



Economic Research Service

U.S. DEPARTMENT OF AGRICULTURE

Economic
Research
Service

Economic
Research
Report
Number 309

September 2022

Household Food Security in the United States in 2021

Alisha Coleman-Jensen
Matthew P. Rabbitt
Christian A. Gregory
Anita Singh



Economic Research Service

U.S. DEPARTMENT OF AGRICULTURE

Economic Research Service

www.ers.usda.gov

Recommended citation format for this publication:

Coleman-Jensen, Alisha, Matthew P. Rabbitt, Christian A. Gregory, Anita Singh, September 2022. *Household Food Security in the United States in 2021*, ERR-309, U.S. Department of Agriculture, Economic Research Service.

Use of commercial and trade names does not imply approval or constitute endorsement by USDA.

To ensure the quality of its research reports and satisfy governmentwide standards, ERS requires that all research reports with substantively new material be reviewed by qualified technical research peers. This technical peer review process, coordinated by ERS' Peer Review Coordinating Council, allows experts who possess the technical background, perspective, and expertise to provide an objective and meaningful assessment of the output's substantive content and clarity of communication during the publication's review.

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.



Economic
Research
Service

Economic
Research
Report
Number 309

September 2022

Household Food Security in the United States in 2021

Alisha Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory, Anita Singh

Abstract

This report provides statistics on food security in U.S. households throughout 2021 based on the Current Population Survey Food Security Supplement data collected in December 2021. An estimated 89.8 percent of U.S. households were food secure throughout the entire year in 2021, with access at all times to enough food for an active, healthy life for all household members. The remaining households (10.2 percent, not significantly different from the 10.5 percent in 2020 and 2019) were food insecure at least some time during the year, including 3.8 percent with very low food security (not significantly different from the 3.9 percent in 2020 or 4.1 percent in 2019). Very low food security is the more severe range of food insecurity where one or more household members experienced reduced food intake and disrupted eating patterns at times during the year because of limited money and other resources for obtaining food. Although the prevalence of food insecurity for all households was not significantly different from 2020, some subgroups experienced statistically significant changes in food insecurity. Food insecurity increased significantly from 2020 for households with no children, especially for women living alone, and increased for elderly people living alone. Food insecurity declined from 2020 for households with children and with children under age 6, married couples with children, and single mothers with children, for households with Black, non-Hispanic reference persons (an adult household member in whose name the housing unit is owned or rented), for all low-income households (with incomes below 185 percent of the Federal poverty threshold), and for households in the South. Among children, food insecurity declined from 2020. Children and adults were food insecure at times during 2021 in 6.2 percent of U.S. households with children, down from 7.6 percent in 2020 and not significantly different from the 6.5 percent in 2019. In 2021, very low food security among children was 0.7 percent (not significantly different from the 0.8 percent in 2020). In 2021, the typical food-secure household spent 16 percent more on food than the typical food-insecure household of the same size and household composition. About 56 percent of food-insecure households participated in one or more of the three largest Federal nutrition assistance programs: the Supplemental Nutrition Assistance Program (SNAP); the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Lunch Program during the month prior to the 2021 survey.

Keywords: food security, food insecurity, food spending, food pantry, soup kitchen, emergency kitchen, material well-being, material hardship, Supplemental Nutrition Assistance Program, SNAP, National School Lunch Program, Special Supplemental Nutrition Program for Women, Infants, and Children, WIC, COVID-19, coronavirus pandemic

Acknowledgments

The authors thank Reem Hashad, Michele Ver Ploeg, Debbie Rubas, and Jay Variyam of USDA, ERS for their reviews. The authors also thank two external reviewers, Colleen Heflin of Syracuse University, New York, and Hilary Seligman of the University of California, San Francisco, for their insightful feedback. Thanks also to USDA, ERS editors Jeff Chaltas, Christopher Whitney, and Grant Wall and USDA, ERS designer Jeremy Bell for their work in producing the report.

About the Authors

Alisha Coleman-Jensen is a sociologist, and Matthew P. Rabbitt and Christian A. Gregory are economists in the USDA, Economic Research Service (ERS), Food Economics Division, Food Assistance Branch. Anita Singh is chief of the SNAP Evaluation Branch in the USDA, Food and Nutrition Service, SNAP Research and Analysis Division.

Contents

Summary	iii
Introduction	1
Household Food Security	2
Methods	2
Prevalence of Food Insecurity by Selected Household Characteristics	16
Prevalence of Food Insecurity by State	23
Household Spending on Food	28
Methods	28
Food Expenditures by Selected Household Characteristics	29
Food Expenditures and Household Food Security	32
Federal Nutrition Assistance Programs and Food Security	33
Methods	35
Food Security of Households That Received Nutrition Assistance	36
Participation in Federal Nutrition Assistance Programs by Food-Insecure Households	38
References	40

List of Tables

Table 1A—Households and individuals by food security status of household, 1998–2021.	10
Table 1B—Households with children by food security status and children by food security status of household, 1998–2021.	12
Table 2—Households by food security status and selected household characteristics, 2021.	17
Table 3—Prevalence of food security and food insecurity in households with children by selected household characteristics, 2021.	20
Table 4—Prevalence of household food insecurity and very low food security by State, average 2019–21.	25
Table 5—Change in prevalence of household food insecurity and very low food security by State: 2019–21 (average), 2016–18 (average), and 2009–11 (average) ¹	27
Table 6—Weekly household food spending per person and relative to the household cost of the Thrifty Food Plan (TFP), 2021.	31
Table 7—Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP) by food security status, 2021.	32
Table 8—Percentage of households by food security status and participation in selected Federal nutrition assistance programs, 2021.	38
Table 9—Participation of food-insecure households in selected Federal nutrition assistance programs, 2021.	39

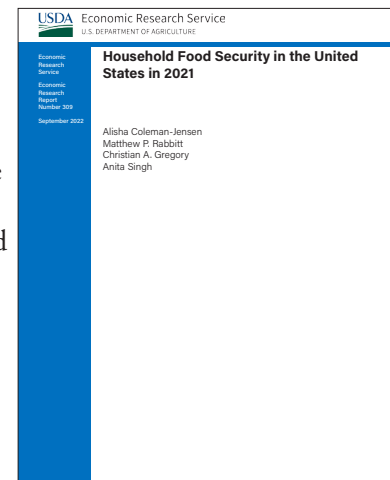
Additional tables are available in: Coleman-Jensen, Alisha, Matthew P. Rabbitt, Christian A. Gregory, and Anita Singh. 2022. *Statistical Supplement to Household Food Security in the United States in 2021*, AP-105, U.S. Department of Agriculture, Economic Research Service

Household Food Security in the United States in 2021

Alisha Coleman-Jensen, Matthew P. Rabbitt, Christian A. Gregory, Anita Singh

What Is the Issue?

Most U.S. households have consistent, dependable access to enough food for active, healthy living—they are food secure. However, some households experience food insecurity at times during the year, meaning their ability to acquire adequate food is limited by a lack of money and other resources. The U.S. Department of Agriculture's (USDA) food and nutrition assistance programs aim to increase food security by providing low-income households access to food for a healthful diet, as well as nutrition education. USDA monitors the extent and severity of food insecurity in U.S. households through an annual, nationally representative survey sponsored and analyzed by USDA's Economic Research Service (ERS). This report presents statistics from the survey that cover household food security, food expenditures, and the use of Federal nutrition assistance programs in 2021. The prevalence of food insecurity is determined by many factors, including household circumstances, the economy, and Federal, State, and local policies. This report does not provide an analysis of possible causal explanations for prevalence or trends in food insecurity.



What Did the Study Find?

- In 2021, 89.8 percent of U.S. households were food secure. The remaining 10.2 percent (13.5 million households) were *food insecure*. Food-insecure households (those with low and very low food security) had difficulty at some time during the year providing enough food for all their members because of a lack of resources. The 2021 prevalence of food insecurity was not significantly different from the 10.5 percent recorded in 2020 (13.8 million households) and 2019 (13.7 million households).
- In 2021, 3.8 percent of U.S. households (5.1 million households) had *very low food security*, not significantly different from the 3.9 percent in 2020 or 4.1 percent in 2019. In this more severe range of food insecurity, the food intake of some household members was reduced, and normal eating patterns were disrupted at times during the year because of limited resources.

Findings for households with children:

- Children were food insecure at times during 2021 in 6.2 percent of U.S. households with children (2.3 million households), down from 7.6 percent in 2020 and not significantly different from the 6.5 percent in 2019. These households with *food insecurity among children* were unable at times to provide adequate, nutritious food for their children.

- While children are usually shielded from the disrupted eating patterns and reduced food intake that characterize very low food security, in 2021, children along with adults suffered instances of very low food security in 0.7 percent of households with children (274,000 households), not significantly different from the 0.8 percent in 2020. These households with *very low food security* among children reported that children were hungry, skipped a meal, or did not eat for a whole day because there was not enough money for food.

Findings for specific population subgroups that experienced significant changes in food insecurity:

- The prevalence of food insecurity increased from 2020 to 2021 for households with no children, especially for women living alone. Food insecurity also increased for elderly people living alone.
- The prevalence of food insecurity declined from 2020 to 2021 for a few population subgroups, including households with children under age 18 and with children under age 6, married couples with children, and single mothers with children. Food insecurity also declined for households with Black, non-Hispanic reference persons (an adult household member in whose name the housing unit is owned or rented), all low-income households, and households in the South.

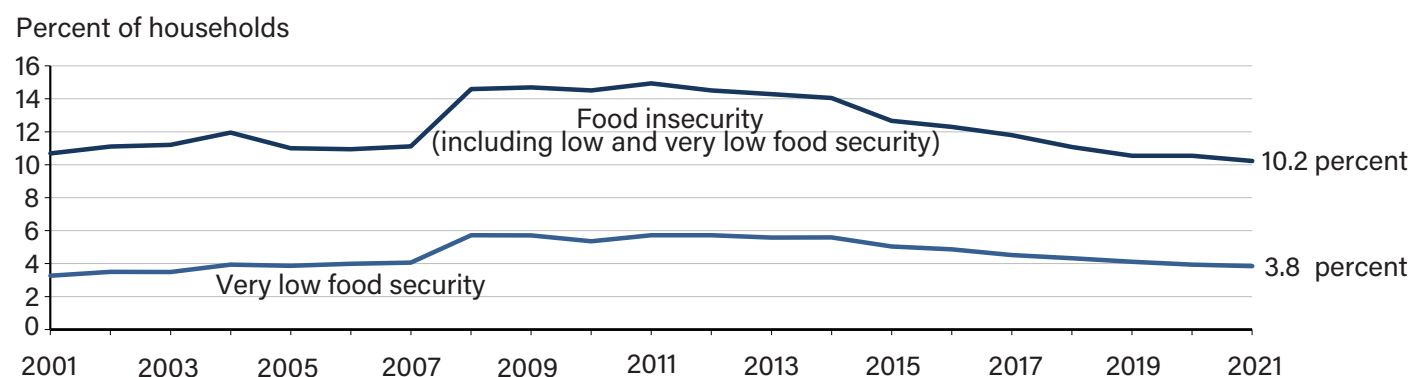
Findings for food spending and Federal nutrition assistance participation:

- The typical (median) food-secure household spent 16 percent more for food than the typical food-insecure household of the same size and composition. These estimates include food purchases made with Supplemental Nutrition Assistance Program (SNAP) benefits.
- About 56 percent of food-insecure households in the survey reported that in the previous month, they participated in one or more of the three largest Federal nutrition assistance programs: SNAP; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and the National School Lunch Program.

