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More Adequate SNAP Benefits Would Help Millions of Participants Better Afford Food

By Steven Carlson

The Supplemental Nutrition Assistance Program (SNAP, formerly food stamps) is the primary source of nutrition assistance for many low-income families and individuals. SNAP enables low-income households to spend more on food than their limited budgets would otherwise allow and makes it easier to put enough food on the table. Households participating in SNAP include low-wage working families, low-income seniors, and people with disabilities living on fixed incomes; close to 70 percent of participants in an average month are in families with children, and more than one-quarter are in households with seniors or people with disabilities. SNAP forms a critical foundation for their health and well-being, lifting millions out of poverty and improving food security.

Despite the program's success, millions of Americans, including roughly *half* of all households participating in SNAP, are still food insecure, meaning they lack consistent access to enough food to support an active, healthy life. Even those who achieve food security often find it hard to stretch their limited resources far enough to purchase and consume a healthy diet. These facts suggest that SNAP's relatively modest benefits — which average less than \$1.40 per person per meal — may not be enough to meet the needs of America's poor.

Our review of research from the last decade strongly suggests that SNAP benefits fall short of what many participants need to purchase and prepare a healthy diet and that additional benefits would increase food expenditures and improve food security.

- **SNAP benefit levels do not account for the time required to purchase and prepare a healthy diet.** Preparing a healthy meal requires both time — to plan menus, travel to and from a grocery store, comparison shop to minimize costs, and prepare meals — and resources. Studies have found that the Thrifty Food Plan (TFP) — the Agriculture Department's (USDA) estimate of a bare-bones, nutritionally adequate diet, on which SNAP benefit levels are based — may require low-income households to devote much more time than most households actually have to preparing meals, and to make meals largely from scratch. SNAP benefits cannot easily be stretched to purchase as many of the more convenient, but often more costly, processed or prepared foods as American consumers typically eat today. Nearly 9 in 10 households with a single adult (with or without children)

lack the combination of time and money required to purchase and prepare healthy meals.¹ Given that three-quarters of SNAP households are headed by a single adult, many participants likely lack the time to prepare meals mostly from scratch as the Thrifty Food Plan assumes.

- **To meet dietary recommendations at a low cost, the TFP adopts assumptions about food consumption patterns that can vary significantly from what people actually consume.** USDA imposes several constraints on the development of the TFP. Its cost, for example, has been fixed in inflation-adjusted terms since the 1970s. When combined with nutrient standards, food group requirements, and other considerations, these constraints result in market baskets of food that deviate — sometimes dramatically — from current consumption patterns. To enable the TFP to more closely resemble people’s actual food consumption patterns would likely require raising the TFP’s level and thus its cost.
- **Studies show that additional SNAP benefits increase both food expenditures and food security.** SNAP households’ food spending increased, and their food security improved, after policymakers temporarily boosted SNAP benefits in response to the Great Recession. These trends then reversed as inflation eroded the benefit increase and policymakers subsequently ended it. Similarly, a study found that increasing benefits in the summer — when children lack access to free or reduced-price school meals — reduced by one-third the share of children with very low food security (that is, who must cut the size of meals, skip meals, or go entire days without food due to lack of resources).
- **Many families struggle once SNAP benefits run out.** A quarter of all households exhaust their benefits within a week of receipt, and more than half exhaust benefits within the first two weeks. To be sure, SNAP benefits are intended to supplement other income that households can use to purchase food. But food expenditures and consumption fall — and food insecurity increases — as families use up their benefits and other resources. Running out of benefits may also harm participants’ health and educational achievement: studies find that hospital admissions and school disciplinary problems rise, and test scores fall, among SNAP families later in the month.
- **Current benefits fall well short of what households may need to ensure an adequate diet.** Food-insecure SNAP participants report they need about \$10 to \$20 more per person each week to buy enough food to meet their needs. Similarly, researchers have estimated that SNAP benefits fall about \$11 short per person of the weekly cost of a nutritious meal plan. And larger benefit adjustments also would be needed to reflect more realistic expectations about the degree to which families can prepare meals from scratch.
- **Families in high-cost areas find it especially hard to afford a healthy diet.** SNAP benefits are adjusted each year to account for rising food prices, and maximum allotments are the same across most states and the District of Columbia. While this ensures that poor households with similar circumstances are eligible for the same SNAP benefit regardless of where they live — an essential feature of SNAP — it can render a healthy diet unaffordable for families in high-cost areas. As many as 20 to 30 percent of SNAP households may

¹ George Davis and Wen You, “Not enough money or not enough time to satisfy the Thrifty Food Plan? A cost difference approach for estimating a money-time threshold,” *Food Policy*, 36(2):101-107, 2011, <https://www.sciencedirect.com/science/article/pii/S0306919210000941>. These estimates are based on a sample of single-adult households regardless of income. It is not clear how the results would change if limited to low-income or SNAP households.

encounter food prices that raise the purchase price of market baskets of foods that approximate the foods in the Thrifty Food Plan to levels above SNAP's maximum allotment.²

- **Increased SNAP benefits could help reduce child poverty.** Children growing up in poor families typically fare worse — in terms of physical and mental health, educational attainment and labor market success, and other outcomes — than children from more affluent families. Increasing SNAP benefits, particularly when coupled with expanded work supports to encourage and reward work, would reduce the number of children in poverty. Policy options focused on work alone would fall far short of this goal.

This evidence suggests that raising SNAP benefits would improve food security and lessen the adverse effects that are linked to households running out of adequate food before the end of the month, and likely would also have health benefits.

Assessing the adequacy of SNAP benefits is not a simple task. A panel of researchers and policy experts commissioned by USDA's Food and Nutrition Service and convened by the National Academies drew attention to the wide range of individual, household, environmental, and program characteristics that influence the program's adequacy.³ A household's ability to achieve food security and consume a healthy diet depends on many factors: time and resources; nutrition knowledge, motivation, and skills; food choices; access to reasonably priced grocery stores and supermarkets; and the cost of food and transportation. Key program design features — from the way benefits are calculated to the availability and effectiveness of nutrition education — also matter.⁴

² Erin Bronchetti, Garret Christensen, and Benjamin Hansen, "Variation in Food Prices and SNAP Adequacy for Purchasing the Thrifty Food Plan," University of Kentucky Center for Poverty Research Discussion Paper Series, DP2016-03, 2016, https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1117&context=ukcpr_papers.

³ Julie Caswell and Ann Yaktine, eds., *Supplemental Nutrition Assistance Program: Examining the Evidence to Define Benefit Adequacy*, Institute of Medicine and National Research Council, Washington DC: National Academies Press, 2013, <https://fns-prod.azureedge.net/sites/default/files/ops/IOMSNAPAllotments.pdf>.

⁴ While all these factors are potentially important, we focus this research review on the adequacy of SNAP's maximum allotments and on the TFP on which those allotments are based, largely because existing research offers evidence on both the adequacy of the TFP and the consequences of increasing SNAP benefits. Other features of the program's basic design, such as its benefit reduction rate, deductions from gross income, and nutrition education, can also affect adequacy, but less is known about how well these features align with the circumstances of low-income households in the 21st century and the consequences of potential alternatives.

A recent exception is Joshua Leftin *et al.*, "Examination of the Effect of SNAP Benefit and Eligibility Parameters on Low-Income Households," Decision Demographics and Mathematica Policy Research, October 2017, <https://fns-prod.azureedge.net/sites/default/files/ops/SNAPBEP.pdf>. It concludes that SNAP deductions generally reflect the actual expenditures of low-income households eligible for those deductions, but many other households have large expenses that current rules do not allow them to claim. For example, while households may deduct out-of-pocket medical expenses exceeding \$35 per month for health care for elderly or disabled members, data from the Consumer Expenditure Survey show that low-income households with no elderly or disabled members who report health care expenditures (about 47 percent of such households) incur nearly \$225 per month in non-reimbursed medical expenses, on average.

Fortunately, research over the last decade, some of it sparked by the expert panel's work, offers new insights on the adequacy of SNAP benefits.⁵

SNAP Benefit Levels Are Based on Unrealistic Assumptions

The Thrifty Food Plan is supposed to represent the actual amount of money needed to purchase a low-cost but nutritious diet. In reality, however, USDA's periodic updates to the TFP since the 1970s all start by assuming that its cost is fixed at existing levels, adjusted for inflation.⁶ USDA then seeks to meet nutrient standards, food group recommendations, and other dietary requirements without deviating too far from low-income Americans' current consumption patterns. By adhering to these required constraints, the TFP model generates unrealistic market baskets of food.

First, the TFP does not account for the time required to purchase and prepare a healthy diet, assuming unrealistically that households can purchase low-cost raw ingredients and prepare most meals from scratch. This makes the cost of a basic diet look less costly than it actually is for most households. Preparing healthy meals requires both money and time. The full cost of a healthy diet includes not just the money used to buy ingredients, but also the time needed to plan meals, buy and prepare food, consume meals, and clean up.⁷

Ignoring the value of time and labor grossly underestimates the full cost of a healthy diet. For example, a can of beans typically costs more in a store than dry beans, but if we account for the time it takes to sort, rinse, soak, and boil dry beans, the combined cost of ingredients and labor can exceed the total cost of simply buying and warming a can of beans.⁸ Shopping for ingredients also takes time.⁹ The value of time may be more important than the cost of food when preparing meals

⁵ A recent paper by the Food Research and Action Center (FRAC) also comprehensively reviewed the research on SNAP benefit adequacy. See "Initiatives to Make SNAP Benefits More Adequate Significantly Improve Food Security, Nutrition, and Health," February 2019, <http://frac.org/wp-content/uploads/snap-initiatives-to-make-snap-benefits-more-adequate.pdf>. This paper builds on previous work by FRAC to elevate SNAP benefit adequacy, such as a 2012 paper analyzing the Thrifty Food Plan. See "Replacing the Thrifty Food Plan in Order to Provide Adequate Allotments for SNAP Beneficiaries," December 2012, http://frac.org/wp-content/uploads/thrifty_food_plan_2012.pdf.

⁶ The TFP market basket for each age-gender group (such as female adults ages 19-50) consists of food amounts for 29 food categories. The cost of each TFP market basket is adjusted for inflation by applying the consumer price index (CPI) that corresponds to each of the food categories that make up the TFP. For example, the CPI for breakfast cereals is applied to the cost of the TFP food category "whole grain cereals." The updated costs of the food categories are then added up to arrive at the new cost of the TFP market basket.

⁷ Households make decisions on what to produce and what to consume, within the constraints of their budget and available time. The consumption of food requires households to spend money from their budget to purchase food, but also to allocate time to perform all the other activities related to food preparation. See Gary Becker's economic model of household production, which formalized the cost of time. Gary Becker, "A Theory of the Allocation of Time," *Economic Journal*, 75(299):493-517, 1965, <https://www.jstor.org/stable/2228949>.

