce over the school year.⁶⁵ The intent of the FFVP is to introduce children to new and different fresh fruits and vegetables, so the program requires the produce to be served in a way that it is easy to identify, which encourages children to enjoy fruits and vegetables "as they are."

Students in schools participating in the FFVP have reported higher daily fresh and total fruit and vegetable intake in school and higher total fresh fruit and vegetable intake out of school compared to those in non-participating schools. ⁶⁶ On average, daily fruit and vegetable intake was one-third of a cup per day higher in schools that participate in FFVP. ⁶⁶ Without this program, the children eligible for FFVP have the lowest intake of fruits and vegetables and are at the greatest risk of poor health outcomes. ⁶⁷

Policy Recommendation:

- Maintain the integrity of the Fresh Fruit and Vegetable Program by allowing only fresh fruits and vegetables to be offered.
- Expand the Fresh Fruit and Vegetable Program to reach all eligible schools.

Unpaid Meal Debt

The USDA required all school districts that participate in the NSLP to establish and clearly communicate an unpaid school meals fees policy before the start of the 2017–2018 school year. ⁶⁸ USDA did not provide any national standards on how to address unpaid meals. As a result, 'lunch shaming' has emerged in recent years. 'Lunch shaming' is the practice of denying students school lunch or giving an alternative meal, that does not include all the nutritional components of the school meal (e.g., only a sunflower butter and jelly sandwich), because of unpaid school meal fees. Both approaches can create stigma, causing children to stand out from their peers and embarrass them. The School Nutrition Association reported that 75.1 percent of school districts across the country have outstanding debt from unpaid meals. ⁶⁹ All students should have access to adequate nutrition during the school day. Unpaid meal policies should be designed to ensure students still have access to full school meals. Students should not be singled out for their unpaid debt. Schools should communicate directly with parents or caregivers about unpaid debt, as well as to assess food security issues. Efforts should be taken to ensure all students eligible for free or reduced-price meals are categorized correctly. Adopting the universal Community Eligibility Provision would also mitigate—if not eliminate—lunch shaming.

Policy Recommendation:

• Put policies in place to deal with unpaid meal debt that do not stigmatize children or prevent them receiving the full school meal.

Strategies to Reduce Food Waste

According to USDA's *School Nutrition and Meal Cost Study* food waste has not increased since the implementation of the HHFKA and it was a problem before the most recent meal pattern updates. ¹⁵ Some studies have even suggested that food waste has decreased since the 2012 nutrition standards. ^{70,71} Another regional study looking at food selection and food waste before and after the updated standards were implemented found increased fruit selection and no differences in food waste from fruit, whole grains, or vegetables. ⁷² A systematic review of studies of school food waste from 1978 to 2015 found that the percent of food wasted has largely remained the same since the 1970s. ⁷³ Despite the USDA's own *School Nutrition and Meal Cost Study* finding that food waste has remained the same, the USDA cited food waste reduction as one way to justify the 2018 and 2020 nutrition standard rollbacks.

Simple changes in how the school day is structured, such as time of day lunch is served, length of lunch, and practices to give children more time to eat can reduce plate waste.⁷⁴ USDA found that starting lunch at

12:00 PM or later was associated with a significantly lower percentage of calories wasted than starting before 11:30 AM (18 percent vs 20 percent). Research has shown that students need at least 20 minutes in their seats to eat lunch. However, nearly 50 percent of schools do not require, nor make the recommendation, that students receive at least 20 minutes to consume their meal. According to the Centers for Disease Control and Prevention (CDC), longer lunch periods allow for increased consumption of healthy foods and decreased plate waste. Schools should provide at least 30 minutes for the lunch periods to account for time to stand in line, acquire a meal, acquire potable water, and socialize. At the elementary level recess before lunch may improve school meal consumption.

To reduce waste further, school nutrition programs should modify their practices to help give children more time to eat. School nutrition programs can train staff to efficiently move children through the meal line, offer grab-n-go options, prepare fruits and vegetables that are easier to consume, and take advantage of universal school meal options like the CEP.⁷⁷ The USDA, in coordination with the U.S. Department of Education, should develop guidance on timing and length of lunch to help schools address this issue.

Better use of offer versus serve (OVS) can also help to reduce plate waste. OVS is a provision in NSLP and SBP that allows students to decline some of the food offered as part of the meal. OVS is intended to allow students to choose the foods they want to eat increasing the chances they will consume the foods they take while reducing food waste. USDA data show that OVS helps to reduce food waste. When students and cafeteria staff better use OVS, meal lines can move quicker, allowing students more time to eat and enjoy the foods they are served. OVS also helps reduce overall food costs. Use Currently, OVS is required only for high school students for lunch and is optional at all grade levels for breakfast. With proper guidelines and education, schools can use OVS for lunch in elementary and middle schools as well, maintain good nutrition standards, and achieve reimbursement requirements.

A variety of other strategies have been suggested to reduce school food waste as well. The USDA recommends using better purchasing practices and involving students through taste tests, competitions, and gathering feedback on food acceptability to reduce waste.⁸¹ Use of innovative equipment has been shown to help mitigate food waste, including the purchase of bulk milk machines, which one report showed could increase consumption of milk and reduce waste in some school districts.⁸⁰ Additional strategies for decreasing plate waste include participating in farm-to-school programs, incorporating technical assistance, salad bars, partnering with local chefs or culinary schools, making healthier versions of familiar, culturally appropriate foods, promoting menus on social media, and using creative and fun games.^{82,83,84,85,86,87,88}

Instead of weakening the nutrition standards and compromising children's health, efforts to reduce food waste should focus on solutions that effectively address the problem while not compromising children's diet quality and health.