How Was the Study Conducted?

Data for the USDA, ERS food security reports come from an annual survey conducted by the U.S. Department of Commerce, Bureau of the Census as the December supplement to the monthly Current Population Survey. USDA, ERS sponsors the annual Food Security Supplement and compiles and analyzes the responses. The 2021 Food Security Supplement survey included 30,343 households that comprise a representative sample of the U.S. civilian population of about 132 million households. The food security survey asked one adult respondent per household about experiences and behaviors that indicate food insecurity during calendar year 2021, such as being unable to afford balanced meals, cutting the size of meals, or being hungry because of too little money for food. The food security status of the household was assigned based on the number of food-insecure conditions reported.

Prevalence of food insecurity in 2021 is unchanged from 2020



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplement.

Household Food Security in the United States in 2021

Introduction

Since 1995, the U.S. Department of Agriculture (USDA) has collected information annually on food access and adequacy, food spending, and sources of food assistance for the U.S. population. The information is collected in an annual survey, the Food Security Supplement, conducted by the U.S. Department of Commerce, Bureau of the Census as a supplement to the nationally representative Current Population Survey (CPS).¹ A major impetus for this data collection is to provide information about the prevalence and severity of food insecurity in U.S. households. Annual monitoring of food security contributes to the effective operation of Federal nutrition assistance programs as well as private food assistance programs and other government initiatives aimed at reducing food insecurity. Previous reports in the series are available on the USDA, ERS website.

This report updates national statistics on food security in calendar year 2021, household food spending, and the use of Federal nutrition assistance by food-insecure households. It uses data collected in the December 2021 Current Population Survey Food Security Supplement (CPS-FSS)—the 27th annual survey in the Nation’s food security monitoring system. Additional statistics—including the prevalence of food insecurity during the 30 days prior to the food security survey by household characteristics, the frequency of food-insecure conditions, and use of food pantries and emergency kitchens—are available in the Statistical Supplement to this report (Coleman-Jensen et al., 2022).

Statistics in this report reflect household experiences of food hardship, or food insecurity, throughout 2021. The Coronavirus (COVID-19) pandemic began in the United States in 2020 and continued in 2021. Public health and economic effects of the pandemic, as well as some pandemic-related changes to assistance programs, continued in 2021. The prevalence of food insecurity is determined by many factors, including the economy, Federal, State, and local policies, and household circumstances. This report does not provide an analysis of possible causal explanations for the prevalence of or trends in food insecurity.

¹ See Coleman-Jensen (2015) for the history of the food security measurement project and the development of food security measures.

Household Food Security

Food security—access by all people at all times to enough food for an active, healthy life—is one of several conditions necessary for a population to be healthy and well nourished. This section provides information on food security and food insecurity in U.S. households throughout 2021.

Methods

Statistics presented in this report are based on data collected in the Food Security Supplement to the CPS conducted in December 2021.² The CPS includes about 50,000 households and is representative of the civilian, noninstitutionalized population of the United States at State and national levels.³ In December 2021, 42,949 households completed the monthly CPS, and of those, 30,343 households completed the Food Security Supplement (FSS), and the remaining households were unable or unwilling to do so. Therefore, in 2021, 70.6 percent (30,343 households) of households that completed the monthly December CPS also completed the FSS, and 29.4 percent of households that responded to the monthly December CPS did not complete the FSS.⁴ The Census Bureau calculates survey sample weights for the FSS to indicate how many households were represented by each household that responded to the survey. Reweighting of the FSS considers income and other information about households that completed the labor-force portion of the monthly CPS survey but not the FSS. This corrects, to some extent, biases that could result from nonresponse to the Supplement by households that completed only the labor-force part of the survey. All statistics in this report were calculated by applying the FSS weights to responses by the surveyed households, so the statistics are nationally representative.

Unless otherwise noted, statistical differences described in this report are significant at the 90-percent confidence level. Standard errors of estimates were calculated using balanced repeated replication (BRR) methods based on replicate weights computed for the CPS-FSS by the Census Bureau.⁵ Statistical significance depends both on the size of the difference of the estimates and the precision of the estimates—or the size of the standard error of the estimates. Standard errors vary across population subgroups. This report uses the phrase “essentially unchanged” or “not significantly different” to describe differences between estimates of a statistic for 2 years that are not statistically significant at the 90-percent confidence level.

The methods used to measure the extent and severity of food insecurity here are described in detail in several studies (Hamilton et al., 1997a, 1997b; Andrews et al., 1998; Bickel et al., 1998; Carlson et al., 1999; Bickel et al., 2000; Nord and Bickel, 2002). See also the assessment of the measurement methods by a panel of the Committee on National Statistics (National Research Council, 2006).⁶ Household food security statistics

² The food security survey was conducted December 12–21, 2021. Respondents are reminded in the survey to answer about their food situation “in the last 12 months, since December of last year.”

³ In 2020 and 2021, response rates for the monthly Current Population Survey (CPS) were down from previous years. This is believed to be an effect of the COVID-19 pandemic on data collection. The U.S. Bureau of Labor Statistics reported that the CPS response rate for December 2021 was 73.2 percent, up from the low of 65 percent in June 2020 but down from the average response rate of 83 percent for the 12 months ending in February 2020 (U.S. Department of Labor, U.S. Bureau of Labor Statistics, 2022).

⁴ Supplement nonresponse was higher in 2021 (29.4 percent) than in 2020 (24.2 percent) but similar to 2019 (30.3 percent). At USDA, ERS’s request, the Census Bureau conducted nonresponse bias analyses of the 2015 and 2020 FSS data collections. While the analysis for 2015 found that the distributions of respondents and nonrespondents differ on some demographic characteristics, those distributional differences do not necessarily indicate a nonresponse bias problem (Farnham, 2017). Results for 2020 were similar; distributions of respondents and nonrespondents differ on some demographic characteristics, with the largest differences in response rates for race of reference person and income. However, weighting adjustment may minimize the impact of differences (Hoop et al., 2022).

⁵ For years before 2011, standard errors of national estimates used a design factor of 1.6 based on the complex Current Population Survey (CPS) sample design. State-level estimates from 2010 to the present use replicate weights computed for the CPS Food Security Supplement. Before 2010, standard errors of State-level estimates were calculated using jackknife replication methods with “month in sample” groups considered as separate independent samples. Standard errors of all estimates are available from the authors by request.

⁶ Further details on the development of the measure are provided on the USDA, ERS website.

presented here are based on a measure of food security calculated from responses to a series of questions about conditions and behaviors that characterize households when they have difficulty meeting basic food needs. Each question asks whether the condition or behavior occurred at any time during the previous 12 months and specifies the reason as a lack of money and other resources to obtain food. Voluntary fasting or dieting to lose weight are thereby excluded from the measure. The series includes three questions about the household's food conditions as a whole and seven questions about food conditions of adults in the household. If children are present, an additional eight questions about their food conditions are included (see box, "Questions Used To Assess the Food Security of Households in the CPS Food Security Supplement," page 4).⁷

Responses to the 18 food security questions are reported in tables S-5 and S-6 of the Statistical Supplement (Coleman-Jensen et al., 2022). The number of food-insecure conditions and behaviors the household reports determine the food security status of each interviewed household.⁸ Households are classified as food secure if they report no food-insecure conditions or only one or two food-insecure conditions. (Food-insecure conditions are indicated by responses of "often" or "sometimes" to questions 1–3 and 11–13; "almost every month" or "some months but not every month" to questions 5, 10, and 17; and "yes" to the other questions.) They are classified as food insecure if they report 3 or more food-insecure conditions (based on questions 1–10 for households without children and questions 1–18 for households with children). Households are classified as having food insecurity among children or food-insecure children if they report 2 or more food-insecure conditions among the children in response to questions 11–18.⁹

Food-insecure households are further classified as having either low food security or very low food security.¹⁰ The very low food security category identifies households in which the food intake of one or more members was reduced and eating patterns disrupted because of insufficient money and other resources for food (see box, "What Is 'Very Low Food Security?'" on page 7). Households without children are classified as having very low food security if they report 6 or more food-insecure conditions (based on questions 1–10). Households with children aged 0–17 are classified as having very low food security if they report 8 or more food-insecure conditions among adults and/or children (based on questions 1–18).¹¹ They are further classified as having very low food security among children if they report 5 or more food-insecure conditions among the children (that is, if they respond affirmatively to 5 or more of questions 11–18).

⁷ An official Spanish translation of the food security questions is used in the survey and available on the USDA, ERS website. USDA, ERS assessed the effect of interview language on Hispanics versus non-Hispanics and found no differences in the statistical properties of the food security measure (Rabbitt and Coleman-Jensen, 2017).

⁸ Analyses have been conducted to examine possible measurement error in the food security module. Findings show that overall model-data fit is quite good and most households have expected response patterns and strong model fit. For a small number of households, unexpected response patterns result in poor model fit that may reflect misreporting (Engelhard et al., 2018). A related potential source of error is the underreporting of items. Analyses have found evidence of underreporting of more severe food-insecure conditions but no evidence of overreporting of food-insecure conditions (Gregory, 2020).

⁹ Both qualitative and quantitative research studies suggested that parents' reports of their children's food insecurity sometimes differed from adolescents' self-reported food insecurity and that parents were sometimes unaware of the degree to which children reduced their own food intake because of household food insecurity (Fram et al., 2011; Nord and Hanson, 2012). The extent to which underreporting of children's food insecurity may exist is unknown (see pp. 9–10 in Coleman-Jensen et al. (2013) for a discussion of research on parent-reported and self-reported food insecurity among children). A comprehensive review of diet quality and food security found evidence that adults shield children from food insecurity (Hanson and Connor, 2014).

¹⁰ Before 2006, households with low food security were described as "food insecure without hunger," and households with very low food security were described as "food insecure with hunger." Changes in these descriptions were made in 2006 at the recommendation of the Committee on National Statistics (National Research Council, 2006) to distinguish the physiological state of hunger from indicators of food availability. The criteria by which households were classified remained unchanged.

¹¹ Implications of differences in raw score thresholds for very low food security between households with and without children are discussed in Nord and Coleman-Jensen (2014), Coleman-Jensen et al. (2017), and Rabbitt et al. (2021).

Questions Used To Assess the Food Security of Households in the CPS Food Security Supplement

1. “We worried whether our food would run out before we got money to buy more.” Was that often, sometimes, or never true for you in the last 12 months?
2. The food that we bought just didn’t last, and we didn’t have money to get more.” Was that often, sometimes, or never true for you in the last 12 months?
3. “We couldn’t afford to eat balanced meals.” Was that often, sometimes, or never true for you in the last 12 months?
4. In the last 12 months, did you or other adults in the household ever cut the size of your meals or skip meals because there wasn’t enough money for food? (Yes/No)
5. (If yes to question 4) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
6. In the last 12 months, did you ever eat less than you felt you should because there wasn’t enough money for food? (Yes/No)
7. In the last 12 months, were you ever hungry, but didn’t eat, because there wasn’t enough money for food? (Yes/No)
8. In the last 12 months, did you lose weight because there wasn’t enough money for food? (Yes/No)
9. In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)
10. (If yes to question 9) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?