⁸ The average retail price for canned black beans as purchased in a grocery store is lower than the price of dried beans (\$0.95 vs \$1.40 per pound), but the average cost of canned beans "as consumed" after discarding the liquid content is *double* that of dried beans after rehydrating and cooking (\$0.56/cup vs \$0.24/cup). See USDA Economic Research Service, Fruit and Vegetable Prices, <https://www.ers.usda.gov/data-products/fruit-and-vegetable-prices/fruit-and-vegetable-prices/#Vegetables>.

⁹ Michelle Ver Ploeg *et al.*, "Access to Affordable and Nutritious Food — Measuring and Understanding Food Deserts and Their Consequences: Report to Congress," USDA Economic Research Service, June 2009, <https://www.ers.usda.gov/publications/pub-details/?pubid=42729>; Karen Hamrick *et al.*, "How Much Time Do

at home, accounting for as much as 50 to 65 percent of the total time-and-money cost of food and meal preparation among SNAP households.¹⁰

A central assumption in the TFP, however, is that low-income households can and will devote the substantial time required to prepare most meals largely from scratch. Since the TFP model does not explicitly account for the cost of time required to purchase and prepare food, it implicitly assumes that the cost is zero, meaning that households are not constrained in the time they have available to prepare foods and that they will buy limited processed foods. Although the last revision of the TFP, in 2006, allows for some processed or prepared foods, it still relies heavily on meals prepared from unprocessed foods to meet its cost constraints.¹¹

While there are few estimates of the time required to prepare a nutritious diet at the cost determined by the TFP, existing estimates suggest it takes 13 to 16 hours per week, or roughly two hours per day.¹² This is much more than most American households spend preparing meals: an average American adult typically spends just over 35 minutes each day on food preparation and cleanup, and while the figure for SNAP participants is higher (around 50 to 65 minutes), it still falls well short of the effort that the TFP requires (see Figure 1).¹³

Ignoring the value of time and labor severely distorts assessments of whether household resources are adequate to purchase and prepare a nutritious diet. Fully 87 percent of households with a single adult lack the combination of time and money to purchase and prepare meals consistent with the TFP's requirements. This estimate is based on a sample of single-adult households regardless of income, but most households participating in SNAP likely lack the resources as well, since three-quarters of all households participating in SNAP have only one adult and low-income households may face increased budget constraints.¹⁴ The time deficit for households with *two* adults (about a quarter of all SNAP households) may not be as large, since they can share the responsibility for meal

Americans Spend on Food?" USDA Economic Research Service, November 2011, <https://www.ers.usda.gov/publications/pub-details/?pubid=44609>.

¹⁰ George Davis and Wen You, "The Time Cost of Food at Home: General and Food Stamp Participant Profiles," *Applied Economics*, 42(20):2537-2552, 2010, <https://www.tandfonline.com/doi/abs/10.1080/00036840801964468>; George Davis and Wen You, "The Thrifty Food Plan Is Not Thrifty When Labor Cost Is Considered," *Journal of Nutrition*, 140(4): 854-857, 2010, <https://academic.oup.com/jn/article/140/4/854/4743306>; Christian Raschke, "Food stamps and the time cost of food preparation," *Review of Economics of the Household*, 10(2):259-275, 2012, <https://link.springer.com/article/10.1007/s11150-011-9128-3>.

¹¹ James P. Ziliak, "Modernizing SNAP Benefits," The Hamilton Project, Brookings Institution, May 2016, http://www.hamiltonproject.org/assets/files/ziliak_modernizing_snap_benefits.pdf.

¹² These estimates were calculated for the 1999 TFP; estimates for the 2006 TFP have yet to be calculated, in large part because USDA has not developed comparable recipes for the last update. See Diego Rose, "Food Stamps, the Thrifty Food Plan, and Meal Preparation: The Importance of the Time Dimension for US Nutrition Policy," *Journal of Nutrition Education and Behavior*, 39(4):226-232, 2007, <https://www.sciencedirect.com/science/article/pii/S1499404607004708>; Davis and You (2011).

¹³ Karen Hamrick and Ket McClelland, "Americans' Eating Patterns and Time Spent on Food: The 2014 Eating & Health Module Data," USDA Economic Research Service, July 2016, <https://www.ers.usda.gov/publications/pub-details/?pubid=80503>; and Raschke (2012). SNAP participants, on average, also spend 55 minutes grocery stopping once every seven days.

¹⁴ Davis and You (2011). These estimates are based on a sample of single-adult households regardless of income. It is not clear how the results would change if limited to low-income or SNAP households.

preparation. Spouses contribute about three hours per week, or almost 30 minutes per day, to meal production.¹⁵

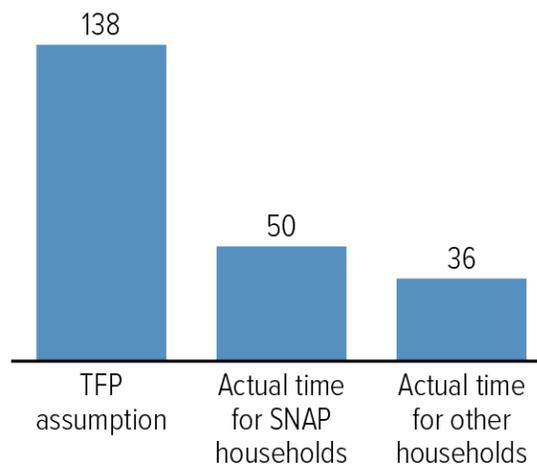
Second, the TFP does not reflect the variety of foods most people consume. It meets the nutrient standards and food group requirements at low cost only by deviating, sometimes dramatically, from current consumption patterns. Some research shows that the TFP assumes a household will consume certain foods in quantities up to 20 times the national average and omits other commonly consumed foods, such as citrus juices and whole milk. For example, whole grain rice and pasta account for 0.5 percent of food energy for females aged 20 to 50, but under the 2006 TFP, they account for more than 10 percent of the food energy to meet MyPyramid requirements.¹⁶

Third, the TFP does not meet all key dietary standards or account for varying family types and dietary needs. It meets many science-based recommendations of nutritional need but fails to meet nutritional guidelines for vitamin E, potassium, and sodium.¹⁷ The TFP for a family of four is based on the dietary needs for a family consisting of two adults and children under age 12 and thus is likely inappropriate for four-person families with teenagers, since dietary guidelines suggest they have similar nutritional needs as adults.¹⁸ Furthermore, the TFP does not account for a range of dietary restrictions and is insufficient to cover medically necessary dietary needs for relatively common conditions such as lactose intolerance or diabetes, a recent study found.¹⁹

FIGURE 1

Families Spend Far Less Time Preparing Food Than Thrifty Food Plan (TFP) Assumes

Average minutes per day



Note: TFP = Agriculture Department estimate of a nutritionally adequate diet at a minimal cost, on which SNAP benefit levels are based. All estimates exclude time spent shopping for food; TFP estimate excludes time spent on cleanup.

Sources: Rose (2007), "Food Stamps, the Thrifty Food Plan, and Meal Preparation," Hamrick and McClelland (2016), "Americans' Eating Patterns and Time Spent on Food."

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¹⁵ Wen You and George Davis, "Estimating dual headed time in food production with implications for SNAP benefit adequacy," *Review of Economics of the Household*, published online February 2, 2018, <https://link.springer.com/article/10.1007/s11150-018-9403-7>.

¹⁶ Adam Drewnowski and Petra Eichelsdoerfer, "Can Low-Income Americans Afford a Healthy Diet?" *Nutrition Today*, 44(6):246-249, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2847733/>; Parke Wilde and Joseph Llobrera, "Using the Thrifty Food Plan to Assess the Cost of a Nutritious Diet," *Journal of Consumer Affairs*, 43(2): 274-304, 2009, <https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1745-6606.2009.01140.x>.

¹⁷ "Thrifty Food Plan, 2006," Center for Nutrition Policy and Promotion, USDA, April 2007, https://www.cnpp.usda.gov/sites/default/files/usda_food_plans_cost_of_food/TFP2006Report.pdf.

¹⁸ James P. Ziliak, "Modernizing SNAP Benefits," The Hamilton Project, Brookings Institution, May 2016, http://www.hamiltonproject.org/assets/files/ziliak_modernizing_snap_benefits.pdf.

¹⁹ Angela M. Babb *et al.*, "An Examination of Medically Necessary Diets within the Framework of the Thrifty Food Plan," *Ecology of Food and Nutrition*, April 2019, <https://doi.org/10.1080/03670244.2019.1598978>.

The Thrifty Food Plan and SNAP Benefits

The TFP is derived from a nationwide survey of the cost of a market basket of foods representative of those consumed by low-income households and aligned with the Dietary Guidelines for Americans. It is not a shopping list that guides a consumer along the path towards a healthy diet, but rather thousands of individual food items consolidated into 29 categories grouped under six broad food types: grains, vegetables, fruits, milk products, meat and beans, and other foods. Foods within categories are assigned an average price based on national data, then combined to achieve the dietary recommendations in the 2005 Dietary Guidelines and MyPyramid while straying as little as possible from current consumption patterns and holding overall costs constant. The requirement that the TFP meet dietary guidelines at constant cost over time implies that its value today is the same as it was 40 years ago when the TFP was introduced, once food-price inflation is accounted for. Separate plans are generated for 15 groups of men, women, and children of different ages, reflecting differences in their dietary requirements.

In principle, the TFP suggests that a family of four, consisting of two adults and two school-aged children, should be able to buy a nutritious diet for \$148.20 per week in June 2018 based on average food prices across the nation.^a Maximum SNAP benefits are based on this four-person reference family, with adjustments for smaller and larger households to reflect economies of scale. Maximum benefits in Alaska, Hawaii, Guam, and the Virgin Islands are higher to reflect the higher cost of food in those locations. To account for food price inflation, maximum benefits are adjusted each October based on the cost of the TFP the previous June. The maximum monthly benefit for a family of four in the 48 states and the District of Columbia during fiscal year 2019 is \$642.

SNAP targets its benefits according to need: households with less income receive larger benefits than households with more income since they need more help to afford an adequate diet. The benefit formula assumes that families will spend 30 percent of their net income for food; SNAP makes up the difference between that 30 percent contribution and the maximum benefit. To receive the maximum SNAP benefit, a household must have no net income to contribute to food purchases.

^a Center for Nutrition Policy and Promotion, “Official USDA Food Plans: Cost of Food at Home at Four Levels, U.S. Average, June 2018,” July 2018, <https://www.cnpp.usda.gov/sites/default/files/CostofFoodJun2018.pdf>.