Policy Recommendations:

- Support school nutrition professionals through training, technical assistance, and other approaches to help them reduce food waste without weakening the school nutrition standards.
- Urge U.S. Department of Agriculture, in coordination with the U.S. Department of Education, to develop guidance on timing and length of lunch to help schools address this issue.
- Improve the lunch period through appropriate time of day and length of lunch, as well as overall cafeteria environment.

Support Food Service Programs

Enhanced Technical Assistance and Training

According to the School Nutrition and Meal Cost Study, when school nutrition professionals were asked to list challenges they encountered while implementing the new meal patterns they ranked staff training as a three on a five-point scale, indicating that it was a significant challenge. 15 All states report that they provide training and technical assistance on administrative practices to school food authorities. Almost all states report providing training on identification of reimbursable meals at the point of service (98 percent), nutrition and accuracy of approvals for free and reduced-price meals (96 percent), and health and food safety standards (93 percent). More than three-quarters of states (78 percent) reported providing training on the efficient and effective use of USDA Foods (commodities).⁸⁹ While these trainings are important, they do not address the challenges cited by the USDA to justify rollbacks to the nutrition standards. A study analyzing qualitative interviews with food service directors found that targeted technical assistance at the federal, state, and local level could help with meeting the 2012 sodium, whole grain, and flavored milk standards. 90 A report from The Pew Charitable Trusts found that providing school food service team members with the training they need is a critical step in meeting the updated nutrition standards. 91 Increased funding for the Institute of Child Nutrition, as well as a robust training and technical assistance plan by the USDA on sodium and whole grains compliance, will help meet the needs of school food service programs.

Policy Recommendation:

 Continue to increase support to provide nutritious, appealing meals through training and technical assistance.

Kitchen Equipment

One barrier to efficiently meeting the school meal standards is outdated infrastructure for food storage and preparation. Since 2009, when the first funds were authorized under the American Recovery and Reinvestment Act as part of the infrastructure investment, the USDA has provided approximately \$160 million in kitchen equipment grants. ⁹² Yet, three out of five school districts still report needing new equipment. ⁸⁹ In 2013, 88 percent of schools reported needing at least one piece of kitchen equipment. ⁹³ Many schools are preparing nutritious meals despite having inadequate facilities and tools. Instead, their outdated kitchens and tools may cause them to rely on costly and inefficient "workarounds." Schools need facilities and equipment capable of cost-efficient cooking with healthier, fresher ingredients. Updated equipment could also help with food waste issues. ⁸⁰

One way that schools have been able to meet some infrastructure needs while increasing access to fruits and vegetables is the Salad Bars to Schools initiative. Salad Bars to Schools launched in 2010 with the mission of donating salad bars to U.S. schools to increase fruit and vegetable consumption. A 2014 evaluation of the initiative found that salad bars were an effective strategy to increase student's fruit and vegetable intake, 78 percent are used daily, and 57 percent of schools saw an increase in the school meals participation as a result of the salad bars. The USDA encourages the use of salads in NSLP and SBP as an

effective way to increase access and consumption of fruits and vegetables and state salad bars may lower food waste by allowing students to only take the items they want to consume.⁹⁶

Policy Recommendation:

Increase investment in infrastructure through equipment grants and salad bars.

Reimbursement and Commodity Support

Schools need adequate funding to purchase, prepare, and serve healthy, quality foods. For the average school food authority (SFA), total revenues covered 97 percent of total reported costs, indicating that the average SFA operates at a small deficit. The greatest challenge reported by SFAs in meeting the updated nutrition standards was food costs and availability of foods. SFAs also reported that staff training, equipment, and infrastructure are needed to meet the updated nutrition standards.

In FY 2019, for the first time, Congress allocated \$20 million to be directed to school breakfast. While HHFKA did increase reimbursement for lunches, it did not increase the reimbursement for breakfast despite stating that breakfast costs would increase 27 cents per meal. ¹⁰ In the absence of an additional reimbursement for SBP, schools should be able to increase the use of USDA Foods (commodities) to help with the increased breakfast costs. USDA Foods purchases domestically grown and produced foods for use in schools and other institutions that participate in NSLP. Increasing the amount of USDA Foods that schools can receive, will provide more food to schools so the reimbursement can go further.

Policy Recommendation:

 Increase reimbursement levels and commodity support to support schools' ability to offer nutritious meals.

Policy Recommendations

Despite some growing pains and challenges, schools have stepped up to the plate and are serving more healthy meals than ever. To keep the school meals program strong and help ensure children living in the U.S. have access to nutritious food throughout the year, the American Heart Association will continue to advocate for robust school nutrition standards, expanding access to the school meals program—including programs over the summer and during school closures—and supporting school nutrition staff to ensure staff are able to serve nutritious foods. These critical programs support the health and wellbeing of children living in the U.S.

Policy Recommendations

Maintain robust school nutrition standards for meals and competitive foods to ensure the health and wellbeing for all children, especially those who experience food insecurity, and the success of the programs.

Prevent and reverse any rules that weaken the school nutrition standards to ensure the nutrition standards are aligned with the most current Dietary Guidelines for Americans, as required by law, and the updated Dietary Reference Intake for sodium.

Include a limit for added sugars in the school nutrition standards (meals and competitive foods).

Strengthen the sodium standards in the school nutrition standards to align with the updated sodium Dietary Reference Intake.

Strengthen the School Breakfast Program nutrition standards to increase whole grains and fiber, reduce added sugars, and ensure a good source of protein.

Support expanding the Summer Food Service Program and Summer EBT pilot and update the Summer Food Service Program nutrition standards to align with the current Dietary Guidelines for Americans.