(Questions 11–18 were asked only if the household included children aged 0–17)

11. “We relied on only a few kinds of low-cost food to feed our children because we were running out of money to buy food.” Was that often, sometimes, or never true for you in the last 12 months?
12. “We couldn’t feed our children a balanced meal, because we couldn’t afford that.” Was that often, sometimes, or never true for you in the last 12 months?
13. “The children were not eating enough because we just couldn’t afford enough food.” Was that often, sometimes, or never true for you in the last 12 months?
14. In the last 12 months, did you ever cut the size of any of the children’s meals because there wasn’t enough money for food? (Yes/No)
15. In the last 12 months, were the children ever hungry but you just couldn’t afford more food? (Yes/No)
16. In the last 12 months, did any of the children ever skip a meal because there wasn’t enough money for food? (Yes/No)
17. (If yes to question 16) How often did this happen—almost every month, some months but not every month, or in only 1 or 2 months?
18. In the last 12 months, did any of the children ever not eat for a whole day because there wasn’t enough money for food? (Yes/No)

Coding of Responses

Questions 1–3 and 11–13 are coded as affirmative (i.e., possibly indicating food insecurity) if the response is “often” or “sometimes.” Questions 5, 10, and 17 are coded as affirmative if the response is “almost every month” or “some months but not every month.” The remaining questions are coded as affirmative if the response is “yes.”

Assessing Food Security Status in Households Without Children

Households without children are classified as food insecure if they report 3 or more indications of food insecurity in response to the first 10 questions; they are classified as having very low food security if they report 6 or more food-insecure conditions out of the first 10 questions.

Assessing Food Security Status in Households with Children Aged 0–17

Households with children are classified as food insecure if they report 3 or more indications of food insecurity in response to the entire set of 18 questions; they are classified as having very low food security if they report 8 or more food-insecure conditions in response to the entire set of 18 questions.

The food security status of children in the household is assessed by responses to the child-referenced questions (11–18). Households reporting two or more of these conditions are classified as having food insecurity among children. Households reporting five or more are classified as having very low food security among children.

Low and very low food security differ in the extent and character of the adjustments the household makes to its eating patterns and food intake. Households classified as having low food security reported multiple indications of food acquisition problems and reduced diet quality but typically reported fewer, if any, indications of reduced food intake. Those classified as having very low food security reported multiple indications of reduced food intake and disrupted eating patterns because of inadequate resources for food. In most households with very low food security, the survey respondent responded “yes” that they were hungry at some time during the year but did not eat because there was not enough money for food.

To reduce the survey burden on higher income respondents, households with incomes above 185 percent of the Federal poverty line that do not indicate food-access or food-acquisition problems on either of the two preliminary screening questions are deemed to be food secure and are not asked the questions in the food security assessment series. The preliminary screening questions asked of all households are as follows:

“People do different things when they are running out of money for food in order to make their food or their food money go further. In the last 12 months, since December of last year, did you ever run short of money and try to make your food or your food money go further?”

In 2021, 17.5 percent of households responded “yes,” and 82.5 percent responded “no.” A response of “no” is indicative of no food-access problems.

The lead-in to the second screener question specifies:

“The next questions are about the food eaten in your household in the last 12 months, since December of last year, and whether you were able to afford the food you need.”

The question reads:

“Which of these statements best describes the food eaten in your household—enough of the kinds of food we want to eat, enough but not always the kinds of food we want to eat, sometimes not enough to eat, or often not enough to eat?”

In 2021, 81.2 percent of respondents responded “enough of the kinds of food we want to eat,” 15.5 percent said “enough but not always the kinds of food we want to eat,” 2.6 percent indicated “sometimes not enough to eat,” and 0.7 percent reported “often not enough to eat.” A response of only “enough of the kinds of food we want to eat” is indicative of no food-access problems.

What Is “Very Low Food Security”?

Very low food security can be characterized in terms of the conditions that households in this category reported in the food security survey. Households without children classified as having very low food security reported six or more food-insecure conditions and households with children reported eight or more food-insecure conditions, including conditions among both adults and children. Thus, the conditions reported by respondents reflect the definition of “very low food security.” At times during the year, the food intake of household members was reduced and their normal eating patterns were disrupted because the household lacked money and other resources for food. In the 2021 survey, households classified as having very low food security (representing an estimated 5.1 million households nationwide) reported the following specific conditions:

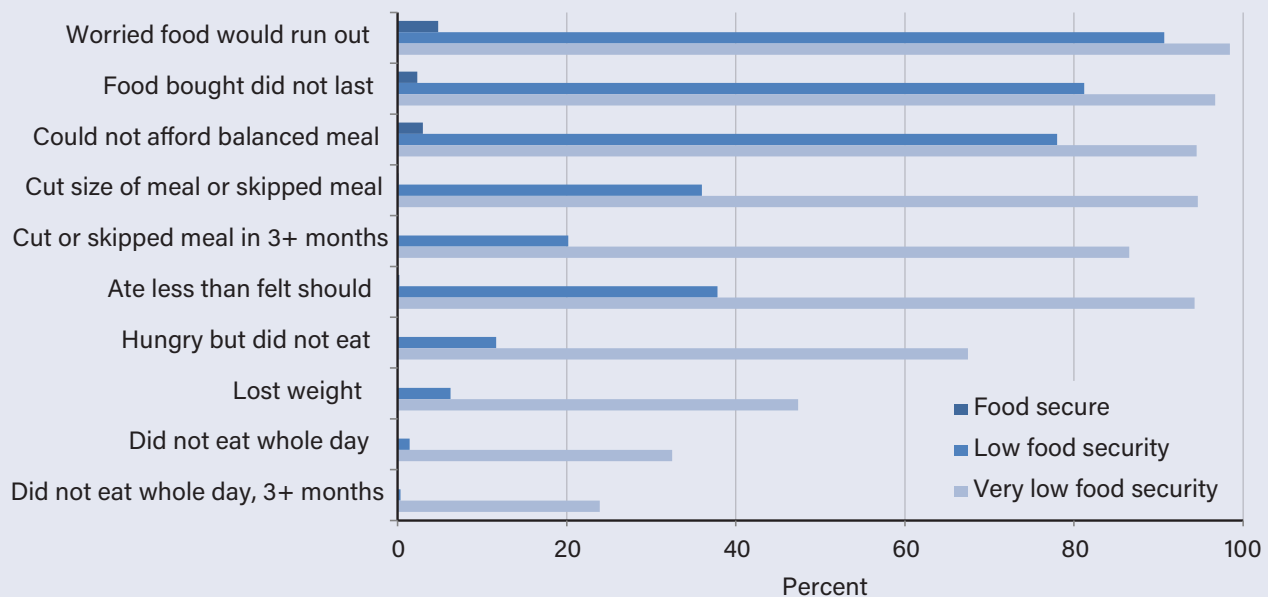
- 98 percent reported having worried that their food would run out before they got money to buy more.
- 97 percent reported that the food they bought just did not last, and they did not have money to get more.
- 94 percent reported that they could not afford to eat balanced meals.
- 95 percent reported that an adult had cut the size

of meals or skipped meals because there was not enough money for food; 87 percent reported that this had occurred in 3 or more months.

- 94 percent reported that they had eaten less than they felt they should because there was not enough money for food.
- 67 percent reported that they had been hungry but did not eat because they could not afford enough food.
- 47 percent reported having lost weight because they did not have enough money for food.
- 32 percent reported that an adult did not eat for a whole day because there was not enough money for food; 24 percent reported that this had occurred in 3 or more months.

All households without children classified as having very low food security reported at least six of these conditions. Most households with very low food security, 69 percent, reported seven or more food-insecure conditions. (Conditions reported by households with children were like those without children, but the reported food-insecure conditions of both adults and children were considered.)

Percentage of households reporting each indicator of food insecurity, by food security status, 2021



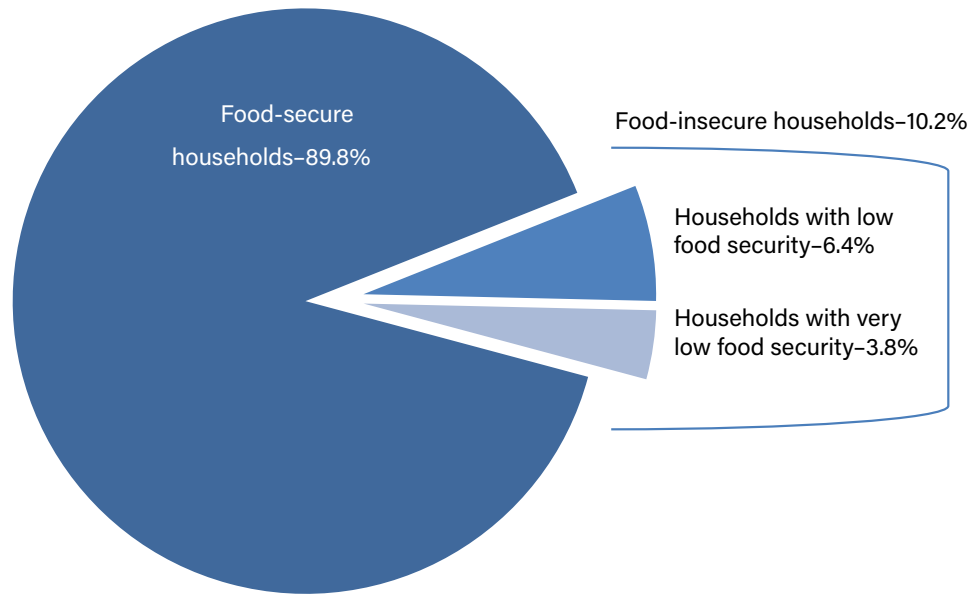
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

Prevalence of Food Insecurity—National Conditions and Trends

An estimated 89.8 percent of U.S. households were food secure throughout the entire year in 2021 (figure 1, table 1A). In concept, “food secure” means that all household members had access at all times to enough food for an active, healthy life (Anderson, 1990). Food security statistics, as operationally measured for this report using survey data, are based on household responses to items about whether the household was able to obtain enough food to meet its needs. This operational measure does not specifically address whether the household members’ food intake was sufficient for active, healthy lives—the conceptual definition of food security. Nonetheless, research based on other data collections found survey-based measures of food security to be statistically associated with various outcomes involving health, nutrition, and children’s development in a manner that generally supports the link between the report’s survey-based measure of food security and the conceptual definition of food security (see Coleman-Jensen et al., 2013; Gregory and Coleman-Jensen, 2017; Nord, 2009a; Nord and Hopwood, 2007; Nord and Kantor, 2006).