Additional Benefits Increase Food Expenditures and Food Security

Recent research, much of it derived from natural or designed experiments, offers strong evidence that increasing SNAP benefits would make a meaningful difference for participants’ food expenditures and food security.²⁰

²⁰ An estimated 15 to 30 percent SNAP households may be “extra-marginal,” meaning their SNAP benefits equal or exceed what they report spending on food at home. Households may be extra-marginal if they do not need more food than what they can purchase with SNAP benefits, or if they *do* need more food than what they can purchase with their SNAP benefits but their income is so low that they must spend all of it meeting other basic needs and have no income available for food. See David Johnson, Robert Schoeni, Laura Tichen, and Jennifer Cornman, “Assessing the Effectiveness of SNAP by Examining Extramarginal Participants,” University of Michigan Institute for Social Research Population Studies Center Research Report 18-889, April 2018, <https://www.psc.isr.umich.edu/pubs/abs/14834>. Increasing SNAP benefits would have different effects on participants depending on their current spending on food and outstanding needs. Many households would increase overall food spending, some could buy a similar quantity of food but shift towards buying more nutritious products, and others could shift non-SNAP income currently spent on food to

Recognizing SNAP's effectiveness at providing economic stimulus and reducing hardship in a weak economy, the 2009 Recovery Act made several changes to SNAP, most notably a temporary, across-the-board benefit increase for all participants. The Recovery Act raised SNAP's maximum monthly benefit by 13.6 percent beginning in April 2009. SNAP benefits were expected to continue at the new, higher level until the program's regular annual inflation adjustments to the maximum benefit overtook the Recovery Act adjustment. Food price inflation was lower than expected between 2009 and 2013, which delayed the date that the TFP would exceed the Recovery Act level. Congress ultimately accelerated the sunset of the temporary benefit increase, and as a result, every SNAP recipient except those in Hawaii experienced a benefit cut in November 2013.²¹

Several researchers took advantage of the natural experiment this temporary provision presented to analyze the impact of benefit increases and cuts on food expenditures, food security, diet quality, and other outcomes.

- **Increasing benefits raises (and cutting benefits reduces) food expenditures.** Basic economic theory predicts that raising SNAP benefits will increase spending on food at home and that cutting benefits will reduce food spending for most households. Even though SNAP benefits can only be spent on food, added benefits should also enable households to redirect funds they would otherwise have spent on food to other needs.

As expected, low-income households did increase overall food expenditures (by about 5 to 10 percent) after implementation of the Recovery Act.²² They also increased spending on housing, education, and transportation, which suggests that increasing SNAP benefits allows participants to better meet both food and other essential needs.²³

other basic needs. Research shows high rates of food insecurity for SNAP households with the lowest incomes, suggesting that current benefits are inadequate for these households. A benefit increase would likely have benefits for the vast majority of participating households.

²¹ As noted above, USDA sets SNAP benefits for Alaska, Hawaii, Guam, and the Virgin Islands differently from the rest of the country because the cost of food is different in these areas. Thus, these areas experienced different benefit increases than the rest of the United States. Because Hawaii's Thrifty Food Plan exceeded Recovery Act levels beginning in fiscal year 2013, its SNAP benefits were already set higher than Recovery Act levels, so its residents did not experience a cut when the Recovery Act provision expired in November 2013. SNAP households in Alaska, Guam, and the Virgin Islands experienced a benefit cut in November 2013 that was the same in proportional terms, but slightly different in dollar terms, from the cut in the 48 other states and the District of Columbia.

²² Mark Nord and Mark Prell, "Food Security of SNAP Recipients Improved Following the 2009 Stimulus Package," *Amber Waves*, 9(2): 16-23, June 2011, <https://ageconsearch.umn.edu/bitstream/121096/2/02FoodSecuritySNAP.pdf>; Charlotte Tuttle, "The Stimulus Act of 2009 and Its Effect on Food-at-Home Spending by SNAP Participants," USDA Economic Research Service, August 2016, <https://www.ers.usda.gov/publications/pub-details/?pubid=74689>; Pourya Valizadeh and Travis Smith, "How Did the American Recovery and Reinvestment Act Affect the Material Well-Being of SNAP Participants? A Distributional Approach," *Applied Economic Perspectives and Policy*, 2019, <https://academic.oup.com/aep/advance-article-abstract/doi/10.1093/aep/ppy039/5306475>.

²³ Jiyeon Kim, "Do SNAP participants expand non-food spending when they receive more SNAP benefits? — Evidence from the 2009 SNAP benefits increase," *Food Policy* 65(64): 9–20, 2016, <https://www.sciencedirect.com/science/article/pii/S0306919216304341>. These results are similar to research showing that participating in SNAP substantially increases spending on housing and utilities, education and other enrichment activities, and transportation. See Lorenzo Almada and Jaehyun Nam, "The Effects of SNAP on Non-Food Expenditure: An Instrumental Variables Approach," unpublished manuscript, 2016, <https://data.ers.usda.gov/FANRP-ridge-project-summaries.aspx?type=2&summaryId=270>.

As inflation eroded the real value of the Recovery Act increase, SNAP households' food spending fell by 4 percent, or by about \$26 per month for a family of four.²⁴ When benefits were finally cut in November 2013, SNAP households lowered their food spending by 12 percent more than eligible but non-participating households.²⁵ And among SNAP participants enrolled in store loyalty programs in three major cities (Los Angeles, Atlanta, and Columbus), food spending fell by 30 percent.²⁶

- **Increasing benefits improves (and cutting benefits reduces) food security.** The share of households with very low food security was expected to rise in 2009 due to the Great Recession's impact on income and employment. Yet very low food security *fell* that year — the year the benefit increase took effect — among households with incomes low enough to qualify for SNAP (130 percent of the poverty line or less). Among households with somewhat higher incomes, in contrast, very low food security *rose* in 2009, as expected (see Figure 2).²⁷ The Recovery Act increase may have reduced the incidence of very low food security among SNAP participants by about a third, helping to cushion the blow of the recession by providing more resources for families to purchase food.

As inflation eroded the value of the additional Recovery Act benefits between 2009 and 2011, the number of SNAP households with very low food security increased 17 percent, erasing nearly half of the improvement associated with the Recovery Act's benefit increase. Very low food security did *not* rise among low-income households *not* receiving SNAP.²⁸ This, too, suggests a strong relationship between SNAP benefit levels and recipients' food insecurity.

When benefits were cut in November 2013, food insecurity among households that consistently participated in SNAP rose by 8 percent more — and very low food security rose by 14 percent more — than it did for other low-income households.²⁹

FIGURE 2

²⁴ Mark Nord, "Effects of the Decline in the Real Value of SNAP Benefits From 2009 to 2011," USDA Economic Research Service, August 2013, <https://www.ers.usda.gov/publications/pub-details/?pubid=45102>.

²⁵ Jiyoung Kim, Matthew Rabbitt, and Charlotte Tuttle, "Changes in Low-Income Households' Spending and Time Use Patterns in Response to the 2013 Sunset of the ARRA-SNAP Benefit," *Applied Economic Perspectives and Policy*, ppz007, 2019, <https://academic.oup.com/aep/advance-article-abstract/doi/10.1093/aep/ppz007/5489470>.

²⁶ Gregory Bruich, "The effect of SNAP benefits on expenditures: New evidence from scanner data and the November 2013 benefit cuts," Harvard University, unpublished manuscript, 2014, http://scholar.harvard.edu/files/bruich/files/bruich_2014b.pdf.

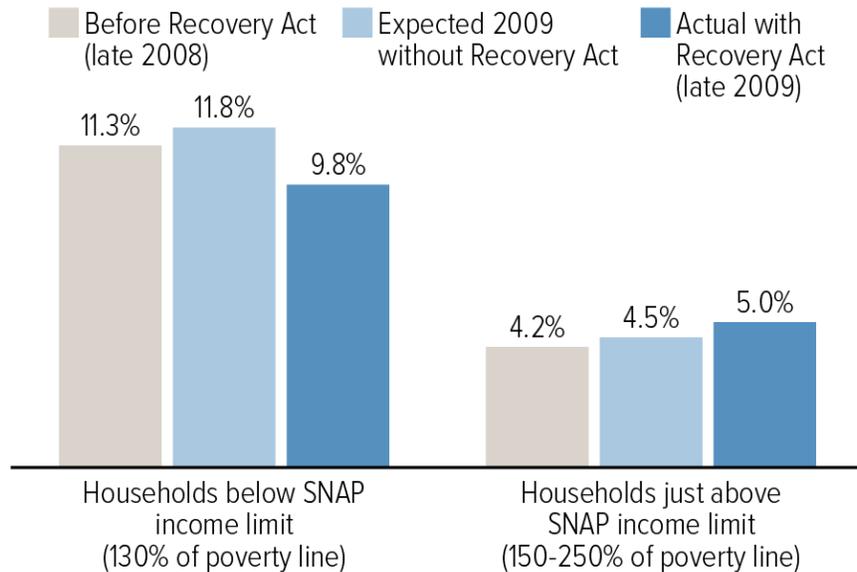
²⁷ Nord and Prell (2011).

²⁸ Nord (2013).

²⁹ Among households that participated less frequently in the prior 12 months, food insecurity increased by 7 percent and very low food security increased by 9 percent. Bhagyashree Katare and Jiyoung Kim, "Effects of the 2013 SNAP Benefit Cut on Food Security," *Applied Economic Perspectives and Policy*, 39(4): 662–681, 2017, <https://academic.oup.com/aep/article-abstract/39/4/662/3755270?redirectedFrom=fulltext>.

Very Low Food Security Declined for Low-Income Households After Temporary SNAP Benefit Increase

Percent of households with very low food security



Note: Very low food security = one or more household members must cut the size of meals, skip meals, or go entire days without food due to lack of resources.

Source: Economic Research Service, "Food Security of SNAP Recipients Improved Following the 2009 Stimulus Package," April 2011.

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- Evidence is mixed on whether benefit increases improve diet quality.** Raising SNAP benefits could improve the nutritional quality of participants' diets if cost currently constrains participants' food choices. An additional \$30 per person of monthly SNAP benefits could raise monthly food spending by \$19 per person, based on the estimated associations between SNAP benefits, food spending, and diet quality. Such an increase is associated with increases in the purchase of more nutritious foods. Most notably, overall consumption of vegetables could increase by 1.5 percent, with even larger increases in tomatoes and yellow vegetables (see Figure 3).³⁰ The evidence on how benefit increases affect diet quality is somewhat mixed, however, as the natural experiment offered by the Recovery Act did not reveal consistent

³⁰ Patricia Anderson and Kristin Butcher, "The Relationships Among SNAP Benefits, Grocery Spending, Diet Quality, and the Adequacy of Low-Income Families' Resources," Center on Budget and Policy Priorities, June 14, 2016, <https://www.cbpp.org/sites/default/files/atoms/files/6-14-16fa.pdf>. There is also some evidence that raising food expenditures — both out of pocket and from SNAP benefits — is associated with increases in fruit and vegetable consumption. See Namrata Sanjeevi and Jeanne Freeland-Graves, "Association of Grocery Expenditure Relative to Thrifty Food Plan Cost with Diet Quality of Women Participating in the Supplemental Nutrition Assistance Program," *Journal of the Academy of Nutrition and Dietetics*, July 2018, <https://www.sciencedirect.com/science/article/pii/S2212267218307640>. This study is based on a small, non-random sample of primarily Hispanic women in central Texas that is not easily generalized to a larger population.

improvements in nutrient intake and diet.³¹ The diet of most Americans, as measured by the Healthy Eating Index, falls short of the recommendations in the Dietary Guidelines for Americans, regardless of income.³² Research on the relationship between income and diet quality has been mixed and it is not clear whether raising benefits would substantially improve diet quality among low-income SNAP participants.