Use the research on school food operations and utilization during the COVID-19 pandemic to inform policy approaches to strengthen the school meals program for future crises.

Continue to implement and expand the Community Eligibility Provision, allowing communities to offer free meals to all students.

Adopt universal meals and allow all students to receive free breakfast and lunch while in school.

School Breakfast Program should be supported to ensure it is reaching all students who do not receive a healthy breakfast at home.

Maintain the integrity of the Fresh Fruit and Vegetable Program by allowing only fresh fruits and vegetables to be offered.

Expand Fresh Fruit and Vegetable Program to reach all eligible schools.

Put policies in place to deal with unpaid meal debt that do not stigmatize children or prevent them receiving the full school meal.

Support school nutrition professionals through training, technical assistance, and other approaches to help them reduce food waste without weakening the nutrition standards.

Urge U.S. Department of Agriculture, in coordination with the U.S. Department of Education, to develop guidance on timing and length of lunch to help schools address this issue.

Improve the lunch period through appropriate time of day and length of lunch, as well as overall cafeteria environment.

Continue and increase support to provide nutritious, appealing meals through training and technical assistance.

Increase investment in infrastructure through equipment grants and salad bars.

Appendix

The 2018 and 2020 efforts to weaken the National School Lunch Program, School Breakfast Program, and Smart Snack nutrition standards are harmful to students' health.

Sodium	The 2018 rollback would delay the second phase of sodium reduction to the 2024-25
	school year and eliminate the third and final phase of sodium reduction. More than
	90 percent of school-age children consume too much sodium, a risk factor for high
	blood pressure and many other health problems. ³⁷ High blood pressure was once
	generally considered to be an illness that affected mainly middle-aged and older
	individuals, yet one in seven U.S. youth aged 12–19 years had high blood pressure or
	elevated blood pressure in 2013–2016. ³⁸ High blood pressure increases the risk for
	heart disease and stroke, two leading causes of death in the U.S. ³⁹ According to the
	School Nutrition and Meal Cost Study, the vast majority of schools (85 percent) met
	or were close to meeting the first sodium-reduction target (in school year SY 2014-
	2015). 15 The National Academies of Science updated Dietary Reference Intake (DRI)
	for sodium lowers the recommended amount of sodium that children should
	consume to reduce chronic disease risk. 40 The updated DRI coupled with children's
	high consumption of sodium solidifies that the sodium standards for school meals
	need to be strong. With technical assistance, training, and industry innovation,
Whale	schools can meet the stronger sodium reduction standards.
Whole Grain	The 2018 rollback would cause the whole grain standard to shift from having all grain
	servings be whole grain-rich (at least 50 percent whole grain), to only having half of
	the grain servings be whole grain-rich. Diets high in whole grains and fiber have been
	associated with increased diet quality and decreased risk of heart disease, stroke,
	and diabetes. ^{30, 97} There is also evidence that people who eat whole grain foods—
	particularly those that are high in fiber and lower in sugar—have a lower body
	weight than those who eat fewer whole grains. ³⁰ Unfortunately, children ages 4 to 18 do not meet the recommended intake for whole grains and exceed the recommended
	limit for refined grains. 98 A study of approximately 400 U.S. elementary and middle
	schools from 2013-2015, found that most schools reported that most grains (82
	percent) offered at lunch were whole grain-rich. ⁹⁹
Flavored Milk	Under the 2018 rollback, USDA would allow flavored milk to be both fat-free and low-
	fat. Whereas under the updated standards implemented in 2012, flavored milk could
	only be fat-free. While milk provides key important nutrients, most notably
	potassium, calcium, and Vitamin D, ³⁰ these changes will result in added calories,
	saturated fat, and added sugars. There is also no calorie limit on flavored milk, which
	is problematic with no added sugars standard. One study of two K-8 th grade schools
	in an urban district found that when flavored milk was removed from cafeterias,
	student selection of plain milk increased two years after the change, ultimately
	resulting in higher per-capital milk consumption. 100
Vegetable	In 2012, the USDA established weekly vegetable subgroup minimums to encourage
Subgroups	consumption from a variety of vegetables. ¹⁰ The requirement was supported by the
	2010 Dietary Guidelines for Americans (DGA), which recommended that Americans
	increase variety in vegetable consumption, "especially dark green, red and orange
	vegetables, and beans and peas (legumes)." ¹⁰ Yet, in the 2020 proposed rollback

USDA has proposed revising this requirement and reducing the amount of red/orange and "other" vegetables that must be served each week. This change would allow schools to serve a smaller variety of vegetables and would likely lead to schools replacing healthful red/orange and "other" vegetables like carrots, cucumbers, green peppers, and sweet potatoes with starchy vegetables such as French fries. Starchy vegetables already account for 47.5 percent of all vegetables offered in the NSLP. with the highest amount of starchy vegetables served in middle schools (53.2 percent). Of these, French fries and similar potato products are the most common starchy vegetable served. According to the 2015 DGA, children do not meet the recommended amounts of vegetables. 101 Potatoes are the most commonly consumed vegetable, accounting for 21 percent of all vegetable consumption.³⁰ Providing schools with more "flexibility" in the vegetable subgroups will likely result in schools serving more French fries rather than healthier options. Yet, the USDA's School Nutrition and Meal Cost Study found that 93.6 percent of lunch menus meet the minimum weekly requirements for red/orange vegetables and 92.1 percent meet the weekly requirements for "other" vegetables. 15

¹ U.S. Department of Agriculture; Food and Nutrition Service. National School Lunch Program: Participation and lunches served (data as of February 14, 2020). https://fns-prod.azureedge.net/sites/default/files/resource-files/slsummar-2.pdf. Accessed March 17, 2020.