The remaining 10.2 percent of U.S. households (13.5 million households) were food insecure at some time during the year in 2021. Food insecurity means that households were, at times, unable to acquire adequate food for one or more household members because they had insufficient money and other resources for food. Most food-insecure households—those classified as having low food security (but not very low food security)—avoided substantial reductions or disruptions in food intake, in some cases by relying on a few basic foods and reducing variety in their diets. In 2021, 6.4 percent of U.S. households (8.4 million households) had low food security and 3.8 percent (5.1 million households) had very low food security. Very low food security means that households were food insecure to the extent that eating patterns of one or more household members were disrupted and their food intake reduced, at least some time during the year, because they could not afford enough food. Research confirms that food insecurity affects both dietary quality and dietary quantity. Low-income food-insecure households spent less on food, purchased fewer calories overall, and had lower quality food purchases than low-income food-secure households, according to the USDA’s National Food Acquisition and Purchase Survey data (Gregory et al., 2019). Consumption research also shows that food insecurity is associated with poorer quality diets among low-income adults even when differences in income and other sociodemographic characteristics are accounted for (Leung et al., 2014; Leung and Tester, 2019). Research has also confirmed that skipping meals is associated with food insecurity as adults in food-insecure households consume fewer meals than adults in food-secure households (Zizza et al., 2008).

Figure 1
U.S. households by food security status, 2021

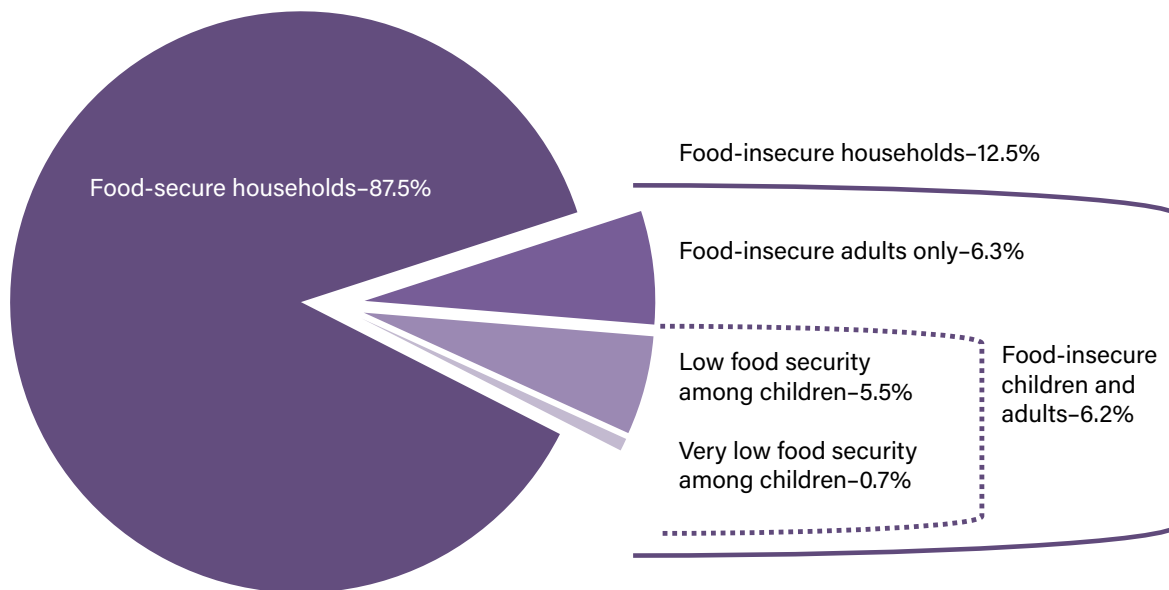


Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

Among U.S. households with children under age 18, 87.5 percent were food secure in 2021. The remaining 12.5 percent of households with children (4.6 million households) were food insecure at some time in 2021 (figure 2, table 1B). Parents and caregivers often can maintain normal or near-normal diets and meal patterns for their children, even when the parents themselves are food insecure. In about half of food-insecure households with children in 2021, only adults were food insecure (6.3 percent of households with children). However, both children and adults were food insecure in 6.2 percent of households with children (2.3 million households) in 2021. In 0.7 percent of households with children (274,000 households), food insecurity among children was so severe that caregivers reported that children were hungry, skipped a meal, or did not eat for a whole day because there was not enough money for food. These households are described as having very low food security among children. Sometimes older children in such households suffer the more severe effects of food insecurity, while caregivers and other family members seek to protect younger children from those effects (Coleman-Jensen et al., 2013; Nord, 2009a).

Figure 2

U.S. households with children by food security status of adults and children, 2021



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

The food security survey is designed to measure food security status at the household level. While it is informative to examine the number of persons living in food-insecure households, these statistics should be interpreted carefully. Within a food-insecure household, each household member may be affected differently by the household’s food insecurity. Some members—particularly young children—may experience only mild or no effects, while adults are more severely affected. It is more precise to describe these statistics as representing “persons living in food-insecure households” rather than as representing “food-insecure persons.” Similarly, “persons living in households with very low food security” is a more precise description than “persons with very low food security.”

In 2021, 33.8 million people lived in food-insecure households (table 1A, middle panel). They constituted 10.4 percent of the U.S. civilian noninstitutionalized population and included 24.6 million adults (table 1A, bottom panel) and 9.3 million children (table 1B, bottom panel). About 5.0 million children (6.8 percent of children) lived in households where at least one child was food insecure. About 8.6 million adults (3.4 percent of adults) lived in households with very low food security (table 1A, bottom panel), and 521,000 children (0.7 percent of children) lived in households with very low food security among children (table 1B, bottom panel).

Table 1A

Households and individuals by food security status of household, 1998–2021

Category and year	Total ¹ 1,000	Food insecure							
		Food secure		All		With low food security		With very low food security	
		1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
Households									
2021	132,043	118,533	89.8	13,510	10.2	8,428	6.4	5,082	3.8
2020	130,459	116,705	89.5	13,754	10.5	8,613	6.6	5,141	3.9
2019	129,621	115,959	89.5	13,662	10.5	8,340	6.4	5,322	4.1
2018	129,245	114,934	88.9	14,311	11.1	8,730	6.8	5,581	4.3
2017	127,272	112,254	88.2	15,018	11.8	9,261	7.3	5,757	4.5
2016	126,401	110,850	87.7	15,551	12.3	9,413	7.4	6,138	4.9
2015	125,164	109,315	87.3	15,849	12.7	9,540	7.7	6,309	5.0
2014	124,044	106,618	86.0	17,426	14.0	10,488	8.4	6,938	5.6
2013	122,579	105,070	85.7	17,509	14.3	10,664	8.7	6,845	5.6
2012	121,546	103,914	85.5	17,632	14.5	10,679	8.8	6,953	5.7
2011	119,484	101,631	85.1	17,853	14.9	11,014	9.2	6,839	5.7
2010	118,756	101,527	85.5	17,229	14.5	10,872	9.1	6,357	5.4
2009	118,174	100,820	85.3	17,354	14.7	10,601	9.0	6,753	5.7
2008	117,565	100,416	85.4	17,149	14.6	10,426	8.9	6,723	5.7
2007	117,100	104,089	88.9	13,011	11.1	8,262	7.0	4,749	4.1
2006	115,609	102,961	89.1	12,648	10.9	8,031	6.9	4,617	4.0
2005	114,437	101,851	89.0	12,586	11.0	8,158	7.1	4,428	3.9
2004	112,967	99,473	88.1	13,494	11.9	9,045	8.0	4,449	3.9
2003	112,214	99,631	88.8	12,583	11.2	8,663	7.7	3,920	3.5
2002	108,601	96,543	88.9	12,058	11.1	8,259	7.6	3,799	3.5
2001	107,824	96,303	89.3	11,521	10.7	8,010	7.4	3,511	3.3
2000	106,043	94,942	89.5	11,101	10.5	7,786	7.3	3,315	3.1
1999	104,684	94,154	89.9	10,529	10.1	7,420	7.1	3,109	3.0
1998	103,309	91,121	88.2	12,188	11.8	8,353	8.1	3,835	3.7
All individuals (by food security status of household)²									
2021	325,508	291,664	89.6	33,844	10.4	22,726	7.0	11,118	3.4
2020	324,790	286,503	88.2	38,287	11.8	25,874	8.0	12,413	3.8
2019	324,235	289,028	89.1	35,207	10.9	23,362	7.2	11,845	3.7
2018	323,005	285,778	88.5	37,227	11.5	24,577	7.6	12,650	3.9
2017	320,418	280,374	87.5	40,044	12.5	27,159	8.5	12,885	4.0
2016	319,029	277,825	87.1	41,204	12.9	26,556	8.3	14,648	4.6
2015	316,161	273,923	86.6	42,238	13.4	27,605	8.7	14,633	4.6
2014	313,305	265,170	84.6	48,135	15.4	30,922	9.9	17,213	5.5
2013	310,853	261,775	84.2	49,078	15.8	31,974	10.3	17,104	5.5
2012	308,361	259,395	84.1	48,966	15.9	31,787	10.3	17,179	5.6
2011	305,893	255,773	83.6	50,120	16.4	33,232	10.9	16,888	5.5
2010	304,034	255,202	83.9	48,832	16.1	32,777	10.8	16,055	5.3
2009	301,750	251,588	83.4	50,162	16.6	32,499	10.8	17,663	5.9
2008	299,567	250,459	83.6	49,108	16.4	31,824	10.6	17,284	5.8
2007	297,042	260,813	87.8	36,229	12.2	24,287	8.2	11,942	4.0
2006	294,010	258,495	87.9	35,515	12.1	24,395	8.3	11,120	3.8
2005	291,501	256,373	87.9	35,128	12.1	24,349	8.4	10,779	3.7
2004	288,603	250,407	86.8	38,196	13.2	27,535	9.5	10,661	3.7
2003	286,410	250,155	87.3	36,255	12.7	26,622	9.3	9,633	3.4
2002	279,035	244,133	87.5	34,902	12.5	25,517	9.1	9,385	3.4
2001	276,661	243,019	87.8	33,642	12.2	24,628	8.9	9,014	3.3
2000	273,685	240,454	87.9	33,231	12.1	24,708	9.0	8,523	3.1
1999	270,318	239,304	88.5	31,015	11.5	23,237	8.6	7,779	2.9
1998	268,366	232,219	86.5	36,147	13.5	26,290	9.8	9,857	3.7

Table 1A Continued on page 11

Table 1A

Households and individuals by food security status of household, 1998–2021
Continued from page 12

Category and year	Total ¹	Food secure		Food insecure					
				All		With low food security		With very low food security	
				1,000	Percent	1,000	Percent	1,000	Percent
Adults (by food security status of household) ²									
2021	253,092	228,510	90.3	24,582	9.7	16,007	6.3	8,575	3.4
2020	251,953	225,388	89.5	26,565	10.5	17,174	6.8	9,391	3.7
2019	250,956	226,481	90.2	24,475	9.8	15,495	6.2	8,980	3.6
2018	249,443	223,390	89.6	26,053	10.4	16,576	6.6	9,477	3.8
2017	246,517	219,013	88.8	27,504	11.2	17,796	7.2	9,708	3.9
2016	245,200	216,934	88.5	28,266	11.5	17,498	7.1	10,768	4.4
2015	242,706	213,586	88.0	29,120	12.0	18,235	7.5	10,885	4.5
2014	239,937	207,125	86.3	32,812	13.7	20,425	8.5	12,387	5.2
2013	237,219	203,913	86.0	33,306	14.0	21,115	8.9	12,191	5.1
2012	234,730	201,662	85.9	33,068	14.1	20,708	8.8	12,359	5.3
2011	231,385	197,923	85.5	33,462	14.5	21,371	9.2	12,091	5.2
2010	229,129	196,505	85.8	32,624	14.2	21,357	9.3	11,267	4.9
2009	227,543	194,579	85.5	32,964	14.5	20,741	9.1	12,223	5.4
2008	225,461	193,026	85.6	32,435	14.4	20,320	9.0	12,115	5.4
2007	223,467	199,672	89.4	23,795	10.6	15,602	7.0	8,193	3.7
2006	220,423	197,536	89.6	22,887	10.4	15,193	6.9	7,694	3.5
2005	217,897	195,172	89.6	22,725	10.4	15,146	7.0	7,579	3.5
2004	215,564	191,236	88.7	24,328	11.3	16,946	7.9	7,382	3.4
2003	213,441	190,451	89.2	22,990	10.8	16,358	7.7	6,632	3.1
2002	206,493	184,718	89.5	21,775	10.5	15,486	7.5	6,289	3.0
2001	204,340	183,398	89.8	20,942	10.2	14,879	7.3	6,063	3.0
2000	201,922	181,586	89.9	20,336	10.1	14,763	7.3	5,573	2.8
1999	198,900	179,960	90.5	18,941	9.5	13,869	7.0	5,072	2.5
1998	197,084	174,964	88.8	22,120	11.2	15,632	7.9	6,488	3.3

¹Totals exclude households for which food security status is unknown because household respondents did not give a valid response to any of the questions in the food security scale. In 2021, these exclusions represented 204,000 households (0.2 percent of all households).