Other evidence that more adequate SNAP benefits could improve dietary outcomes emerges from the growing number of incentive programs at farmers' markets or grocery stores. These programs typically provide a dollar-for-dollar match (or, in some cases, a discount) on each SNAP dollar spent on targeted foods (usually fruits and vegetables), essentially increasing the value of SNAP benefits. Studies suggest that such incentives can lead to more spending on fruits and vegetables, improved food security, and better diets.

In the strongest of these studies, USDA's rigorous evaluation of the Healthy Incentives Pilot in Massachusetts showed that a targeted incentive could increase fruit and vegetable consumption by about 26 percent.³³ A smaller experiment in rural Maine increased weekly spending on fruits and vegetables among households participating in SNAP by 45 percent.³⁴ Other studies report that incentives are associated with improvements in food security, fewer food-related problems (such as cutting or skipping meals, feeling hungry, or not having enough money to buy enough food and eat balanced meals), increased consumption of fruits and vegetables, and self-reported health.³⁵ However, an interim evaluation of the Food Insecurity Nutrition Incentive program, whose grantees provide incentives at over 2,000

³¹ Geetha Waehrer, Partha Deb, and Sandra L. Decker, "Did the 2009 American Recovery and Reinvestment Act Affect Dietary Intake of Low-Income Individuals?" *Economics & Human Biology*, 19: 170-183, 2015, <https://www.sciencedirect.com/science/article/pii/S1570677X1500060X>.

³² Andrea Carlson and Elizabeth Frazão, "Food costs, diet quality and energy balance in the United States," *Physiology and Behavior*, July 2014, <https://www.ncbi.nlm.nih.gov/pubmed/24631301>.

³³ Susan Bartlett *et al.*, "Evaluation of the Healthy Incentives Pilot (HIP): Final Report," USDA Food and Nutrition Service, September 2014, <https://www.fns.usda.gov/snap/healthy-incentives-pilot-final-evaluation-report>.

³⁴ Michele Polacsek *et al.*, "A Supermarket Double-Dollar Incentive Program Increases Purchases of Fresh Fruits and Vegetables Among Low-Income Families with Children: The Healthy Double Study," *Journal of Nutrition Education and Behavior*, 50(3): 217-228, 2018, <https://www.sciencedirect.com/science/article/abs/pii/S1499404617308965>.

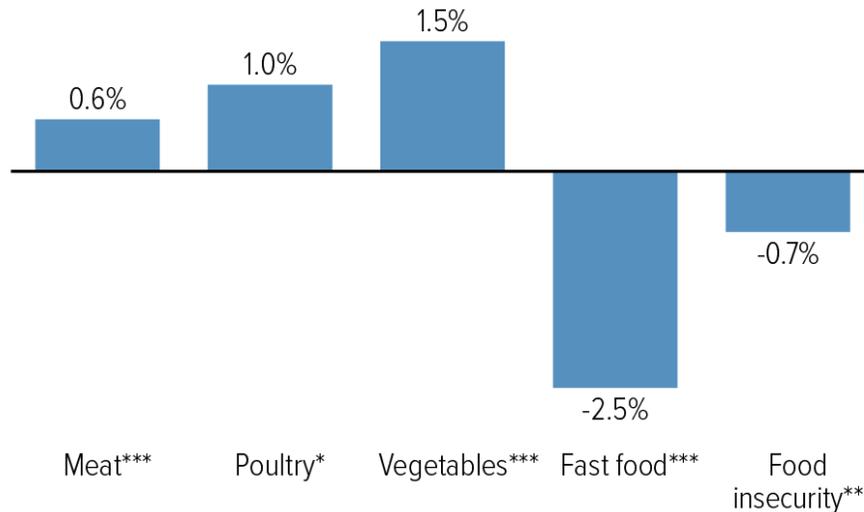
³⁵ See, for example, Alicia Cohen *et al.*, "Increasing Use of a Healthy Food Incentive: A Waiting Room Intervention Among Low-Income Patients," *American Journal of Preventive Medicine*, 52(2): 154-162, 2017, <https://www.sciencedirect.com/science/article/pii/S0749379716305827>; Carolyn Dimitri *et al.*, "Enhancing Food Security of Low-Income Consumers: An Investigation of Financial Incentives for Use at Farmers Markets," *Food Policy*, 52: 64-70, 2015, <https://www.sciencedirect.com/science/article/abs/pii/S0306919214000918>; Carrie Durward *et al.*, "Double Up Food Bucks Participation is Associated with Increased Fruit and Vegetable Consumption and Food Security Among Low-Income Adults," *Journal of Nutrition Education and Behavior*, 51(3): 342-347, 2019, <https://www.sciencedirect.com/science/article/abs/pii/S1499404618307450>; Darcy A. Freedman *et al.*, "A farmers' market at a federally qualified health center improves fruit and vegetable intake among low-income diabetics," *Preventive Medicine*, 56(5): 288-292, 2013, <https://www.sciencedirect.com/science/article/pii/S0091743513000315>; Suzanne Lindsay *et al.*, "Monetary matched incentives to encourage the purchase of fresh fruits and vegetables at farmers markets in underserved communities," *Preventing Chronic Disease*, 10: e188, 2013, <https://europepmc.org/articles/pmc3830923>; Ronit Ridberg *et al.*, "A Pediatric Fruit and Vegetable Prescription Program Increases Food Security in Low-Income Households," *Journal of Nutrition Education and Behavior*, 51(2): 224-230, 2019, <https://www.sciencedirect.com/science/article/abs/pii/S1499404618307115>; Mateja Savoie-Roskos *et al.*, "Reducing Food Insecurity and Improving Fruit and Vegetable Intake Among Farmers' Market Incentive Program Participants," *Journal of Nutrition Education and Behavior*, 48(1), 70-76, 2016, <https://www.sciencedirect.com/science/article/abs/pii/S1499404615007125>.

retailers (including farmers’ markets and grocery stores), found only modest increases in SNAP participants’ fruit and vegetable spending and no measurable impact on their fruit and vegetable consumption.³⁶

FIGURE 3

Higher SNAP Benefits Mean More Groceries, Better Nutrition

Estimated impact on food consumption and food insecurity of \$30 increase in monthly per capita benefits



, **, * Indicate relationship is significant for a two-sided test at the 0.15, 0.10, 0.05 level or better, respectively.

Source: Anderson and Butcher, “The Relationships Among SNAP Benefits, Grocery Spending, Diet Quality, and the Adequacy of Low-Income Families’ Resources”

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While these studies suggest such incentives are linked to positive incomes, we recommend caution when interpreting these results, particularly as they relate to the impact of increasing benefits overall on diet quality. Because the incentives examined lower the cost of specific foods, the extent to which they apply to the impact of broad benefit increases is unclear. In addition, while these studies consistently find an *association* between incentives and positive outcomes, it is hard to draw conclusions about the *causal* impact of incentives.³⁷

³⁶ Tracy Vericker *et al.*, “The Evaluation of Food Insecurity Nutrition Incentives (FINI) Interim Report,” USDA Food and Nutrition Service, May 2019, https://fns-prod.azureedge.net/sites/default/files/resource-files/FINI-InterimReport_1.pdf.

³⁷ These studies typically compare outcomes before and after introduction of an incentive (which makes it difficult to rule out alternative explanations for the observed changes); use relatively small, non-random samples in limited locales (which makes it difficult to generalize the results); often include other activities such as nutrition education, health care, or farmers’ market promotion (which makes it difficult to disentangle the independent effect of the incentive); and rely

- **Benefit increases may improve health and reduce health care costs.** Studies suggest that health care use and costs respond to changes in SNAP benefits. The number and cost of hospital admissions covered by Medicaid, for example, grew more slowly after the Recovery Act's benefit increases took effect and then accelerated when those benefits were cut.³⁸ There is also some evidence that participating in SNAP may improve broad measures of child health. Children who lose some or all of their SNAP benefits are more likely to have poor health and be food insecure compared to children in families that maintain benefits, and families that lose benefits are more likely to forgo medical care or make health care tradeoffs than families that consistently receive SNAP benefits.³⁹ Moreover, young children in SNAP households were as likely to be “well” as children from non-participating low-income households in the years before implementation of the Recovery Act, but *more* likely to be “well” in the years after. This suggests a possible link between benefit adequacy and child health.⁴⁰

Additional evidence comes from USDA's large-scale experiment with additional summer benefits for children. Many low-income families cannot easily absorb gaps or reductions in nutrition assistance, such as occur during summer months when children have no access to free or reduced-price meals at school. Households with school-age children, limited income, and tight budgets increase their summer food spending by far less (just \$2 per child per week, on average) than needed to fully offset the lost school meals.⁴¹

To help fill this gap, the Summer Electronic Benefit Transfer for Children demonstration gave participating households an extra \$60 in SNAP benefits each month for each school-aged child. The results were striking: food expenditures rose by 10 percent, food insecurity fell by 21 to 34 percent, and three of eight measures of child nutrition outcomes improved modestly, including an increase in children's fruit, vegetable, and dairy consumption (see Figure 4).⁴²

heavily on self-reporting of most outcomes (which could be subject to social desirability bias, or the tendency to answer questions in a manner that others will view favorably). The studies also differ substantially in the amount, frequency, and form of the incentive.

³⁸ Rajan Sonik, Susan Parish, and Monika Mitra, “Inpatient Medicaid Usage and Expenditure Patterns After Changes in Supplemental Nutrition Assistance Program Benefit Levels,” *Preventing Chronic Disease*, 15, e120, 2018, <https://europepmc.org/articles/pmc6178899>. These results, based on national data on hospital admissions, are consistent with earlier research based on admissions in Massachusetts following the Recovery Act increases. See Rajan Sonik, “Massachusetts Inpatient Medicaid Cost Response to Increased Supplemental Nutrition Assistance Program Benefits,” *American Journal of Public Health*, 106(3), 443–448, 2016, <https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2015.302990>.

³⁹ Allison Bovell *et al.*, “Making SNAP Work for Families Leaving Poverty,” Children's HealthWatch, November 2014, <http://www.childrenshealthwatch.org/wp-content/uploads/FINALPhilly-Food-to-web3.pdf>; and Stephanie Ettinger de Cuba *et al.*, “Loss Of SNAP Is Associated With Food Insecurity And Poor Health In Working Families With Young Children,” *Health Affairs*, 38(5), May 2019, <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2018.05265>.

⁴⁰ Elizabeth March *et al.*, “Boost to SNAP Benefits Protected Young Children's Health,” Children's HealthWatch, October 2011, https://childrenshealthwatch.org/wp-content/uploads/SNAPincrease_brief_October2011.pdf. A child was considered “well” if she was not overweight or underweight and her parents reported her to be in good health, developing normally for her age, and never hospitalized.