² U.S. Department of Agriculture; Food and Nutrition Service. School Breakfast Program: Participation and meals served (data as of February 14, 2020). https://fns-prod.azureedge.net/sites/default/files/resource-files/sbsummar-2.pdf. Accessed March 17, 2020.

³ U.S. Department of Agriculture; Food and Nutrition Service. National School Lunch Program (data as of February 14, 2020). https://fns-prod.azureedge.net/sites/default/files/resource-files/36slmonthly-2.pdf. Accessed March 17, 2020.

⁴ U.S. Department of Agriculture. Economic Research Service. National School Lunch Program. https://www.ers.usda.gov/topics/food-nutrition-assistance/child-nutrition-programs/national-school-lunch-program/. Accessed March 17, 2020.

⁵ U.S. Department of Agriculture; Food and Nutrition Service. U.S. Department of Agriculture; Food and Nutrition Services. School Nutrition and Meal Cost Study. April 2019. https://www.fns.usda.gov/school-nutrition-and-meal-cost-study. Accessed April 6, 2020.

⁶ U.S. Department of Agriculture. Child Nutrition Tables: National Level Annual Summary Tables: FY 1969-2019. Washington, DC: USDA; 2019.

⁷ Child Nutrition and WIC Reauthorization Act of 2004, Pub. L. No. 108-265, 118 Stat. §103

⁸ Institute of Medicine. (2009). School Meals: Healthy Building Blocks for Healthy Children. http://www.nap.edu/read/12751/chapter/1. Accessed May 6, 2020.

⁹ Healthy Hunger-Free Kids Act of 2010, Pub. L. No. 111-296, 124 Stat. 3183, §§ 101-105,201-210.

¹⁰ U.S. Department of Agriculture; Food and Nutrition Service. Nutrition Standards in the National School Lunch and School Breakfast Programs; Final Rule. 2012. 7 CFR Parts 210 and 220.

https://www.govinfo.gov/content/pkg/FR-2012-01-26/pdf/2012-1010.pdf. Accessed March 17, 2020.

¹¹ U.S. Department of Agriculture; Food and Nutrition Service. National School Lunch Program and School Breakfast Program: Nutrition Standards for All Foods Sold in School as Required by the Healthy, Hunger-Free Kids Act of 2010. Final Rule. 2016. 7 CFR Parts 210 and 220. https://www.govinfo.gov/content/pkg/FR-2016-07-29/pdf/2016-17227.pdf. Accessed April 15, 2020.

¹² Gortmaker SL, Wang YC, Long MW, Giles CM, Ward ZJ, Barrett JL, Kenney EL, Sonneville KR, Afzal AS, Resch SC, Cradock AL. Three interventions that reduce childhood obesity are projected to save more than they cost to implement. *Health Aff*. 2015;34:1932-9. doi: 10.1377/hlthaff.2015.0631.
¹³ U.S. Department of Agriculture; Food and Nutrition Service. Child Nutrition Programs: Flexibilities for Milk, Whole Grains, and Sodium Requirements; Final Rule. 2018. 7 CFR Parts 210, 215, 220, and 226. https://www.govinfo.gov/content/pkg/FR-2018-12-12/pdf/2018-26762.pdf. Accessed March 17, 2020.

¹⁴ U.S. Department of Agriculture; Food and Nutrition Service. Simplifying Meal Service and Monitoring Requirements in the National School Lunch and School Breakfast Programs; Final Rule. 2020. 7 CFR Parts 210, 215, 220, 226, and 235. https://www.govinfo.gov/content/pkg/FR-2020-01-23/pdf/2020-00926.pdf. Accessed March 17, 2020.

¹⁵ U.S. Department of Agriculture; Food and Nutrition Service. U.S. Department of Agriculture; Food and Nutrition Services. School Nutrition and Meal Cost Study. April 2019. https://www.fns.usda.gov/school-nutrition-and-meal-cost-study. Accessed March 17, 2020.

¹⁶ The Pew Charitable Trusts and the Robert Wood Johnson Foundation. School Meal Programs Innovate to Improve Student Nutrition. Published December 2016. https://www.pewtrusts.org/-/media/assets/2016/12/school_meal_programs_innovate_to_improve_student_nutrition.pdf. Accessed April 6, 2020.