²The food security survey measures food security status at the household level. Not all individuals residing in food-insecure households were directly affected by the households' food insecurity. Similarly, not all individuals in households classified as having very low food security were subject to the reductions in food intake and disruptions in eating patterns that characterize this condition. Young children are often protected from effects of the households' food insecurity.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplements.

Table 1B

Households with children by food security status and children by food security status of household, 1998–2021

Category and year	Total ¹ 1,000	Food-secure households		Food-insecure households ²		Households with food-insecure children ³		Households with very low food security among children	
		1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
Households with children									
2021	36,765	32,170	87.5	4,595	12.5	2,290	6.2	274	0.7
2020	37,903	32,280	85.2	5,623	14.8	2,870	7.6	322	0.8
2019	37,614	32,480	86.4	5,134	13.6	2,434	6.5	213	0.6
2018	37,612	32,369	86.1	5,243	13.9	2,658	7.1	220	0.6
2017	37,942	31,975	84.3	5,967	15.7	2,926	7.7	250	0.7
2016	38,400	32,058	83.5	6,342	16.5	3,069	8.0	298	0.8
2015	38,978	32,519	83.4	6,459	16.6	3,022	7.8	274	0.7
2014	39,079	31,590	80.8	7,489	19.2	3,665	9.4	422	1.1
2013	38,486	30,978	80.5	7,508	19.5	3,814	9.9	360	0.9
2012	39,201	31,354	80.0	7,847	20.0	3,910	10.0	463	1.2
2011	38,803	30,814	79.4	7,989	20.6	3,862	10.0	374	1.0
2010	39,419	31,447	79.8	7,972	20.2	3,861	9.8	386	1.0
2009	39,525	31,114	78.7	8,411	21.3	4,208	10.6	469	1.2
2008	39,699	31,364	79.0	8,335	21.0	4,361	11.0	506	1.3
2007	39,390	33,160	84.2	6,230	15.8	3,273	8.3	323	0.8
2006	39,436	33,279	84.4	6,157	15.6	3,312	8.4	221	0.6
2005	39,601	33,404	84.4	6,197	15.6	3,244	8.2	270	0.7
2004	39,990	32,967	82.4	7,023	17.6	3,808	9.5	274	0.7
2003	40,286	33,575	83.3	6,711	16.7	3,606	9.0	207	0.5
2002	38,647	32,267	83.5	6,380	16.5	3,456	8.9	265	0.7
2001	38,330	32,141	83.9	6,189	16.1	3,225	8.4	211	0.6
2000	38,113	31,942	83.8	6,171	16.2	3,282	8.6	255	0.7
1999	37,884	32,290	85.2	5,594	14.8	3,089	8.2	219	0.6
1998	38,036	31,335	82.4	6,701	17.6	3,627	9.5	331	0.9
Children (by food security status of household)⁴									
2021	72,416	63,154	87.2	9,262	12.8	4,959	6.8	521	0.7
2020	72,837	61,115	83.9	11,722	16.1	6,142	8.4	584	0.8
2019	73,279	62,547	85.4	10,732	14.6	5,332	7.3	361	0.5
2018	73,562	62,388	84.8	11,174	15.2	5,999	8.2	540	0.7
2017	73,901	61,361	83.0	12,540	17.0	6,541	8.9	540	0.7
2016	73,829	60,891	82.5	12,938	17.5	6,519	8.8	703	1.0
2015	73,455	60,337	82.1	13,118	17.9	6,377	8.7	541	0.7
2014	73,368	58,045	79.1	15,323	20.9	7,949	10.8	914	1.2
2013	73,634	57,862	78.6	15,772	21.4	8,585	11.7	765	1.0
2012	73,631	57,733	78.4	15,898	21.6	8,290	11.3	977	1.3
2011	74,508	57,850	77.6	16,658	22.4	8,565	11.5	845	1.1
2010	74,905	58,697	78.4	16,208	21.6	8,458	11.3	976	1.3
2009	74,207	57,010	76.8	17,197	23.2	8,957	12.1	988	1.3
2008	74,106	57,433	77.5	16,673	22.5	9,098	12.3	1,077	1.5
2007	73,575	61,140	83.1	12,435	16.9	6,766	9.2	691	0.9
2006	73,587	60,959	82.8	12,628	17.2	7,065	9.6	430	0.6
2005	73,604	61,201	83.1	12,403	16.9	6,718	9.1	606	0.8
2004	73,039	59,171	81.0	13,868	19.0	7,823	10.7	545	0.7
2003	72,969	59,704	81.8	13,265	18.2	7,388	10.1	420	0.6
2002	72,542	59,415	81.9	13,127	18.1	7,397	10.2	567	0.8
2001	72,321	59,620	82.4	12,701	17.6	6,866	9.5	467	0.6
2000	71,763	58,867	82.0	12,896	18.0	7,018	9.8	562	0.8
1999	71,418	59,344	83.1	12,074	16.9	6,996	9.8	511	0.7
1998	71,282	57,255	80.3	14,027	19.7	7,840	11.0	716	1.0

¹ Totals exclude households for which food security status is unknown because the households did not give a valid response to any of the questions in the food security scale. In 2021, these exclusions represented 27,000 households with children (0.1 percent of all households with children). Children are defined as ages 0–17.

² Food-insecure households are those with low or very low food security among adults or children or both.

³ In some food-insecure households with children, only adults were food insecure. Households with food-insecure children are those with low or very low food security among children.

⁴ The food security survey measures food security status at the household level. Not all children residing in food-insecure households were directly affected by the households' food insecurity. Similarly, not all children in households classified as having very low food security among children were subject to the reductions in food intake and disruptions in eating patterns that characterize this condition. Young children are often protected from effects of the households' food insecurity.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplements.

Statistical Supplement tables S-2 and S-3 present estimates of the number of people and the number of children in households in each food security status and household type (Coleman-Jensen et al., 2022).

When interpreting food security statistics in this report, readers should remember that households were classified as having low or very low food security based on their experiencing the conditions indicated in the survey questions at any time during the previous 12 months. The prevalence of these conditions on any given day is far below the corresponding annual prevalence. For example, the prevalence of very low food security during the 30 days before the December 2021 survey is 2.2 percent (table S-4 in Coleman-Jensen et al., 2022). Most households that reported experiencing food-insecure conditions during the previous 30 days reported experiencing the conditions between 1 to 7 days during the month (see table S-9 in Coleman-Jensen et al., 2022; and box, “When Food Insecurity Occurs in U.S. Households, It Is Usually Recurrent But Not Constant” on page 14).¹²

¹² The USDA, Economic Research Service no longer provides an estimated average daily prevalence of very low food security because of a change in Census processing of continuous variables. Beginning with the 2019 CPS FSS data, all continuous variables for the number of days out of the previous 30 days that food-insecure conditions occurred are only released after being categorized into ranges of number of days to reduce the risk of disclosure related to a small number of households reporting a single value. Those categorical variables result in less precise estimates of the average daily prevalence of food insecurity. See table S-9 in the online Statistical Supplement for the percent of households reporting each of the food-insecure conditions in increments of 1 to 7 days, 8 to 14 days, and 15 to 30 days (Coleman-Jensen et al., 2022).

When Food Insecurity Occurs in U.S. Households, It Is Usually Recurrent but Not Constant

When households experience very low food security in the United States, the resulting instances of reduced food intake and disrupted eating patterns are usually occasional or episodic but not usually constant. The food security measurement methods used in this report are designed to register these occasional or episodic occurrences. The questions used to assess households' food security status ask whether a condition, experience, or behavior occurred at any time in the past 12 months, and households can be classified as having very low food security based on a single, severe episode during the year. Readers should remember this when interpreting food insecurity statistics. Analyses of additional information collected in the food security survey on how frequently various food-insecure conditions occurred during the year, whether they occurred during the 30 days prior to the survey (conducted December 12–21, 2021), and, if so, in how many days, provide insight into the frequency and duration of food insecurity in U.S. households. These analyses reveal that in 2021:

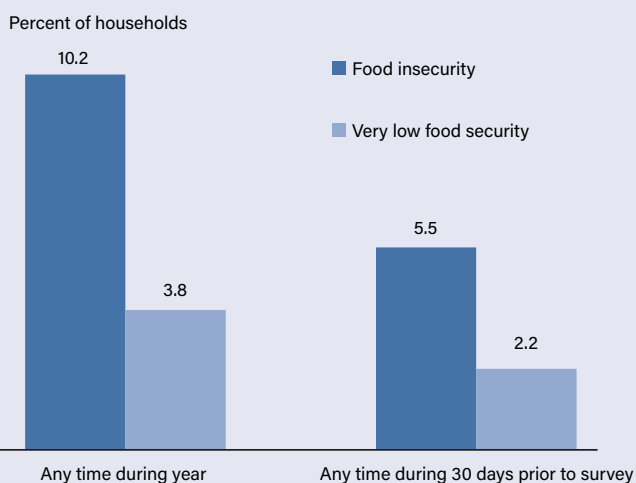
- About one-fourth of U.S. households with very low food security at any time during the year experienced the associated conditions rarely or occasionally—in only 1 or 2 months of the year. About three-fourths of respondent households experienced the conditions recurrently in 3 or more months of the year.
- About one-fourth of food-insecure households and one-third of those with very low food security experienced the associated conditions frequently or chronically. That is, the conditions occurred often or almost every month.
- On average, households that were food insecure at some time during the year were food insecure in 7 months during the year. During the 30-day period ending in mid-December 2021, 7.2 million households (5.5 percent of all households) were food insecure—about 53 percent of the number that were food insecure at any time during the year (see Statistical Supplement table S-4, Coleman-Jensen et al., 2022).
- Similarly, households with very low food security at some time during the year experienced the associated conditions, on average, in 7 months during the year. During the 30-day period ending

in mid-December 2021, 2.9 million households (2.2 percent of all households) had very low food security—about 57 percent of the number with very low food security at some time during the year (see Statistical Supplement table S-4).