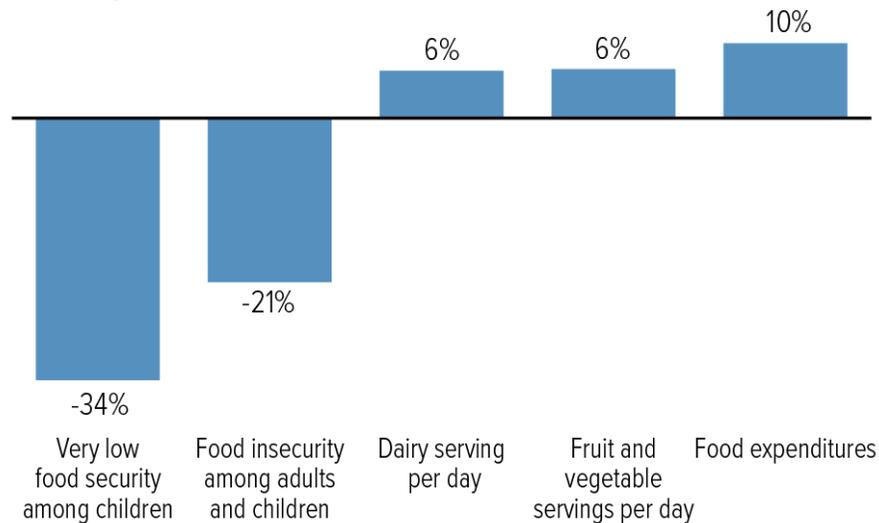
⁴¹ Lorenzo Almada and Ian McCarthy, “It's a cruel summer: Household responses to reductions in government nutrition assistance,” *Journal of Economic Behavior & Organization*, 143(11): 45-57, 2017, <http://www.sciencedirect.com/science/article/pii/S0167268117302330>.

⁴² The demonstration initially provided a monthly benefit of \$60 in the summer of 2012 and then compared the relative effectiveness of a smaller benefit (\$30) in the summers of 2013 and 2014. The results suggested that both increases

FIGURE 4

Additional SNAP Benefits Raise Food Expenditures and Improve Household Food Security

Impact of extra \$60 in SNAP benefits each summer month for each school-aged child in SNAP household



Note: Very low food security = one or more household members must cut the size of meals, skip meals, or go entire days without food due to lack of resources. Food insecurity = household members lack consistent access to enough food to support an active, healthy life.

Source: Collins and Klerman (2017), Summer Electronic Benefit Transfer for Children (SEBTC) Demonstration.

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Many Families Struggle Once SNAP Benefits Run Out

Food purchases among SNAP households follow a pronounced, well-documented cyclical pattern. Households redeem over half of their SNAP benefits within a week of receiving them, over three-quarters by the end of the second week, and 90 percent by the end of the third. Benefits normally run out for most households before the end of the month. A quarter of households exhaust their monthly benefits within a week of issuance, and more than half within two weeks.⁴³

produced similar improvement in the most severe form of food insecurity among children. See Ann Collins and Jacob Klerman, “Improving Nutrition by Increasing Supplemental Nutrition Assistance Program Benefits,” *American Journal of Preventive Medicine*, 52(2S2): S179-S185, 2017, <https://www.sciencedirect.com/science/article/pii/S0749379716303890>.

⁴³ Laura Castner and Juliette Henke, “Benefit Redemption Patterns in the Supplemental Nutrition Assistance Program,” USDA Food and Nutrition Service, February 2011, <http://www.fns.usda.gov/benefit-redemption-patterns-supplemental-nutrition-assistance-program>; Jeffrey Dorfman *et al.*, “Re-Examining the SNAP Benefit Cycle Allowing for Heterogeneity,” *Applied Economic Perspectives and Policy*, ppy013, 2018, <https://academic.oup.com/aep/advance-article-abstract/doi/10.1093/aep/ppy013/5025069>. Dorfman *et al.* found that the cyclical pattern varies considerably across SNAP households: while most (61 percent of the study sample) spent one-sixth of their benefits in the first four days of the benefit month, a minority (39 percent) spent two-thirds of the benefits in the first four days.

Given the program’s design, running out of SNAP benefits before the end of the month is not entirely unexpected. SNAP benefits are meant to supplement other sources of household income that can be used to purchase food, not to cover the full monthly cost of food for most households. Only those households with no net income after taking allowable deductions — just over a third of participating households in 2016 — receive the maximum SNAP benefit. The other two-thirds are expected to contribute 30 percent of their disposable income to purchase food.

Most households do, in fact, contribute their own earnings or other cash assistance benefits to pay for food. Almost 75 percent spend cash on food in addition to their SNAP benefit. SNAP benefits account for about half of participants’ total food spending and 63 percent of their spending on food at home.⁴⁴ In theory, therefore, the decline in the use of SNAP benefits over the course of a month might simply reflect participants spending down benefits before turning to cash, rather than participants running out of resources for food.

Numerous studies have found, however, that late in the benefit cycle, SNAP participants not only spend less on food but also consume fewer calories, are likelier to experience food insecurity, and may be likelier to visit emergency rooms or be admitted to a hospital because of low blood sugar. In addition, children score lower on basic achievement tests and disciplinary problems in school increase. These adverse consequences suggest that households’ overall resources for food — their SNAP benefits plus their own income — may not be enough to meet their needs.

- **Food spending falls rapidly throughout the month.** Multiple studies document large and significant reductions in overall food expenditures as a month unfolds and SNAP benefits are exhausted.⁴⁵ (See Figure 5 for the findings of one such study.) Among SNAP households, average daily food spending falls from \$66 on the day of and the day after receiving benefits to less than \$18 for the rest of the month, from \$63 in the first week of the benefit month to \$37 on average in the last three weeks, and from \$94 to \$19 from the first day to the last day of the benefit month.⁴⁶ Detailed scanner data from a national grocery retailer in one state show that

⁴⁴ Carole Trippe and Daisy Ewell, “An Analysis of Cash Food Expenditures of Food Stamp Households,” Memorandum 466 prepared for the USDA Food and Nutrition Service under contract FNS-02-030-TNN / 43-3198-3-3724, August 15, 2007; Laura Tiehen, Constance Newman, and John Kirlin, “The Food-Spending Patterns of Households Participating in the Supplemental Nutrition Assistance Program: Findings From USDA’s FoodAPS,” USDA Economic Research Service, August 2017, <https://www.ers.usda.gov/webdocs/publications/84780/cib-176.pdf?v=42962>.

⁴⁵ Many states stagger the issuance of SNAP benefits over multiple days at the beginning of the month. As a result, the SNAP “benefit month” does not always coincide with the calendar month. It is important that researchers control for this difference to separate the impacts of the SNAP benefit cycle from the impacts of other monthly cycles (such as the receipt of Social Security, cash assistance payments, or earned income). The strongest studies capture the length of time since the most recent SNAP issuance rather than time since the beginning of the month.

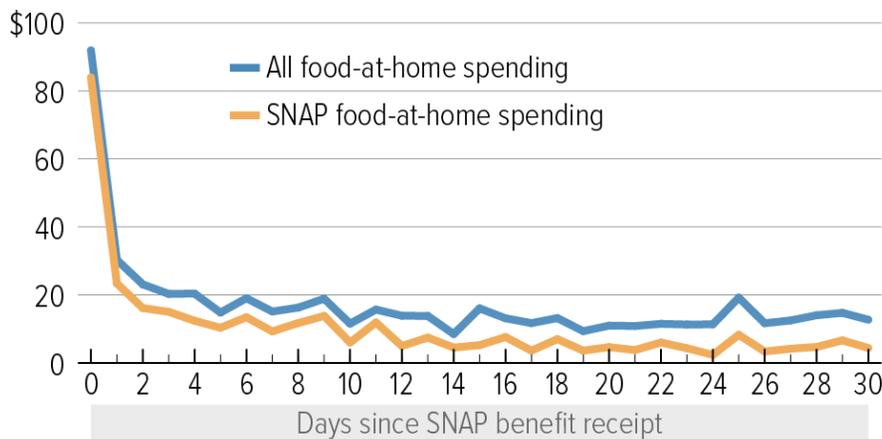
⁴⁶ Tiehen *et al.* (2017); Travis Smith *et al.*, “The Effects of Benefit Timing and Income Fungibility on Food Purchasing Decisions Among Supplemental Nutrition Assistance Program Households,” *American Journal of Agricultural Economics*, 98(2): 564–80, 2016, <https://academic.oup.com/ajae/article-abstract/98/2/564/2195661>; Michael Kuhn, “Causes and Consequences of the Calorie Crunch,” University of Kentucky Center for Poverty Research Discussion Paper Series, DP2016-11, 2016, https://uknowledge.uky.edu/ukcpr_papers/112/. Related research suggests that introducing electronic benefit transfer (EBT) substantially reduced the expenditure cycle among households with children. Food expenditures for a household with one adult and two children, for example, were \$19 higher in the fourth week of the benefit cycle after EBT was implemented; this increase was made possible by a reduction in the large spending spike in the first week. See Michael Kuhn, “Cyclical Food Insecurity and Electronic Benefit Transfer,” unpublished manuscript, April 2018, https://pages.uoregon.edu/mkuhn/pdfs/k_comb.pdf.

SNAP households reduce their food expenditures by 34 percent between the first and last weeks of the month after benefit issuance.⁴⁷

FIGURE 5

SNAP Household Spending on Food Falls Throughout the Month

Average daily expenditures for food



Source: Laura Tiehen, Constance Newman, and John Kirlin, *The Food-Spending Patterns of Households Participating in the Supplemental Nutrition Assistance Program: Findings From USDA's FoodAPS*, Economic Research Service, USDA, August 2017

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- **Food consumption falls throughout the month.** Food intake, most often measured as the number of calories consumed, falls off at the end of the benefit month, probably by as much as 10 to 25 percent.

In one of the earliest studies on this issue, participants who do their major grocery shopping once a month or less frequently consumed fewer calories four weeks after receiving benefits than in the each of the first three weeks. Another study from the same period estimates that consumption (again measured by calorie intake) fell by roughly 9 to 12 percent over the course of a month.⁴⁸

⁴⁷ Justine S. Hastings and Ebonya L. Washington, “The First of the Month Effect: Consumer Behavior and Store Responses,” *American Economic Journal: Economic Policy*, 2(2): 142-162, 2010, <https://core.ac.uk/download/pdf/6606222.pdf>.

⁴⁸ Parke Wilde and Christine Ranney, “The Monthly Food Stamp Cycle: Shopping Frequency and Food Intake Decisions in an Endogenous Switching Regression Framework,” *American Journal of Agricultural Economics*, 82(1): 200–213, 2000, <https://naldc.nal.usda.gov/download/29691/PDF>. Wilde and Ranney found that 42 percent of households receiving food stamps conducted a major grocery shopping trip once per month or less frequently. These households are more likely than other low-income households to be infrequent shoppers due to transportation difficulties, time constraints, or stigma associated with food stamps. Jesse Shapiro, “Is There a Daily Discount Rate? Evidence from the Food Stamp Nutrition Cycle,” *Journal of Public Economics*, 89(2-3): 303-325, 2005, <http://www.brown.edu/Research/Shapiro/pdfs/highfreq111703.pdf>.