- ¹⁷ The Pew Charitable Trusts. Parents Support Healthier School Food Policies by 3-to-1 Margin. September 2014. https://www.pewtrusts.org/en/about/news-room/press-releases-and-statements/2014/09/08/parents-support-healthier-school-food-policies-by-3to1-margin. Accessed April 7, 2020.
- ¹⁸ Turner L, Chaloupka FJ. 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. *Child Obes.* 2014; 10:349-56. 10.1089/chi.2014.0038. Epub 2014 Jul 21.
- ¹⁹ W.K. Kellogg Foundation. Poll: Nine out of 10 Americans Want to Keep School Meals Healthy. August 2015. https://www.wkkf.org/news-and-media/article/2015/08/poll-nine-out-of-10-americans-want-to-keep-school-meals-healthy. Accessed April 7, 2020.
- ²⁰ U.S. Department of Agriculture. Percent of School Food Authorities (SFA) certified for the performance-based reimbursement as of June 2016. 2016. Retrieved from: https://fns-prod.azureedge.net/sites/default/files/cn/SFAcert_FY16Q4.pdf. Accessed April 26, 2020.
- ²¹ U.S. Department of Agriculture. School Nutrition Dietary Assessment Study IV. 2012. Available at http://www.fns.usda.gov/school-nutrition-dietary-assessment-study-iv. Accessed April 26, 2020.
- ²² Johnson DB, Podrabsky M, Rocha A, et al. Effect of the Healthy Hunger-Free Kids Act on the Nutritional Quality of Meals Selected by Students and School Lunch Participation Rates. *JAMA Pediatr.* 2016;170:e153918.
- ²³ Schwartz MB, Henderson KE, Read M, et al. New School Meal Regulations Increase Fruit Consumption and Do Not Increase Total Plate Waste. *Child Obes*. 2015;11:242-7.
- ²⁴ Farris AR, Misyak S, Duffey KJ, Davis GC, Hosig K, Atzaba-Poria N, et al. 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. *J Nutr Educ Behav*. 2014; 46:621-6. doi: 10.1016/j.jneb.2014.07.007.
- ²⁵ Burrows T, Goldman S, Lim R. Is there an association between dietary intake and academic achievement: a systematic review. Journal of Human Nutrition and Dietetics. 2016; 30(2).: 117-140.
- ²⁶ Anzman-Frasca, S, et al. Estimating Impacts of a Breakfast in the Classroom Program on School Outcomes. JAMA pediatrics. 2015; 169.1: 71-77. https://jamanetwork.com/journals/jamapediatrics/fullarticle/1939309.
- ²⁷ Micha R, Karageorgou D, Bakogianni I, Trichia E, Whitsel LP, Story M, Peñalvo JL, Mozaffarian D. Effectiveness of school food environment policies on children's dietary behaviors: a systematic review and meta-analysis. *PLoS One*. 2018; 13:e0194555. doi: 10.1371/journal.pone.0194555.

 ²⁸ Lott M, Miller L, Arm K, Story M. Rapid Health Impact Assessment on USDA Proposed Changes to School Nutrition Standards. March 2020.
- https://healthyeatingresearch.org/research/rapid-health-impact-assessment-on-usda-proposed-changes-to-school-nutrition-standards/. Accessed March 23, 2020.
- ²⁹ Taber DR, Chriqui JF, Powell L, Chaloupka FJ. Association Between State Laws Governing School Meal Nutrition Content and Student Weight Status: Implications for New USDA School Meal Standards. *JAMA Pediatr*. 2013; 167:513-9.
- ³⁰ U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2015–2020 Dietary Guidelines for Americans. 8th Edition. December 2015. http://health.gov/dietaryguidelines/2015/guidelines/.
- ³¹ Vos MB, Kaar JL, Welsh JA, Van Horn LV, Feig DI, Anderson CAM, et al. Added sugars and cardiovascular disease risk in children: a scientific statement from the American Heart Association. *Circulation*. 2017; 135:e1017-e1034. doi: 10.1161/CIR.0000000000000439.
- ³² Bowman SA, Clemens JC, Friday JE, Schroeder N, and LαComb RP. Added Sugar in America Children's Diet: What We Eat in America, NHANES 2015-2016. Food Surveys Research Group. Dec 2019. Dietary Brief No. 26.
- ³³ Lengyel, Jennifer G. MS, RDN, LD; Cramer, Nan RDN, LD; Oceguera, Amanda MS, RDN, LD; Pigao, Lana MA; and Houston Independent School District, Nutrition Services Department (2015) "Sugar In School Breakfasts: A School District's Perspective," Journal of Applied Research on Children: Informing Policy for Children at Risk: Vol. 6: Iss. 2, Article 7. Available at:http://digitalcommons.library.tmc.edu/childrenatrisk/vol6/iss2/7 https://files.eric.ed.gov/fulltext/EJ1188504.pdf. Accessed April 17, 2020.
- ³⁴ The Center for Investigative Reporting. No limits on sugar in school lunches. October 2013.
- https://www.sandiegouniontribune.com/news/watchdog/sdut-cir-sugar-school-lunches-no-limits-2013oct03-story.html. Accessed April 26, 2020.
- ³⁵ Siegel BE. Why There is So Much Sugar in Your Kid's School Breakfast. September 2015. https://civileats.com/2015/09/24/why-there-is-so-much-sugar-in-your-kids-school-breakfast/. Accessed April 26, 2020.
- ³⁶ Kuzemchak S. You won't believe how much sugar is in most school breakfasts. https://www.parents.com/recipes/scoop-on-food/you-wont-believe-how-much-added-sugar-is-in-most-school-breakfasts/. Accessed April 25, 2020.
- ³⁷ Appel et al. Reducing Sodium Intake in Children: A Public Health Investment. Journal of Clinical Hypertension. 2015; 17:9; 657-662. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5034752/pdf/JCH-17-657.pdf
- ³⁸ Jackson SL, Zhang Z, Wiltz JL, et al. Hypertension Among Youths United States, 2001–2016. MMWR Morb Mortal Wkly Rep. 2018; 67:758–762. https://www.cdc.gov/mmwr/volumes/67/wr/mm6727a2.htm?s_cid=mm6727a2_w
- ³⁹ Yoon SS, Fryar C, Carroll M. Hypertension prevalence and control among adults: United States, 2011–2014. National Center for Health Statistics data brief.2015; (220):1–8. https://www.cdc.gov/nchs/data/databriefs/db220.pdf
- ⁴⁰ National Academies of Sciences, Engineering, and Medicine. 2019. Dietary Reference Intakes for Sodium and Potassium. Washington, DC: The National Academies Press. https://doi.org/10.17226/25353.
- ⁴¹ Blondin SA, Cash SB, Goldberg JP, Griffin TS, Economos CD. Nutritional, Economic, and Environmental Costs of Milk Waste in a Classroom School Breakfast Program. *Am J Public Health*. 2017;107(4):590-592. doi:10.2105/AJPH.2016.303647
- ⁴² Coleman-Jensen A, Rabbitt MP, Gregory CA, Singh A. Household Food Security in the United States in 2018, ERR-270, U.S. Department of Agriculture, Economic Research Service. 2019. https://www.ers.usda.gov/webdocs/publications/94849/err-270.pdf?v=963.1
- ⁴³ Brookings. The COVID-19 crisis has already too many children hungry in America. May 2020. https://www.brookings.edu/blog/up-front/2020/05/06/the-covid-19-crisis-has-already-left-too-many-children-hungry-in-america/. Accessed on May 16, 2020.