- Most households that had very low food security at some time during a month experienced the associated conditions in 1 to 7 days of the month.
- The omission of homeless families and individuals from these frequency statistics biases the statistics downward, and the bias may be substantial relative to the estimates, especially for the most severe conditions.

Statistical Supplement tables S-7 to S-9 (Coleman-Jensen et al., 2022) provide information on how often conditions indicating food insecurity occurred, as reported by respondents to the December 2021 Food Security Supplement. See Nord et al. (2000) for more information about the frequency of food insecurity. See Ryu and Bartfeld (2012) and Wilde et al. (2010) for more information about longer term patterns of food insecurity.

Prevalence of food insecurity and very low food security, by reference period (2021)

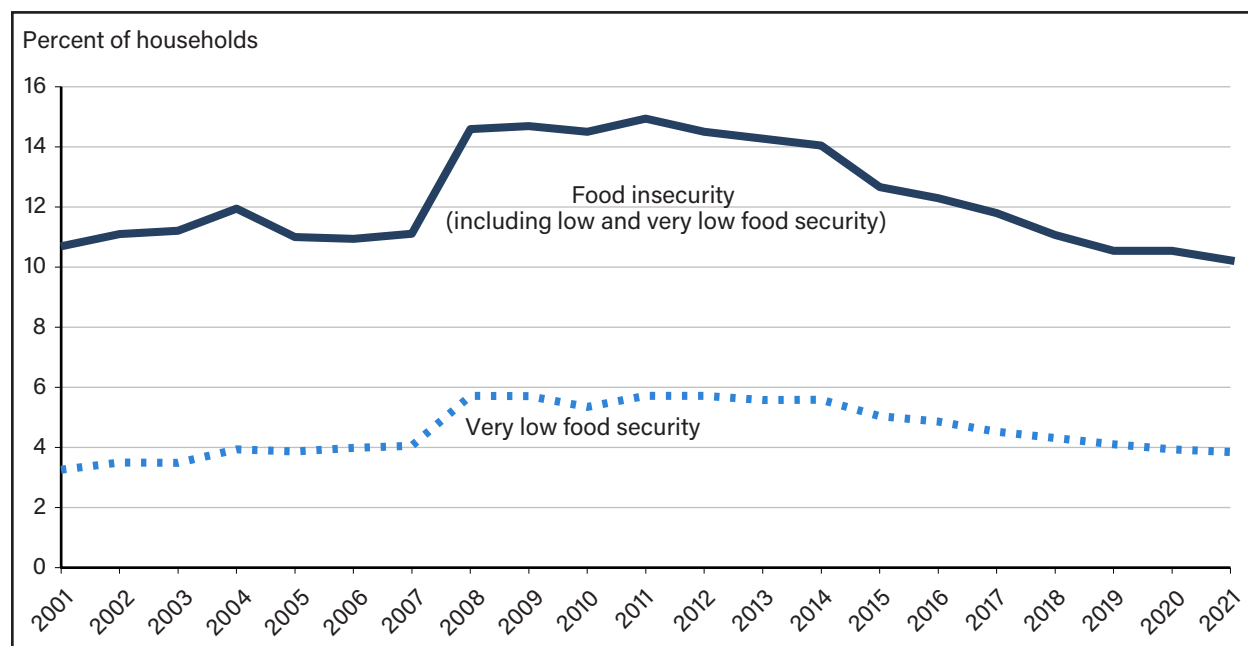


Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

The prevalence of food insecurity in 2021 (10.2 percent) was not significantly different from the 2020 and 2019 prevalence of 10.5 percent (figure 3, table 1A). Regarding earlier trends, a statistically significant decline in the prevalence of food insecurity from 11.1 percent in 2018 to 10.5 percent occurred in 2019 (figure 3, table 1A). For the first time, in 2019, food insecurity was statistically significantly below the 11.1 percent pre-recession level of 2007. Year-to-year declines in food insecurity from 2014–15, 2016–17, and 2017–18 were also statistically significant. Some year-to-year changes were not statistically significant; that is, there was no real change or the changes were within the range that could occur from sampling variation. The cumulative decline from 2011 (14.9 percent) to 2014 (14.0 percent) was statistically significant. In the previous decade, food insecurity increased from 10.7 percent in 2001 to 11.9 percent in 2004, declined to about 11 percent in 2005–07, then increased significantly in 2008 (to 14.6 percent), and remained essentially unchanged (that is, the difference was not statistically significant) at that level in 2009 and 2010.

Figure 3

Trends in the prevalence of food insecurity and very low food security in U.S. households, 2001–21

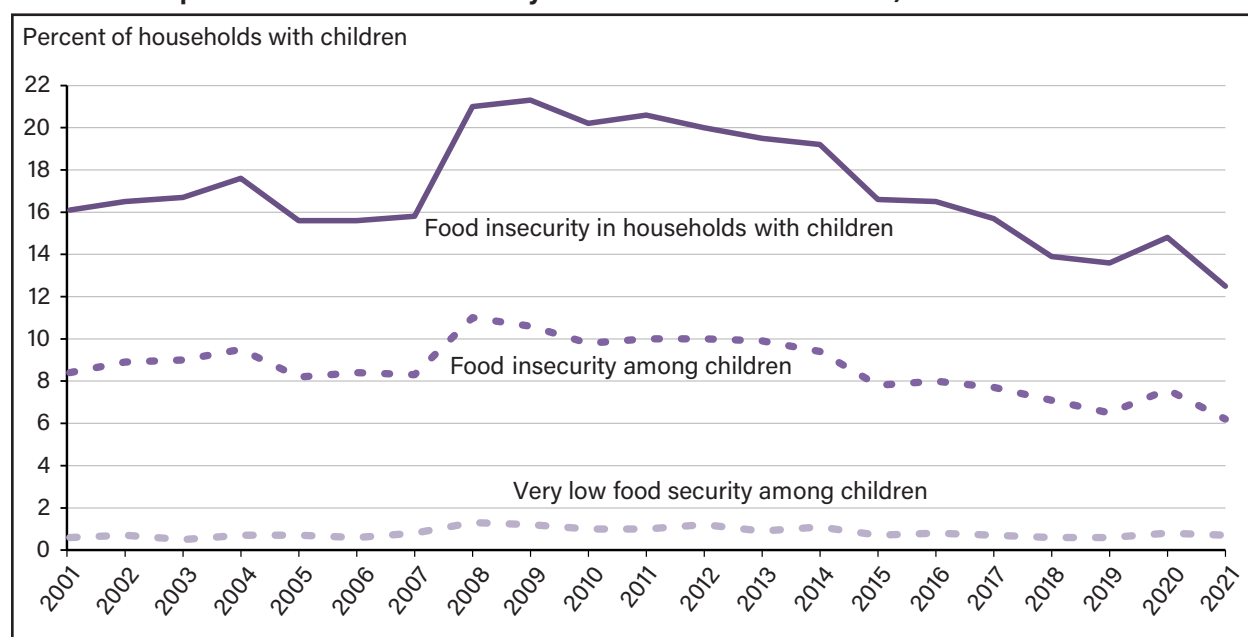


Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplements.

The prevalence of very low food security in 2021 (3.8 percent) was not significantly different from the prevalence in 2020 (3.9 percent) or 2019 (4.1 percent; table 1A). The prevalence of very low food security in 2021 was significantly lower than the prevalence in 2018 (4.3 percent). Statistically significant year-to-year declines in very low food security occurred from 2014–15 and 2016–17. The prevalence of very low food security was essentially unchanged from 2011 (5.7 percent) through 2014. The prevalence of very low food security was also 5.7 percent in 2008 and 2009. Before 2008, the prevalence of very low food security increased from 3.3 percent in 2001 to 3.9 percent in 2004 and remained essentially unchanged through 2007 (4.1 percent).

The prevalence of food insecurity in households with children was lower in 2021 (12.5 percent) than in 2020 (14.8 percent), a difference that is statistically significant (figure 4, table 1B). The 2021 prevalence of food insecurity in households with children was also significantly lower than the 2019 prevalence of 13.6 percent. The percentage of households with food insecurity among children in 2021 (6.2 percent) was down significantly from the 2020 prevalence (7.6 percent) but was not significantly different from the 2019 prevalence (6.5 percent). The prevalence of food insecurity among children in 2021 was significantly lower than the prevalence in 2018 (7.1 percent). The percentage of households with very low food security among children in 2021 (0.7 percent) was not significantly different from the prevalence from 2015–20 but down significantly from the 2014 prevalence (1.1 percent).

Figure 4

Trends in the prevalence of food insecurity in households with children, 2001–21

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplements.

Prevalence of Food Insecurity by Selected Household Characteristics

The prevalence of food insecurity varied considerably in 2021 among households with different demographic and economic characteristics (table 2). Differences in food security across demographic and geographic groups partly reflect differences in income across those groups; although no adjustment is made for income in the statistics presented in this report, food insecurity was strongly associated with income. For example, 32.1 percent of households with annual incomes below the official poverty line (household income-to-poverty ratio under 1.00) were food insecure, compared with just 5.0 percent of those with incomes at or above 185 percent of the poverty line.¹³ (Table S-1 in the Statistical Supplement (Coleman-Jensen et al., 2022) shows food insecurity by selected household characteristics for households with annual income below 130 percent of the poverty line.)

Rates of food insecurity were significantly below the national average of 10.2 percent for the following groups (all differences described in the bulleted sections below are statistically significant):

- Married couples with children (7.4 percent);¹⁴
- Households with no children (9.4 percent), especially those with more than one adult and no children (6.9 percent);
- Households with elderly persons (7.1 percent);¹⁵
- Households with White, non-Hispanic adult reference persons (the survey reference person is an adult household member in whose name the housing unit is owned or rented; 7.0 percent);¹⁶ and
- Households with incomes at or above 185 percent of poverty (5.0 percent).

¹³ The Federal poverty line was \$27,479 for a family of four (two adults and two children) in 2021.

¹⁴ Beginning with the 2020 Current Population Survey, same-sex partners are identified in the data. The married couple category includes same-sex married partners.

¹⁵ “Elderly” in this report refers to persons aged 65 and older.

¹⁶ The “householder” or “household reference person” refers to the person in whose name the housing unit sampled is owned or rented. If the house is owned or rented jointly by a married couple, the household reference person may be either spouse. Previously the household reference person was referred to as the household head.