More recent studies affirm these results. Adults participating in SNAP consume about 38 percent fewer calories per day in the last two days of the month than in the rest of the month, and about 25 percent less relative to their estimated energy requirement.⁴⁹ Working-age adults are also much more likely to skip meals or go without eating by the end of the month.⁵⁰ While SNAP participants may consume as many as 12 fewer meals, children — especially very young children — are less likely to skip meals, as parents shelter them from the effects of the benefit cycle. Elementary school children, however, may eat less during summer months when school is out of session, as noted above.⁵¹

- **Hunger and food insecurity increase throughout the month.** While going an entire day without eating is rare (only about 1 percent of SNAP participants do so, according to time use surveys), the probability of a day without eating roughly triples from the first to the last day of the month. The probability of eating less than usual is nearly 17 percentage points higher in the final days of the benefit cycle.⁵² Similarly, a SNAP household is 11 percentage points likelier to be classified as food insecure near the end of or at the beginning of the benefit month than in the rest of the month.⁵³ In one mid-sized city, the chances of SNAP participants experiencing food insecurity rose by at least *five* times in the last third of a month.⁵⁴ And parents in a midwestern city who were able to stretch benefits further into the month were less likely to experience very low food security or physiological symptoms of hunger, such as dizziness.⁵⁵
- **Diet quality may be impaired by the end of the month.** Research exploring changes in dietary quality over the benefit cycle is limited and offers mixed evidence that quality falls as benefits run out. Two studies found three- to five-point reductions in the Healthy Eating

⁴⁹ Jessica Todd, “Revisiting the Supplemental Nutrition Assistance Program cycle of food intake: Investigating heterogeneity, diet quality, and a large boost in benefit amounts,” *Applied Economic Perspectives and Policy*, 37(3): 437-458, 2015, <https://academic.oup.com/aep/article-abstract/37/3/437/8261>.

⁵⁰ Jessica Todd and Christian Gregory, “Changes in Supplemental Nutrition Assistance Program real benefits and daily caloric intake among adults,” *Food Policy*, August 2018, <https://doi.org/10.1016/j.foodpol.2018.06.004>.

⁵¹ Kuhn (2016).

⁵² Karen Hamrick and Margaret Andrews, “SNAP Participants’ Eating Patterns Over the Benefit Month: A Time Use Perspective,” *PLoS One*, 11(7): e0158422, 2016, <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0158422>; Todd (2015).

⁵³ Christian Gregory and Travis Smith, “Salience, Food Security, and SNAP Receipt,” *Journal of Policy Analysis and Management*, 38(1): 124-154, 2019, <https://onlinelibrary.wiley.com/doi/epdf/10.1002/pam.22093>. Gregory and Smith’s finding that SNAP households have a higher propensity to report food hardships at the end of the benefit month is consistent with existing literature on the benefit cycle, but they also found that the propensity to report food hardships was higher at the *beginning* of the month as well. They suggest that recent experiences of hardships at the end of the month may still be fresh in recipients’ minds even after they have received benefits, or that SNAP households may feel they need to justify receiving SNAP benefits.

⁵⁴ James Weinstein, Katie Martin, and Ann Ferris, “Household Food Security Varies Within Month and is Related to Childhood Anemia,” *Journal of Hunger & Environmental Nutrition*, 4(1): 48-61, 2009, <https://www.tandfonline.com/doi/abs/10.1080/19320240802706833>.

⁵⁵ Eric Calloway *et al.*, “Monthly SNAP benefit duration and its association with food security, hunger-coping, and physiological hunger symptoms among low-income families,” *Journal of Applied Research on Children*, 6(2), 2015, <https://digitalcommons.library.tmc.edu/childrenatrisk/vol6/iss2/5/>.

Index (HEI) for foods purchased later in the month.⁵⁶ Another found that household purchases of perishable and healthier foods associated with higher HEI scores fell over the month, while purchases of non-perishable and less healthy foods were more constant.⁵⁷ In contrast, at least one study found no pattern in the amount of fruit and vegetables consumed, and HEI scores of African Americans in low-income neighborhoods in Baltimore did not change based on the time since they received benefits.⁵⁸

- **Some families may increasingly rely on coping strategies to get through the month.** Some evidence suggests that many families draw on social networks to get through the month. A little more than half report borrowing money for food, with the need to borrow increasing 37 percent over the month; 38 percent report using a food bank.⁵⁹ Another study, however, found no relationship between reliance on coping strategies and the time until SNAP benefits ran out.⁶⁰
- **Running out of benefits may harm health and educational achievement.** Recent research highlights various behavioral consequences of the monthly cycle in food consumption. Children’s test scores, for example, are lower at the end of the benefit month, and children are more likely to misbehave in school.⁶¹ In addition, emergency room visits and hospital admissions to treat low blood sugar (which can occur when diabetics reduce their food intake) appear to spike near the end of the month, though the evidence is mixed.

⁵⁶ The HEI is a measure of diet quality used to assess how well a set of foods aligns with key recommendations of the Dietary Guidelines for Americans. The maximum possible score is 100, though the typical American diet falls well short of the ideal. Eliza Whiteman, Benjamin Chrisinger, and Amy Hillier, “Diet Quality Over the Monthly Supplemental Nutrition Assistance Program Cycle,” *American Journal of Preventive Medicine*, 2018, <https://www.sciencedirect.com/science/article/pii/S0749379718317343>; Amy Hillier *et al.*, “The Influence of SNAP Participation and Food Environment on Nutritional Quality of Food at Home Purchases,” University of Kentucky Center for Poverty Research Discussion Paper Series, DP2016-10, 2016, https://uknowledge.uky.edu/ukcpr_papers/111/. Both studies use national data on food purchases. A third study, based on a small sample of women receiving SNAP benefits in Texas, found even larger reductions in the HEI four weeks after benefit receipt. See Namrata Sanjeevi and Jeanne Freeland-Graves, “Monthly Variations in Dietary Intake of Women Participating in the Supplemental Nutrition Assistance Program,” *Journal of the Academy of Nutrition and Dietetics*, 119(2): 261-271, 2019, <https://www.sciencedirect.com/science/article/pii/S221226721830755X>.

⁵⁷ Smith *et al.* (2016).

⁵⁸ Todd (2015) and Anna Kharmats *et al.*, “Relation Between the Supplemental Nutritional Assistance program cycle and dietary quality in low-income African Americans in Baltimore, Maryland,” *American Journal of Clinical Nutrition*, 99(5): 1006-1014, 2014, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3985207/>. The latter study is based on a small, non-random sample that is not easily generalized to a larger population.

⁵⁹ Anika Schenck-Fontaine, Anna Gassman-Pines, and Zoelene Hill, “Use of Informal Safety Nets during the Supplemental Nutrition Assistance Program Benefit Cycle: How Poor Families Cope with Within-Month Economic Instability,” *Social Service Review*, 91(3): 456-487, September 2017, <https://www.journals.uchicago.edu/doi/pdfplus/10.1086/694091>. This study is based on a small, non-random sample of predominately African American families that is not easily generalized to a larger population.

⁶⁰ Calloway *et al.* (2015).

⁶¹ Anna Gassman-Pines and Laura Bellows, “Food Instability and Academic Achievement: A Quasi-Experiment Using SNAP Benefit Timing,” *American Educational Research Journal*, 55(5): 897-927, 2018, <http://journals.sagepub.com/doi/10.3102/0002831218761337>; Chad Cotti, John Gordanier, and Orgul Ozturk, “When Does It Count? The Timing of Food Stamp Receipt and Educational Performance,” *Economics of Education Review*, 66: 40-50, 2018, <https://www.sciencedirect.com/science/article/abs/pii/S0272775718303649>; Lisa Gennetian *et al.*, “Supplemental Nutrition Assistance Program (SNAP) Benefit Cycles and Student Disciplinary Infractions,” *Social Service Review*, 90(3): 403-33, 2016, <https://www.journals.uchicago.edu/doi/abs/10.1086/688074>.

One study found that the rate of hypoglycemia-related emergency room visits and hospital admissions in low-income communities in California was 27 percent higher in the last week of the month than the first, an increase not found in higher-income communities.⁶² Similarly, a separate study found that hospital admissions in the last week of the month were 7 percent higher in a national data set of medical claims among people with income below the national median.⁶³ Neither study, however, accounted for differences between the calendar month and the SNAP issuance cycle (most states stagger issuance of SNAP benefits over several days of each month), so it is difficult to attribute the results solely to the timing of SNAP benefits; other factors — such as receipt of monthly paychecks — may also be at work.

In contrast, two studies that examined whether either the timing or the size of SNAP benefits affected the number of emergency room claims for hypoglycemia and hypertension found no link between these claims and the timing of benefits but did find a modest link between these claims and the size of the SNAP benefit. A \$50 increase in monthly benefits, for example, would reduce the average number of hypoglycemia claims by 12 to 15 percent.⁶⁴ These results suggest that more generous SNAP benefits might help households avoid fluctuations in the quality and quantity of food that might result in low blood sugar, thus reducing emergency room visits for hypoglycemia.

- **Increasing benefits lessens the benefit cycle.** As noted above, before the Recovery Act benefit increase took effect, SNAP participants' daily calorie consumption fell by 38 percent in the last two days of the month; after those increases took effect, however, consumption *rose* by about 14 percent in the last two days of the month (see Figure 6).⁶⁵ Both calorie intake as a percentage of estimated energy requirements and the probability of eating less followed a similar pattern. Similarly, the declining value of SNAP benefits as inflation eroded the Recovery Act increase contributed to the re-emergence of the benefit cycle.⁶⁶ This evidence suggests that increased benefits can help smooth food intake over the course of a month. It may also suggest that benefits' adequacy might be more important than their timing in smoothing the cycle of consumption.

FIGURE 6

⁶² Hilary Seligman *et al.*, "Exhaustion of Food Budgets at Month's End and Hospital Admissions for Hypoglycemia," *Health Affairs*, 33(1): 116-123, 2014, <https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2013.0096>.

⁶³ Sanjay Basu, Seth Berkowitz, and Hilary Seligman, "The Monthly Cycle of Hypoglycemia: An Observational Claims-based Study of Emergency Room Visits, Hospital Admissions, and Costs in a Commercially Insured Population," *Medical Care*, 55(7): 639-645, 2017, https://journals.lww.com/lww-medicalcare/fulltext/2017/07000/The_Monthly_Cycle_of_Hypoglycemia_An.1.aspx.