- 44 U.S. Department of Agriculture; Economic Research Service. Children's Food Security and Intakes from School Meals. Final Report. May 2010. https://naldc.nal.usda.gov/download/42320/PDF. Accessed March 17, 2020.
- ⁴⁵ Huang J, Barnidge E. Low-income children's participation in the National School Lunch Program and household food insufficiency. Soc Sci Med. 2016; 150:8-14. doi: 10.1016/j.socscimed.2015.12.020.
- 46 Huang, J., Barnidge, E., & Kim, Y. Children receiving free or reducedprice school lunch have higher food insufficiency rates in summer. Journal of Nutrition. 2015; 145(9), 2161-2168.
- ⁴⁷ Food Research and Action Center. Rethinking summer food: a new vision to reduce summer hunger. June 2019. https://frac.org/wpcontent/uploads/rethinking-summer-food-new-vision-to-reduce-summer-hunger.pdf. April 24, 2020.
- ⁴⁸ Miller DP. Accessibility of summer meals and the food insecurity of low-income households with children.
- Public Health Nutr. 2016 Aug;19(11):2079-89. doi: 10.1017/S1368980016000033. https://www.ncbi.nlm.nih.gov/pubmed/26878904
- ⁴⁹ U.S. Department of Agriculture. The summer food service program. March 2019. https://fns-prod.azureedge.net/sites/default/files/resourcefiles/sfsp-infographic.pdf Accessed March 20, 2020
- 50 U.S. Department of Agriculture; Food and Nutrition Service. Summer Food Service Program. 2000. CFR Part 225.16. https://www.ecfr.gov/cgibin/text-idx?SID=9a204059a02f38af6ec6f40aa14d0741&mc=true&node=pt7.4.225&ran=div5#sp7.4.225.a. Accessed March 17, 2020.
- ⁵¹ Hopkins LC, Gunther C. A Historical Review of Changes in Nutrition Standards of USDA Child Meal Programs Relative to Research Findings on the Nutritional Adequacy of Program Meals and the Diet and Nutritional Health of Participants: Implications for Future Research and the Summer Food Service Program. Nutrients 2015, 7, 10145-10167; doi:10.3390/nu712552 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4690075/pdf/nutrients-07-05523.pdf
- ⁵² Gordon AR, Briefel RR, Collins AM, Rowe GM, Klerman JA. Delivering summer electronic benefit transfers for children through the supplemental nutrition assistance program or the special supplemental nutrition program for women, infants, and children: Benefit use and impacts on food security and foods consumed. J Acad Nutr Diet. 2017;117(3):367-375.e2. doi: S2212-2672(16)31341-7 [pii].
- 53 Dunn, C.G., Kenney, E., Fleischhacker, S.E., & Bleich, S.N. Feeding low-income children during the Covid-19 pandemic. New England Journal of Medicine, 382(18):e40. doi: 10.1056/NEJMp2005638. Epub 2020 Mar 30. PMID: 32227759.
- ⁵⁴ U.S. Department of Agriculture; Food and Nutrition Service. Community Eligibility Provision. December 2018. https://www.fns.usda.gov/schoolmeals/community-eligibility-provision. Accessed April 8, 2020.
- 55 Food Research & Action Center. Community Eligibility: The Key to Hunger-Free Schools, School Year 2018-2019. May 2019. https://frac.org/wpcontent/uploads/community-eligibility-key-to-hunger-free-schools-sy-2018-2019.pdf. Accessed April 8, 2020.

 56 Logan, C. W., Connor, P., Harvill, E. L., Harkness, J., Nisar, H., Checkoway, A., Peck, L. R., Shivji, A., Bein, E., Levin, M., & Enver, A. Community
- Eligibility Provision Evaluation. 2014. http://www.fns.usda.gov/sites/default/files/CEPEvaluation.pdf. Accessed on March 22, 2019.
- ⁵⁷ Academy of Nutrition and Dietetics. Academy Priorities for the 2019 Child Nutrition Reauthorization. July 2019. https://www.eatrightpro.org/-/media/eatrightpro-
- files/advocacy/legislation/academycnrrecommendations2019.pdf?la=en&hash=2ED58585C7C2565D281EC45C272759F11B8E230F Accessed April 20,
- 58 Fletcher JM, Frisvold DE. The relationship between the School Breakfast Program and food insecurity. Journal of Consumer Affairs. 2017; 51(3),
- ⁵⁹ Au L, Gurzo K, Gosliner W, Webb K, Crawford P, Ritchie L. Eating school meals daily is associated with healthier dietary intakes: The Healthy Communities Study. J Acad Nutr Diet. 2018;118(8):1474-1481.
- 60 Ritchie L, Rosen N, Fenton K, Au L, Goldstein L, Shimada T. School breakfast policy is associated with dietary intake of fourth- and fifth grade students. J Acad Nutr Diet. 2016; 116(3):449-457.
- 61 Wang S, Schwartz M. School breakfast and body mass index: a longitudinal observational study of middle school students. Pediatric Obesity. 2016; 12(3):213-220.
- 62 Adolphus K, Latwon C, Champ C, Dye L. The effects of breakfast and breakfast composition on cognition in children and adolescents: A systematic review. American Society for Nutrition. 2016; 7(3):590S-612S.
- ⁶³Bartfeld 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, The Journal of Nutrition, Volume 149, Issue 2, February 2019, Pages 336-343, https://doi.org/10.1093/jn/nxy267
- 64 Quader ZS, Gillespie C, Sliwa SA, et al. Sodium Intake among US School-Aged Children: National Health and Nutrition Examination Survey, 2011-2012. J Acad Nutr Diet. 2017;117(1):39-47.e5. doi:10.1016/j.jand.2016.09.010
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5458522/pdf/nihms859686.pdf
- ⁶⁴ Virani SS, et al. Heart disease and stroke statistics—2020 update: a report from the American Heart Association. Circulation. 2020;141:e139-e596. https://doi.org/10.1161/CIR.0000000000000757
- 65 U.S. Department of Agriculture. The Fresh Fruit and Vegetable Program. 2017. Retrieved from: https://fns-
- prod.azureedge.net/sites/default/files/cn/FFVPFactSheet.pdf