Table 2

Households by food security status and selected household characteristics, 2021

Category	Total ¹ 1,000	Food secure		Food insecure					
		1,000	Percent	All		With low food security		With very low food security	
				1,000	Percent	1,000	Percent	1,000	Percent
All households	132,043	118,533	89.8	13,510	10.2	8,428	6.4	5,082	3.8
Household composition									
With children < 18 years	36,765	32,170	87.5	4,595	12.5	3,277	8.9	1,318	3.6
With children < 6 years	15,406	13,418	87.1	1,988	12.9	1,473	9.6	515	3.3
Married-couple families	23,849	22,088	92.6	1,761	7.4	1,344	5.7	417	1.7
Female head, no spouse	9,197	6,965	75.7	2,232	24.3	1,497	16.3	735	8.0
Male head, no spouse	3,194	2,678	83.8	516	16.2	374	11.8	142	4.4
Other household with child ²	524	438	83.6	86	16.4	NA	NA	NA	NA
With no children < 18 years	95,278	86,364	90.6	8,914	9.4	5,150	5.4	3,764	4.0
More than one adult	56,113	52,215	93.1	3,898	6.9	2,458	4.3	1,440	2.6
Women living alone	21,641	18,781	86.8	2,860	13.2	1,568	7.2	1,292	6.0
Men living alone	17,524	15,367	87.7	2,157	12.3	1,125	6.4	1,032	5.9
With elderly	42,501	39,473	92.9	3,028	7.1	1,858	4.3	1,170	2.8
Elderly living alone	16,056	14,530	90.5	1,526	9.5	798	5.0	728	4.5
Race/ethnicity of household reference persons									
White, non-Hispanic	85,866	79,843	93.0	6,023	7.0	3,754	4.4	2,269	2.6
Black, non-Hispanic	16,951	13,597	80.2	3,354	19.8	2,019	11.9	1,335	7.9
Hispanic ³	19,082	15,983	83.8	3,099	16.2	2,059	10.7	1,040	5.5
Other, non-Hispanic	10,144	9,112	89.8	1,032	10.2	595	5.9	437	4.3
Household income-to-poverty ratio									
Under 1.00	11,920	8,092	67.9	3,828	32.1	2,187	18.3	1,641	13.8
Under 1.30	16,994	11,722	69.0	5,272	31.0	3,127	18.4	2,145	12.6
Under 1.85	26,506	19,470	73.5	7,036	26.5	4,320	16.3	2,716	10.2
1.85 and over	71,721	68,135	95.0	3,586	5.0	2,328	3.2	1,258	1.8
Income unknown	33,816	30,929	91.5	2,887	8.5	1,779	5.2	1,108	3.3
Area of residence ⁴									
Inside metropolitan area	113,842	102,295	89.9	11,547	10.1	7,219	6.3	4,328	3.8
In principal cities ⁵	38,360	33,684	87.8	4,676	12.2	2,899	7.6	1,777	4.6
Not in principal cities	58,118	53,029	91.2	5,089	8.8	3,228	5.6	1,861	3.2
Outside metropolitan area	18,201	16,240	89.2	1,961	10.8	1,208	6.7	753	4.1
Census geographic region									
Northeast	22,516	20,525	91.2	1,991	8.8	1,263	5.6	728	3.2
Midwest	28,301	25,505	90.1	2,796	9.9	1,737	6.2	1,059	3.7
South	51,183	45,373	88.6	5,810	11.4	3,605	7.1	2,205	4.3
West	30,044	27,132	90.3	2,912	9.7	1,822	6.1	1,090	3.6

NA = Not reported; fewer than 10 households in the survey with this characteristic had very low food security.

¹ Totals exclude households for which food security status is unknown because household respondents did not give a valid response to any of the questions in the food security scale. In 2021, these exclusions represented 204,000 households (0.2 percent of all households).

² Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

³ Hispanics may be of any race.

⁴ Metropolitan area residence is based on 2013 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2014 and later but are not precisely comparable with those of earlier years.

⁵ Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 15 percent of households in metropolitan statistical areas.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

Rates of food insecurity in 2021 were significantly higher than the national average (10.2 percent) for the following groups:

- All households with children (12.5 percent);¹⁷
- Households with children under age 6 (12.9 percent);
- Households with children headed by a single female (i.e., single mothers, labeled “Female head, no spouse” in table; 24.3 percent) or a single male (i.e., single fathers, labeled “Male head, no spouse” in table; 16.2 percent);¹⁸
- Women living alone (13.2 percent) and men living alone (12.3 percent);
- Households with Black, non-Hispanic (19.8 percent) and Hispanic (16.2 percent) household reference persons;¹⁹ and
- Households with incomes below 185 percent of the poverty threshold (26.5 percent).

Food insecurity was significantly lower in metropolitan areas outside principal cities (suburbs; 8.8 percent) than in principal cities in metropolitan areas (urban; 12.2 percent) and nonmetropolitan areas (rural; 10.8 percent).²⁰ The prevalence of food insecurity in rural areas was significantly lower than in principal cities of urban areas. Compared with the national average, food insecurity was significantly higher in principal cities and significantly lower in suburban areas outside principal cities. Regionally, the prevalence of food insecurity in the Northeast (8.8 percent), Midwest (9.9 percent), and West (9.7) was significantly lower than the prevalence in the South (11.4 percent, table 2). Compared with the national average, food insecurity was significantly lower in the Northeast and significantly higher in the South.

Statistics in table 2 can also be used to calculate the share that each demographic group contributes to the population of food-insecure households. Among all food-insecure households in 2021, 34.0 percent were households with children, which included 16.5 percent that were female-headed households with children (labeled “Female head, no spouse” in table 2) and 13.0 percent that were married-couple households with

¹⁷ About 41 percent of the difference in food insecurity between households with and without children results from a difference in the measures applied to the two types of households. Responses to questions about children and adults are considered in assessing the food security status of households with children. However, for both types of households, a total of three indications of food insecurity is required for classification as food insecure. In 2021, even with the child-referenced questions omitted from the scale, 10.7 percent of households with children would be classified as food insecure (that is, as having food insecurity among adults), compared with 9.4 percent for households without children. Comparisons of very low food security are not biased substantially by this measurement issue because a higher threshold is applied to households with children, consistent with the larger number of questions taken into consideration (Nord and Coleman-Jensen, 2014). See Coleman-Jensen et al. (2017) for a discussion of a comparable classification method for households with and without children.

¹⁸ Some households with children headed by a single woman or a single man as classified for these analyses included other adults, who may have been parents, siblings, cohabiting partners, adult children, other relatives of the reference person, or unrelated roomers or boarders.

¹⁹ The “Other, non-Hispanic” category for race/ethnicity of household reference person includes non-Hispanic adults that identify as multiple races, American Indian, Alaskan Native, Asian, Hawaiian, or Pacific Islander. There are not sufficient respondents in the CPS supplement to present reliable estimates for these individual groups for all outcomes, so they are grouped together into the “Other, non-Hispanic” category.

²⁰ Here we use “rural” to refer to nonmetropolitan counties, “urban” to refer to the principal cities of a metropolitan statistical area (MSA), and “suburbs” to refer to metropolitan locations outside of principal cities. Principal cities include the incorporated areas of the largest city in each MSA and other cities in the MSA that meet specified criteria based on population size and commuting patterns. Nonmetropolitan areas are counties outside MSAs. Revised MSAs and principal cities within them were delineated by the Office of Management and Budget in 2013, based on revised standards developed by the Census Bureau in collaboration with other Federal agencies. The Census Bureau implemented the revised delineations beginning with the 2014 Current Population Survey Food Security Supplement. Food security prevalence statistics by area of residence for 2014 and later are not precisely comparable with corresponding statistics from earlier years.

children.²¹ Among all food-insecure households in 2021, 66.0 percent were households with no children. About 22.4 percent of all food-insecure households included elderly adults. Households with reported incomes below 185 percent of the poverty threshold made up most food-insecure households (52.1 percent). Households with reported incomes at or above 185 percent of the poverty threshold made up 26.5 percent of all food-insecure households, and households with unknown income made up the remaining 21.4 percent of all food-insecure households in 2021.

The prevalence of very low food security in various types of households followed a pattern like that observed for food insecurity (table 2). Percentages were significantly lower than the 2021 national average of 3.8 percent for the following groups:

- Married couples with children (1.7 percent);
- Multiple-adult households with no children (2.6 percent);
- Households with elderly persons (2.8 percent);
- Households with White, non-Hispanic reference persons (2.6 percent);
- Households with incomes at or above 185 percent of the poverty line (1.8 percent);
- Households in suburbs outside principal cities within metropolitan areas (3.2 percent); and
- Households in the Northeast (3.2 percent).

The prevalence of very low food security was significantly higher than the national average (3.8 percent) for the following groups:

- Households with children headed by a single female (8.0 percent);
- Women living alone (6.0 percent) and men living alone (5.9 percent);
- Households with reference persons who are Black, non-Hispanic (7.9 percent) and Hispanic (5.5 percent);
- Households with incomes below 185 percent of the poverty line (10.2 percent); and
- Households located in principal cities (4.6 percent).

In 6.2 percent of households with children, one or more child was food insecure in 2021 (table 3).²² Among household categories, the percentage of households with food-insecure children was significantly lower in married-couple households (3.8 percent); households with a White, non-Hispanic reference person (3.4 percent); households with incomes at or above 185 percent of the poverty line (2.2 percent); and households in the Northeast (4.4 percent). The percentage of households with food-insecure children was significantly higher for female-headed households (12.1 percent); households with a Black, non-Hispanic reference person (12.0 percent) or Hispanic reference person (9.7 percent); households with incomes below 185 percent of the poverty line (14.5 percent); and households in principal cities (7.7 percent).

²¹ The share of food-insecure households that are female-headed households with children can be calculated as $(2,232/13,510) = 0.165$. Similarly, the share of food-insecure households that are married-couple households with children is $(1,761/13,510) = 0.130$.

²² Households are classified as having food insecurity among children if they report two or more food-insecure conditions among children in response to questions 11-18 in the box on page 4.

Table 3

Prevalence of food security and food insecurity in households with children by selected household characteristics, 2021

Category	Total ¹	Food-secure households		Food-insecure households ²		Households with food-insecure children ³		Households with very low food security among children	
	1,000	1,000	Percent	1,000	Percent	1,000	Percent	1,000	Percent
All households with children	36,765	32,170	87.5	4,595	12.5	2,290	6.2	274	0.7
Household composition									
With children < 6 years	15,406	13,418	87.1	1,988	12.9	997	6.5	77	0.5
Married-couple families	23,849	22,088	92.6	1,761	7.4	909	3.8	92	0.4
Female head, no spouse	9,197	6,965	75.7	2,232	24.3	1,114	12.1	162	1.8
Male head, no spouse	3,194	2,678	83.8	516	16.2	239	7.5	NA	NA
Other household with child ⁴	524	438	83.6	86	16.4	NA	NA	NA	NA
Race/ethnicity of household reference persons									
White, non-Hispanic	20,215	18,619	92.1	1,596	7.9	689	3.4	47	0.2
Black, non-Hispanic	5,047	3,903	77.3	1,144	22.7	606	12.0	107	2.1
Hispanic ⁵	8,235	6,755	82.0	1,480	18.0	797	9.7	92	1.1
Other, non-Hispanic	3,268	2,893	88.5	375	11.5	199	6.1	NA	NA
Household income-to-poverty ratio									
Under 1.00	4,017	2,694	67.1	1,323	32.9	679	16.9	137	3.4
Under 1.30	6,082	4,092	67.3	1,990	32.7	1,020	16.8	162	2.7
Under 1.85	9,111	6,472	71.0	2,639	29.0	1,321	14.5	176	1.9
1.85 and over	19,522	18,509	94.8	1,013	5.2	438	2.2	60	0.3
Income unknown	8,131	7,189	88.4	942	11.6	532	6.5	NA	NA
Area of residence ⁶									
Inside metropolitan area	31,887	27,959	87.7	3,928	12.3	1,976	6.2	232	0.7
In principal cities ⁷	9,773	8,325	85.2	1,448	14.8	749	7.7	116	1.2
Not in principal cities	17,638	15,776	89.4	1,862	10.6	938	5.3	97	0.5
Outside metropolitan area	4,878	4,211	86.3	667	13.7	314	6.4	41	0.8
Census geographic region									
Northeast	5,882	5,276	89.7	606	10.3	256	4.4	NA	NA
Midwest	7,528	6,584	87.5	944	12.5	472	6.3	NA	NA
South	14,673	12,708	86.6	1,965	13.4	935	6.4	124	0.8
West	8,682	7,602	87.6	1,080	12.4	627	7.2	77	0.9

NA = Not reported; fewer than 10 households in the survey with this characteristic had food insecurity among children or very low food security among children.