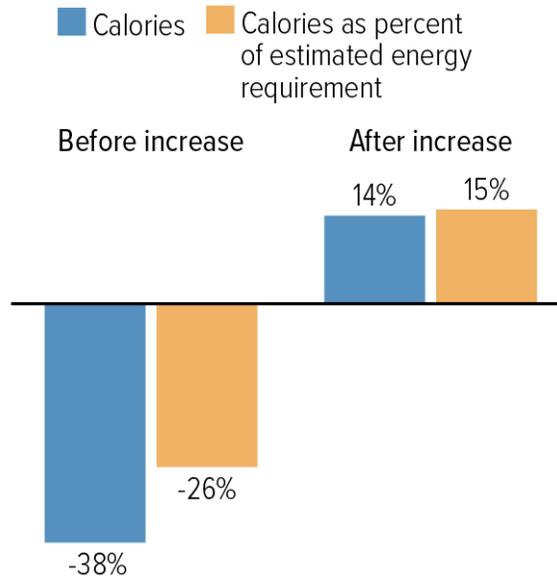
⁶⁴ Colleen Heflin, Leslie Hodges, and Peter Mueser, "Supplemental Nutrition Assistance Program benefits and emergency room visits for hypoglycaemia," *Public Health Nutrition*, 20(7): 1314-1321, 2017, <https://www.cambridge.org/core/journals/public-health-nutrition/article/supplemental-nutrition-assistance-program-benefits-and-emergency-room-visits-for-hypoglycaemia/D8A24285B12FC9B6C03069CAE62DC90A>; Chinedum Ojinnaka and Colleen Heflin, "Supplemental Nutrition Assistance Program size and timing and hypertension-related emergency department claims among Medicaid enrollees," *Journal of the American Society of Hypertension* (2018), <https://doi.org/10.1016/j.jash.2018.10.001>.

⁶⁵ Todd (2015).

⁶⁶ Todd and Gregory (2018).

2009 Recovery Act's SNAP Benefit Boost Reversed End-of-Month Calorie Reductions

Change in consumption in final two days of month



Source: Jessica Todd, "Revisiting the Supplemental Nutrition Assistance Program Cycle of Food Intake: Investigating Heterogeneity, Diet Quality, and a Large Boost in Benefit Amounts," *Applied Economic Perspectives and Policy*, 37(3): 437-458, 2015, Table 2

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Families Report Tradeoffs, Struggles Due to Inadequate Benefits

The research reviewed in this paper demonstrates that for many families, SNAP benefits do not cover the cost of a nutritious diet throughout the month for all family members. Qualitative research shows how falling short on money for food each month affects families and how they try to cope with inadequate benefits.

In these qualitative studies, families describe the tradeoffs they must make between food and other necessities:

- “[The] last week of the month is horrible because . . . if that week, anything happens, [you are going to have to go without]. For example, my son got mono four months ago [during that last week of the month], and he had to be seen and he had to have medication and so you think, ‘Okay, I’ve got \$200 for food.’ [If] you go spend \$88 on that and now what are you going to do? Food or medication?”^a
- “I was having to choose between medicine to stay out of pain and function and try to raise my ten-year-old because there are so many things I can’t do with him now like I did my other two sons. I’m afraid that’s all [he] is going to remember of me, that his mom was sick. So yeah, there have been times this year, the past year where there really wasn’t enough to eat and I felt really badly about it.”^b
- “I had to do without buying food in order to put gas in the truck to go to work the next day. . . . I get Food Stamps on the 5th. . . . Three weeks later, the food stamps are gone so at that point, the food’s coming out of my pocket and if I have money, I have to make that choice, you know? I have to have gas in order to work to make more money.”^c

Families also describe their struggle to afford an adequate, nutritious diet:

- “We are surviving, yes. Do I think [SNAP benefits] provide all of the fruits and vegetables that we require for our diets? No. I mean, if you were just buying ramen noodles and packets of cheap noodles and bags of rice [it does].”^d
- “[S]ometimes you be wanting to eat healthy, but it’s very — food is expensive. Period. But it’s more expensive when you’re trying to eat healthy. . . . And you can’t eat healthy off of \$169. So it’s like you gotta get what you can so you can get enough of it.”^e
- “Oh yeah, [SNAP] doesn’t cover a month. There is no way. It doesn’t cover a month, not with a growing ten-year-old. There is no way. Half the time I don’t eat. I’ll live on coffee and pain medication. That sounds awful but I can go without food. . . . That’s not the way to do it, I know, but when it comes to [him] eating or me, it’s going to be [him] every time.”^f

^a Kathryn Edin *et al.*, “SNAP Food Security In-Depth Interview Study,” U.S. Department of Agriculture, March 2013, <https://fns-prod.azureedge.net/sites/default/files/SNAPFoodSec.pdf>.

^b *Ibid.*

^c *Ibid.*

^d Alethea Chiappone *et al.*, “Perceptions and Experiences with SNAP and Potential Policies: Viewpoint from SNAP Participants,” *Journal of Hunger & Environmental Nutrition*, 14:1-2, 98-109, <https://www.tandfonline.com/doi/full/10.1080/19320248.2018.1512927>.

^e Eliza Whiteman Kinsey *et al.*, “Food and financial coping strategies during the monthly Supplemental Nutrition Assistance Program cycle,” *Population Health*, Vol. 7, April 2019, <https://www.sciencedirect.com/science/article/pii/S2352827319300114>.

^f Edin *et al.*

SNAP Benefits Are Less Affordable in Higher-Cost Areas

While SNAP benefits are adjusted each year to account for rising food prices, maximum benefits are the same across most states and the District of Columbia. This ensures that poor households with similar circumstances are eligible for the same SNAP benefit regardless of where they live. This uniformity is an important feature of SNAP and can reduce differences across the states in their overall financial support for low-income people, as some states where benefits stretch farther may have lower wages, lower cash assistance benefits, and higher poverty.

Food prices, however, are not the same across the country. A recent study estimates that 20 to 30 percent of SNAP households encounter food prices high enough that a nutritious, low-cost market basket would cost more than SNAP's maximum benefit, based on prices from stores where SNAP participants do most of their grocery shopping and from nearby stores where participants could also shop. The average shortfall among these households could be at least \$50 and perhaps as much as \$150 per month.⁶⁷

The reduced purchasing power of SNAP benefits due to higher local food prices affects more than just the affordability of a nutritious diet. SNAP participants in high-priced areas are nearly 20 percent more likely to be food insecure than those in low-priced areas.⁶⁸ In addition, children in high-priced areas receive less preventive and ambulatory care, are at greater risk of food insecurity, and have marginally worse nutritional outcomes. Modest increases in SNAP purchasing power are associated with improved utilization of health care, reduced food insecurity, and better school attendance (see Figure 7).⁶⁹ Higher SNAP purchasing power may improve children's health and other outcomes if it leads to better diets, enables families to spend more on health care (by reducing pressure on their limited budgets), or reduces family stress, making it easier to get children to school or to the doctor for annual exams.

Differences in local and regional housing prices can also affect the adequacy of SNAP benefits. Housing accounts for about 40 percent of SNAP participants' overall spending; food accounts for less than 25 percent. Families in areas with high housing costs may have less disposable income to spend on food. SNAP offers a deduction for excess shelter costs (including utilities) that exceed half of a participant's net income after all other deductions (up to a cap for most households) when determining benefits. In principle, this deduction should benefit families in areas with high shelter

⁶⁷ If SNAP households can identify and shop at the store with the lowest food cost in their area, the fraction that can afford the TFP rises above 90 percent. This assumption, however, is unlikely to hold for many SNAP households. The median size of the counties in this study is over 600 square miles, making it extremely unlikely that shoppers could identify and travel to the lowest-cost store. Even if they could, they would incur significant travel costs, which may outweigh their savings on food. See Erin Bronchetti, Garret Christensen, and Benjamin Hansen, "Variation in Food Prices and SNAP Adequacy for Purchasing the Thrifty Food Plan," University of Kentucky Center for Poverty Research Discussion Paper Series, DP2016-03, 2016, https://uknowledge.uky.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1117&context=ukcpr_papers.

⁶⁸ Christian Gregory and Alisha Coleman-Jensen, "Do High Food Prices Increase Food Insecurity in the United States?" *Applied Economic Perspectives and Policy*, 35(4): 679-701, 2013, <https://academic.oup.com/aep/article-abstract/35/4/679/8547>.

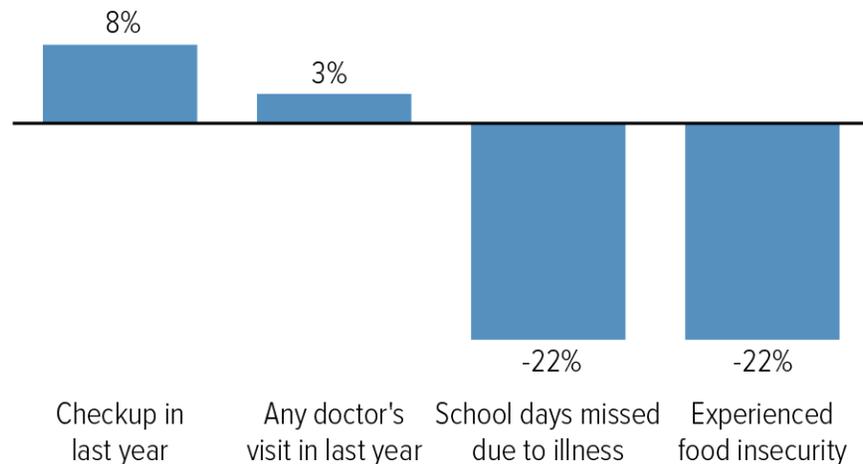
⁶⁹ Erin Bronchetti, Garret Christensen, and Hilary Hoynes, "Local Food Prices, SNAP Purchasing Power, and Child Health," NBER Working Paper No. 24762, June 2018, <https://www.nber.org/papers/w24762>; and Bronchetti *et al.* (2016).

costs, but the cap may limit its effectiveness in adjusting benefits to reflect differences in household circumstances due to housing costs.⁷⁰

FIGURE 7

10 Percent Increase in SNAP Purchasing Power Improves Child Outcomes

Change in selected outcomes associated with a 10 percent increase in SNAP purchasing power



Source: Bronchetti, Christensen, and Hoynes, "Local Food Prices, SNAP Purchasing Power, and Child Health," 2018.

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Increased SNAP Benefits Could Help Reduce Child Poverty

Children growing up in poor families typically fare worse — in physical and mental health, educational attainment and labor market success, and engagement in risky behaviors and delinquency — than children from wealthier families. Recognizing these harmful consequences, Congress directed the National Academies to identify evidence-based programs and policies that could reduce the number of children living in poverty by half within ten years.

The expert panel found compelling evidence of SNAP's importance in the lives of children and their families. SNAP is second only to the Earned Income Tax Credit (EITC) and the refundable portion of the Child Tax Credit in lifting children out of poverty, and no program is more effective than SNAP in lifting children out of deep poverty (with income less than half of the poverty line). SNAP also improves food security and health outcomes for children and their families.