 66 Olsho L, Klerman J, Ritchie L, Wakimoto P, Webb K, Bartlett S. Increasing child fruit and vegetable intake: Findings from the US Department of Agriculture Fresh Fruit and Vegetable Program. J Acad Nutr Diet. 2015;115(8):1283-1290.
- ⁶⁷ U.S. Department of Agriculture. Evaluation of the Fresh Fruit and Vegetable Program. https://www.fns.usda.gov/evaluation-fresh-fruit-andvegetable-programAccessed April 27, 2020. 2013
- 68 U.S. Department of Agriculture, Food and Nutrition Service. (2016). Memo SP 46 2016: Unpaid Meal Fees: Local Meal Charge Policies. Available at: https://fns-prod.azureedge.net/sites/default/files/cn/SP46-2016os.pdf. Accessed on November 25, 2019.
- 69 School Nutrition Association. (2019). School Nutrition Trends Report. This source is available to the public for purchase at http://schoolnutrition.org/2019school-nutrition-trends-summary-report/.

- 70 Schwartz MB, Henderson KE, Read M, Danna N, Ickovics JR. New school meal regulations increase fruit consumption and do not increase total plate waste. Child Obes. 2015; 11:242-7. doi: 10.1089/chi.2015.0019.
- 71 Cohen JF, Richardson S, Parker E, Catalano PJ, Rimm EB. Impact of the new U.S. Department of Agriculture school meal standards on food selection, consumption, and waste. Am J Prev Med. 2014; 46:388-94. doi: 10.1016/j.amepre.2013.11.013.
- ⁷² Cullen KW, Chen TA, Dave JM. Changes in foods selected and consumed after implementation of the new National School Lunch Program meal patterns in southeast Texas. Prev Med Reports. 2015; 2:440-443.
- ⁷³ Byker Shanks C, Banna J, Serrano EL. Food Waste in the National School Lunch Program 1978-2015: A Systematic Review. J Acad Nutr Diet. 2017 Nov;117(11):1792-1807. doi: 10.1016/j.jand.2017.06.008. Epub 2017 Aug 12. PMID: 28807638; PMCID: PMC5660654.
- 74 United States Department of Agriculture. Reducing Food Waste, What Schools Can Do Today. Retrieved from: https://fnsprod.azureedge.net/sites/default/files/cnd/Infographic-food-waste.pdf. Accessed February 2019
- 75 SDSU Extension. "Food Waste in School and Strategies to Reduce it." https://extension.sdstate.edu/food-waste-schools-and-strategies-reduce-it. Accessed on February 16, 2020.
- 76 Centers for Disease Control and Prevention. Results from the School Health Policies and Practices Study. Atlanta, GA: Centers for Disease Control and Prevention, 2016.
- ⁷⁷ Centers for Disease Control and Prevention. Making Time for School Lunch. 2019.
- https://www.cdc.gov/healthyschools/nutrition/school_lunch.htm. Accessed on April 20, 2020.
- 78 Chapman LE, et al. Factors Associated with School Lunch Consumption: Reverse Recess and School "Brunch." Journal of the Academy of Nutrition and Dietetics. 2017; 117(9):1413-1418. https://doi.org/10.1016/j.jand.2017.04.016
- 79 U.S. Department of Agriculture. Offer vs. Serve Tip Sheet. https://fns-prod.azureedge.net/sites/default/files/resourcefiles/OVS%20Breakfast%20tip%20sheet.pdf. Accessed on March 30, 2020.
- ⁸⁰ World Wildlife Fund. Food Waste Warriors: A Deep Dive into food waste in US Foods.
- https://c402277.ssl.cf1.rackcdn.com/publications/1271/files/original/FoodWasteWarriorR CS 121819.pdf?1576689275. Accessed on March 30, 2020.
- 81U.S. Department of Agriculture; Food and Nutrition Service. What can you do to help prevent wasted food. July 2016. https://fnsprod.azureedge.net/sites/default/files/resource-files/PreventFoodWaste20.pdf. Accessed March 30, 2020.
- 82 U.S. Department of Agriculture. Farm to School Census, 2013-2014. Retrieved from:
- $\underline{https://farmtoschoolcensus.fns.usda.gov/news/new-usda-data-show-growing-farm-school-efforts-help-reduce-plate-waste-increase-student.}$ Accessed February 2019.
- 👸 Bontrager Yoder, AB., et al. (2015). Factors affecting fruit and vegetable school lunch waste in Wisconsin elementary schools participating in Farm to School programmes. Public Health Nutr 18(15): 2855-2863. Retrieved from: https://www.cambridge.org/core/journals/public-healthnutrition/article/factors-affecting-fruit-and-vegetable-school-lunch-waste-in-wisconsin-elementary-schools-participating-in-farm-to-schoolprogrammes/DB03DE8DA270D53E111A3A4B9463A859.
- ⁸⁴ Jones, BA, et al.The FIT Game: preliminary evaluation of a gamification approach to increasing fruit and vegetable consumption in school. Preventive medicine. 2014;68: 76-79.
- 85 Just, DR, et al. Chefs move to schools. A pilot examination of how chef-created dishes can increase school lunch participation and fruit and vegetable intake. Appetite. 2014;83: 242-247.
- 86 Cohen JFW, Richardson SA, Cluggish SA, Parker E, Catalano PJ, Rimm EB. Effects of Choice Architecture and Chef-Enhanced Meals on the Selection and Consumption of Healthier School Foods: A Randomized Clinical Trial. JAMA Pediatr. 2015;169(5):431-437. doi:10.1001/jamapediatrics.2014.3805
- 87 Long-Term Impact of a Chef on School Lunch Consumption: Findings from a 2-Year Pilot Study in Boston Middle Schools Cohen, Juliana F.W. et al. Journal of the Academy of Nutrition and Dietetics, 2012;112(6):927-933 https://doi.org/10.1016/j.jand.2012.01.015
- ⁸⁸ Documented Success and Future Potential of the Healthy, Hunger-Free Kids Act
- Cohen, Juliana et al. Journal of the Academy of Nutrition and Dietetics, Volume 120, Issue 3, 359 362 https://doi.org/10.1016/j.jand.2019.10.021
- 8989U.S. Department of Agriculture; Food and Nutrition Service. Child Nutrition Program Operations Study (CN-OPS-II). 2019.
- https://www.fns.usda.gov/nslp/child-nutrition-program-operations-study-ii-school-year-2015-2016. Accessed April 20, 2020.
- 90 Asada Y, Ziemann M, Zatz LY, Chriqui J. Successes and challenges in school meal reform: qualitative insights from food service directors. J Sch Health. 2017;87(8):608-615. https://www.ncbi.nlm.nih.gov/pubmed/28691173
- 91 Kids Safe and Healthful Foods Project. Pew Charitable Trusts and Robert Wood Johnson Foundation. Serving Healthy School Meals: Staff Development and Training Needs. 2015.
- http://www.pewtrusts.org/~/media/assets/2015/08/serving_healthy_school_meals_report.pdf. Accessed April 18, 2020.
- 92 USDA. USDA awards grants for new school food service equipment to help schools dish up healthy meals. Retrieved from https://www.fns.usda.gov/pressrelease/2014/006514. Accessed April 18, 2020.
- 93 Kids' Safe and Healthful Foods Project. Serving Healthy School Meals, Dec 2013, https://www.pewtrusts.org/-/media/assets/2013/12/kits_equipment_report.pdf. Accessed April 18, 2020.