The panel concluded that while no single program or policy could achieve the goal of cutting child poverty in half, a combination of expanded work supports and increases in selected means-tested benefits — including SNAP — could. Specifically, raising the maximum SNAP benefit by 35

⁷⁰ Laura Castner and James Mabli, "Low-Income Household Spending Patterns and Measures of Poverty," Mathematica Policy Research, April 2010, <https://fns-prod.azureedge.net/sites/default/files/SpendingPatterns.pdf>.

percent, increasing benefits for older children, and expanding the Summer Electronic Benefit Transfer for Children demonstration nationwide, when coupled with increases in the EITC and Child and Dependent Care Tax Credit to encourage and reward work and an expansion of housing vouchers, could reduce the number of children in poverty and in deep poverty by half. Policy options focused on work alone would fall far short of this goal, the panel found.⁷¹

How Much More Is Needed?

The research summarized here indicates that current SNAP benefits are not sufficient to meet the nutrition needs of many low-income households: food insecurity persists, even among current SNAP participants; many households lack the combination of time and money needed to purchase and prepare a nutritious diet; and the monthly benefit cycle as families exhaust their SNAP benefits adversely affects consumption, food security, dietary quality, and a host of other outcomes.

Research on how much more would be needed to eliminate hunger and food insecurity and mitigate other adverse consequences is limited but offers some useful insights. When asked directly, food-insecure participants say they need roughly \$10 to \$20 more per person each week to buy just enough food to meet their needs.⁷² While some may underreport and others may exaggerate their need, these responses roughly indicate participants' perceptions. Other researchers simulated the cost of a meal in every county and concluded that the average cost of a low-income meal (based on the Thrifty Food Plan) is 27 percent higher than the maximum SNAP benefit per meal, and that monthly benefits fall short of the cost of the average low-income meal by roughly \$11 per week.⁷³ Finally, some research suggests that households with a single adult would need about \$107 more each week — and two-adult households would need about \$23 more per week — to compensate for the time required to purchase and prepare meals consistent with the TFP.⁷⁴

⁷¹ National Academies of Sciences, Engineering, and Medicine, *A Roadmap to Reducing Child Poverty*. Washington, DC: The National Academies Press, February 2019, http://sites.nationalacademies.org/dbasse/bcyf/reducing_child_poverty/index.htm. While the authors discuss two SNAP expansions (which would expand the maximum benefit by 20 and 30 percent), they also propose a 35 percent benefit increase as part of a package that would reduce child poverty by 50 percent (which they term the “means-tested supports and work poverty reduction package”).

⁷² Craig Gundersen, Brent Kreider, and John V. Pepper, “Reconstructing the Supplemental Nutrition Assistance Program to More Effectively Alleviate Food Insecurity in the United States,” *Russell Sage Foundation Journal of the Social Sciences*, 4(2):113–130, 2018, <https://www.jstor.org/stable/pdf/10.7758/rsf.2018.4.2.06.pdf>; Anderson and Butcher (2016). For comparison, the average SNAP benefit per person in fiscal year 2018 was \$125 per month or \$29 per week.

⁷³ Elaine Waxman, Craig Gundersen, and Megan Thompson, “How Far Do SNAP Benefits Fall Short of Covering the Cost of a Meal?” Urban Institute, February 2018, https://www.urban.org/sites/default/files/publication/96661/how_far_do_snap_benefits_fall_short_of_covering_the_cost_of_a_meal_2.pdf.

⁷⁴ You and Davis (2018).

Is the Cost of the Thrifty Food Plan Realistic?

Setting aside the issues raised in this paper about the basic adequacy of the Thrifty Food Plan, is it possible to purchase the healthy diet it represents within its limited cost constraint? If the TFP does not sufficiently reflect the cost of a healthy market basket, low-income families may struggle to acquire food to meet their basic needs.

This question has received a fair amount of attention in the research literature. Some approach the question by comparing the cost of a market basket of foods from local stores to the cost of the TFP or by comparing the cost of a healthy diet to the value of the maximum SNAP benefit. Others have looked at the amounts that low-income families spend on food, again relative to the cost of the TFP. (The TFP is a monthly estimate of the cost of a particular market basket of foods. The maximum SNAP benefit is updated annually, with the maximum for each fiscal year set based on the cost of the TFP in the preceding June.) The results of these studies suggest there may be an issue of affordability – at least in some communities and for some families – but also that families may make different choices than the pattern the TFP assumes.

Many studies have tried to compare the cost of purchasing food that emulates the TFP from local food stores to the maximum SNAP benefits or the cost of the TFP, with mixed results. In general, according to one systematic review of 16 such studies, market basket prices in supermarkets were roughly evenly split between those higher than and those lower than maximum SNAP benefits or the cost of the TFP; almost all studies found higher market basket prices at small and medium-sized stores.^a For example:

- The cost of 104 food items intended to mimic the TFP from four supermarkets in low-income neighborhoods of Philadelphia was 16 percent more than the maximum SNAP benefit for a family of four at the time.^b
- The cost of 58 food items from the only large-scale discount retailer in a small Rhode Island city was as much as 18 percent less than the cost of the TFP at the time.^c
- The cost of 68 items priced at the lowest unit cost in 34 supermarkets and discount food stores in the District of Columbia was approximately equal (within 3 percent) to the cost of the TFP for a family of four at the time.^d

Interpreting these results is difficult. The studies on which they are based are generally small, vary widely in the tools and protocols used, and are not easily generalized beyond the communities in which they were conducted.

More recently, some have noted that the TFP was last revised in 2006 based on the 2005 Dietary Guidelines for Americans and the 2005 MyPyramid Food Guidance System. Since then, USDA and the Department of Health and Human Services updated the Dietary Guidelines in 2010 and replaced MyPyramid with MyPlate. The estimated cost of eating in accordance with these more current recommendations ranges from \$558 to \$749 per month for a family of four, compared to a maximum SNAP benefit of \$649 in 2015.^e

Finally, several studies examine the food spending patterns of low-income households. In general, low-income households' spending on food at home appears to average roughly 80 percent of the cost of the TFP, well below the minimal standard for a nutritious diet. Many low-income households, however, spend more on *all* food, both food prepared at home and food prepared away from home, than the cost of the TFP. On average, total food spending could be as much as a third higher than the cost of the TFP; roughly half of low-income households spend an amount at least equal to the TFP.^f These results suggest that the typical low-income household spends about the same amount on total food (at home and away) as the TFP but may allocate its limited food

budget differently in order to save time (by buying more convenient forms of food), accommodate household taste preferences, or for other reasons, such as limited food availability in the area.

^a Melissa Horning and Jayne Fulkerson, "A Systematic Review on the Affordability of a Healthful Diet for Families in the United States," *Public Health Nursing*, 32(1), 2015: 68-80, <https://onlinelibrary.wiley.com/doi/abs/10.1111/phn.12145>.

^b This study took place when the Recovery Act's benefit increase was still in effect. Absent this increase, the difference would have been 31 percent (\$184). The authors also present results that average costs across supermarkets, medium, and small stores, giving equal weight to each store. This approach increases the overall average because medium and small stores tend to have higher prices than supermarkets. It also gives a disproportionate weight to smaller stores since over 80 percent of SNAP benefits are used at superstores and supermarkets. Amanda Breen *et al.*, "The Real Cost of a Healthy Diet," Center for Hunger-Free Communities and Children's HealthWatch, November 2011, http://www.centerforhungerfreecommunities.org/sites/default/files/pdfs/RCOHD_Report2011-FINAL.pdf.

^c The aggregate market basket cost across all retailers was approximately 41 percent higher than the TFP. As noted above, we emphasize the results more representative of where participants actually shop for food. Kim Gans *et al.*, "Availability, Affordability, and Accessibility of a Healthful Diet in a Low-Income Community, Central Falls, Rhode Island, 2007-2008," *Preventing Chronic Disease*, 7(2):A43, 2010, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2831797/>.

^d Margaret Andrews *et al.*, "Using USDA's Thrifty Food Plan to Assess Food Availability and Affordability," *FoodReview*, 24(2), 45-53, 2001, <https://ageconsearch.umn.edu/bitstream/234543/2/FRV24i2h.pdf>.

^e The range reflects six different types of family composition; the mix of fresh, frozen, and canned fruits and vegetables; and the source of protein, including a vegetarian option. The high end of the range is for a family of four with two adults (age 31 to 50) and two older children (age 8 to 11 and 12 to 17) that consumes only fresh fruits and vegetables. The low end is for a family of four with two adults and two younger children (age 2 to 4 and 5 to 7) on a vegetarian diet in which beans are the main source of protein and fruit and vegetable consumption is split evenly between fresh, frozen, and canned. The authors report the full cost of purchasing and preparing a healthy diet, including the cost of labor, based on an estimate that food accounts for 60 percent of the full cost. We reduced their estimates (\$930 and \$1,249) by 60 percent to make a more comparable estimate to the food costs reflected in the TFP. We address the time cost of food preparation elsewhere in this paper. See Kranti Mulik and Lindsey Haynes-Maslow, "The Affordability of MyPlate: An Analysis of SNAP Benefits and the Actual Cost of Eating According to the Dietary Guidelines," *Journal of Nutrition Education and Behavior*, 49(8):623-631, 2017, <http://www.sciencedirect.com/science/article/pii/S1499404617307625>.

^f Hayden Stewart and Noel Blisard, "The Thrifty Food Plan and low-income households in the United States: What food groups are being neglected?" *Food Policy*, 31(5): 469-482, 2006, <https://pdfs.semanticscholar.org/8d3e/8898e09ddf1b7bee38238906ebe701696d8e.pdf>; Alisha Coleman-Jensen *et al.*, "Household Food Security in the United States in 2017," USDA Economic Research Service, September 2018, <https://www.ers.usda.gov/publications/pub-details/?pubid=90022>; Laura Tiehen, Constance Newman, and John Kirlin, "The Food-Spending Patterns of Households Participating in the Supplemental Nutrition Assistance Program: Findings From USDA's FoodAPS," USDA Economic Research Service, August 2017, <https://www.ers.usda.gov/webdocs/publications/84780/eib-176.pdf?v=42962>; Namrata Sanjeevi and Jeanne Freeland-Graves, "Association of Grocery Expenditure Relative to Thrifty Food Plan Cost with Diet Quality of Women Participating in the Supplemental Nutrition Assistance Program," *Journal of the Academy of Nutrition and Dietetics*, July 2018, <https://www.sciencedirect.com/science/article/pii/S2212267218307640>.

Conclusions

The preponderance of evidence suggests that current SNAP benefits fall short of what many families need to ensure they have enough food to meet their needs. Millions of SNAP participants regularly struggle to meet their food needs. Even those who achieve food security may find it hard to stretch their limited resources far enough to purchase and consume a diet that is healthy. Current benefit levels unrealistically assume that beneficiaries can take the time to prepare meals from scratch. And many families struggle to meet their needs once SNAP benefits run out, an occurrence linked to negative outcomes.

This evidence shows that raising SNAP benefits would materially improve food security and lessen the adverse effects linked to households running out of adequate food before the end of the month and could contribute to improved health outcomes.