 94 Salad Bars to Schools. Why support salad bars. 2020 https://www.saladbars2schools.org/why-salad-bars/ Accessed April 15, 2020.
- 95 Gretchen Swanson Center for Nutrition. Evaluation of the Let's Move salad bars to schools initiative. January 2014.
- https://www.saladbars2schools.org/wp-content/uploads/2014/01/Exec_Summary_Eval_Infographic.pdf_Accessed April 1, 2020.
- 96 U.S. Department of Agriculture; Food and Nutrition Service. Salad bars in the national school lunch program and school breakfast program. September 2019. https://fns-prod.azureedge.net/cn/salad-bars-national-school-lunch-program-and-school-breakfast-program. Accessed April 1, 2020.
- ⁹⁷ U.S. Department of Agriculture. Why is it Important to Eat Grains, Especially Whole Grains? https://www.choosemyplate.gov/eathealthy/grains/grains-nutrients-health. Published June 2015. Accessed February 2020.

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⁹⁸ U.S. Department of Agriculture and U.S. Department of Health and Human Services. *What We Eat in America*, NHANES 2007-2010. Beltsville, MD: USDA, 2010. Retrieved from: https://www.cdc.gov/nchs/nhanes/wweia.htm. Accessed February 2020.

⁹⁹ Au LE, Ritchie LD, Gurzo K, Nhan LA, Woodward-Lopez G, Kao J, et al. Post-Healthy, Hunger-Free Kids Act adherence to select school nutrition standards by region and poverty level: the Healthy Communities Study. *J Nutr Educ Behav*. 2020; 52:249-258. doi: 10.1016/j.jneb.2019.10.016. Epub 2019 Nov 26.

¹⁰⁰ Schwartz MB, Henderson KE, Read M, Cornelius T. Student acceptance of plain milk increases significantly 2 years after flavored milk is removed from school cafeterias: an observational study. *J Acad Nutr Diet*. 2018; 118(5):857-864. doi: 10.1016/j.jand.2017.05.021.

¹⁰¹ Males (cup-equivalents): aged 4 to 8: average 0.8, recommended 1.5–2.5; aged 9 to 13: average 1.1, recommended 2.0–3.0; aged 14 to 18: average 1.3, recommended 2.5–4.0; Females (cup-equivalents): aged 4 to 8: average 0.8, recommended 1.5–2.5; aged 9 to 13: average 1.0, recommended 1.5–3.0; aged 14 to 18: average 1.1, recommended 2.5–3.0.