¹ Totals exclude households for which food security status is unknown because the households did not give a valid response to any of the questions in the food security scale. In 2021, these exclusions represented 27,000 households with children (0.1 percent of all households with children).

² Food-insecure households are those with low or very low food security among adults or children or both.

³ In some food-insecure households with children, only adults were food insecure. Households with food-insecure children are those with low or very low food security among children.

⁴ Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

⁵ Hispanics may be of any race.

⁶ Metropolitan area residence is based on 2013 Office of Management and Budget delineation. Prevalence rates by area of residence are comparable with those for 2014 and later but are not precisely comparable with those of earlier years.

⁷ Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 14 percent of households with children in metropolitan statistical areas.

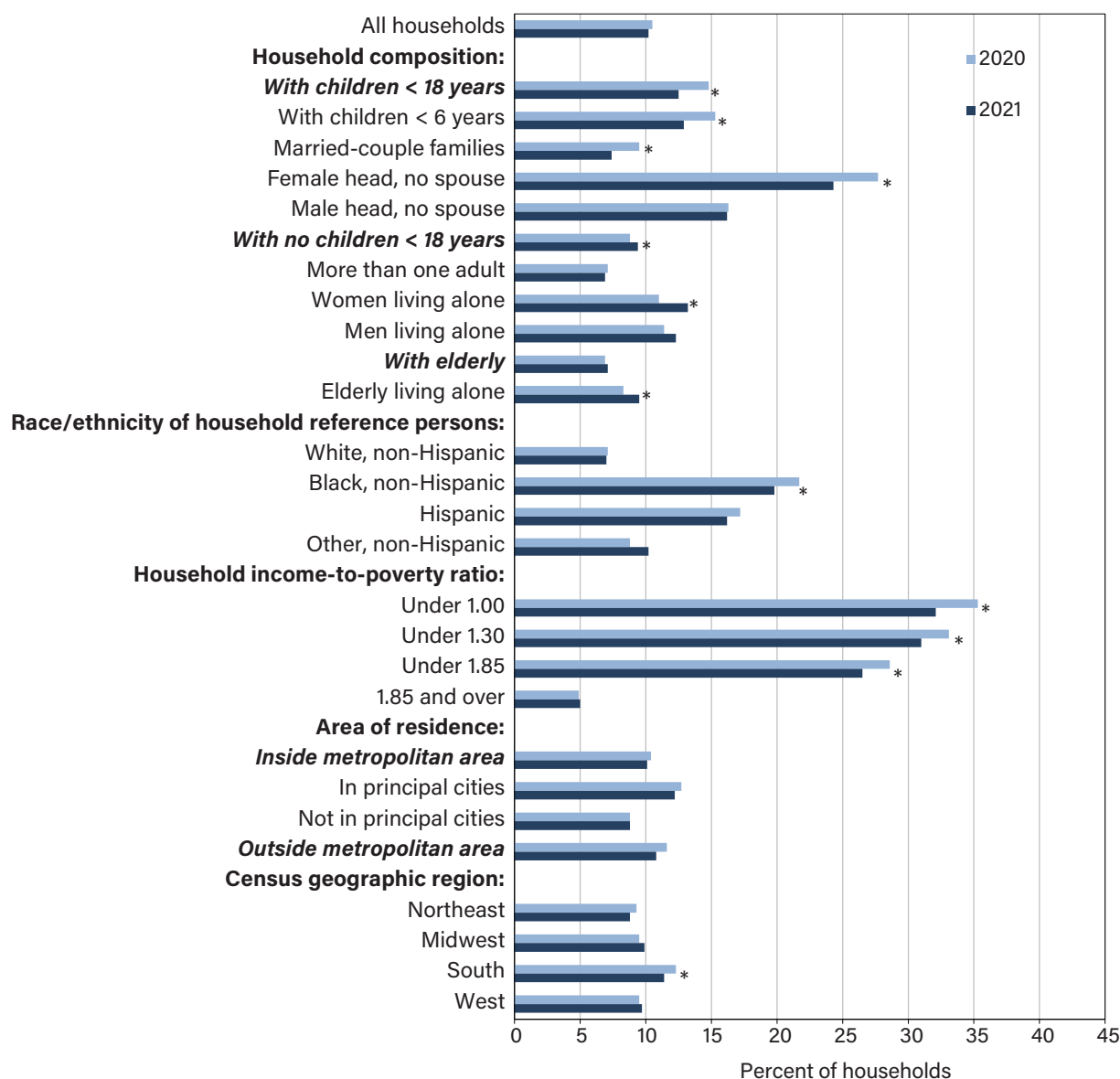
Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

Compared with the prevalence for all households with children in 2021 (0.7 percent), very low food security among children was significantly less prevalent in married-couple households (0.4 percent); households with a White, non-Hispanic reference person (0.2 percent); and households with incomes at or above 185 percent of the poverty line (0.3 percent). Very low food security among children in 2021 was significantly more prevalent in households headed by a single female (1.8 percent); households with a Black, non-Hispanic reference person (2.1 percent); and households with incomes below 185 percent of the poverty line (1.9 percent).

The prevalence of household food insecurity in 2021 is statistically different from the prevalence in 2020 for some population subgroups (figure 5).²³ The prevalence of food insecurity increased for households with no children (8.8 percent in 2020 to 9.4 percent in 2021), especially for women living alone (11.0 percent in 2020 to 13.2 percent in 2021). Food insecurity also increased for elderly people living alone (8.3 percent in 2020 to 9.5 percent in 2021). The prevalence of food insecurity declined from 2020 to 2021 for a few population subgroups. Food insecurity declined significantly for all households with children (14.8 percent in 2020 to 12.5 percent in 2021), households with children under age 6 (15.3 percent in 2020 to 12.9 percent in 2021), married couples with children (9.5 percent in 2020 to 7.4 percent in 2021), and single mothers with children (27.7 percent in 2020 to 24.3 percent in 2021). Food insecurity also declined significantly for households with Black, non-Hispanic reference persons (21.7 percent in 2020 to 19.8 percent in 2021), all low-income households (28.6 percent in 2020 to 26.5 percent in 2021 for households with incomes below 185 percent of the Federal poverty line), and households in the South (12.3 percent in 2020 to 11.4 percent in 2021).

²³ Estimates of food insecurity and very low food security for 2020 were published in *Household Food Security in the United States in 2020* (Coleman-Jensen et al., 2021).

Figure 5
Prevalence of food insecurity, 2020 and 2021

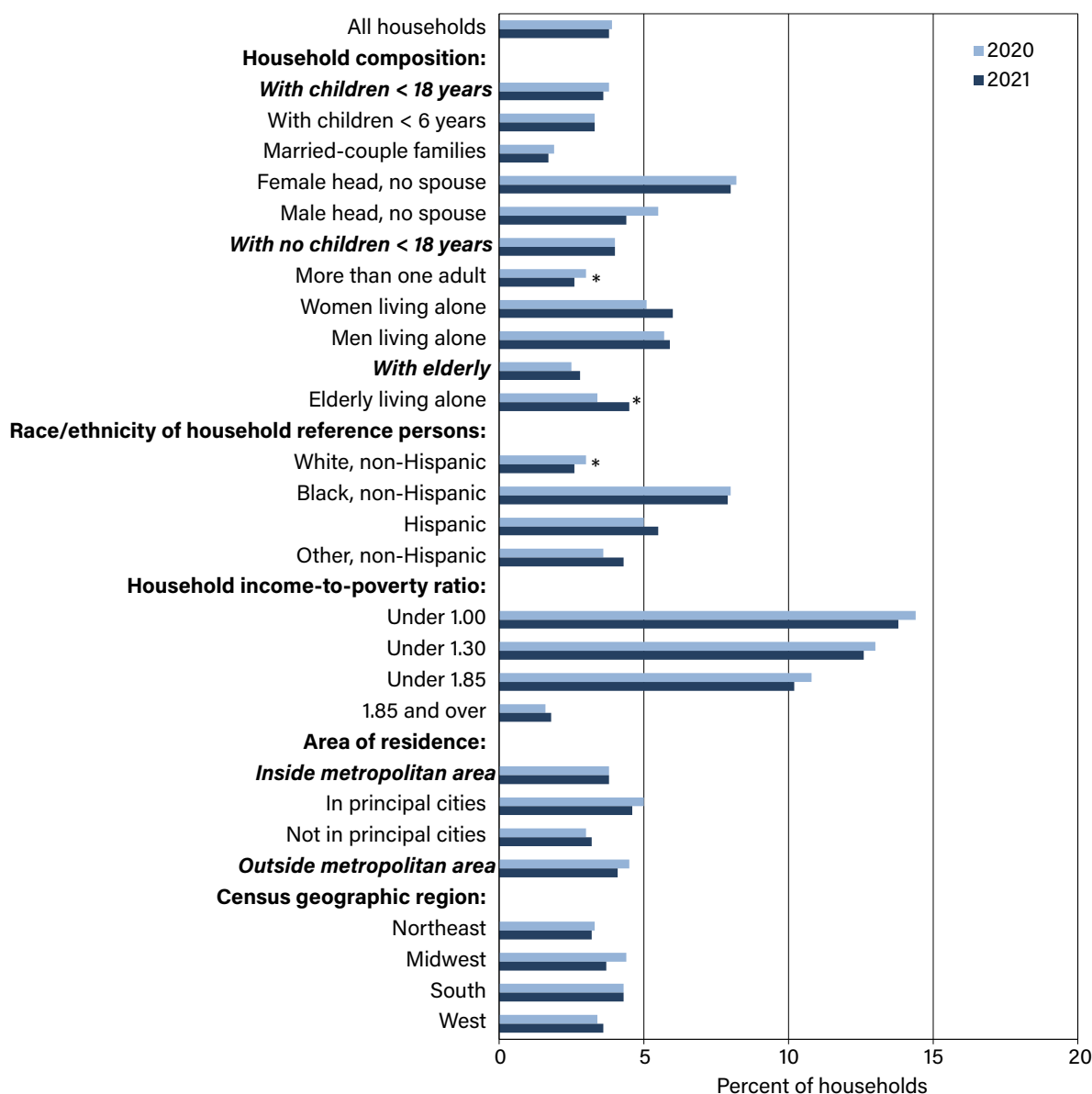


* Change from 2020 to 2021 was statistically significant, with 90-percent confidence ($t > 1.645$).

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2020 and 2021 Current Population Survey Food Security Supplement.

The prevalence of very low food security (figure 6) increased significantly for elderly persons living alone, from 3.4 percent in 2020 to 4.5 percent in 2021. The prevalence of very low food security declined significantly from 2020 to 2021 for households with more than one adult and no children (from 3.0 percent in 2020 to 2.6 percent in 2021) and for households with White, non-Hispanic reference persons (from 3.0 percent in 2020 to 2.6 percent in 2021).

Figure 6
Prevalence of very low food security, 2020 and 2021



* Change from 2020 to 2021 was statistically significant with 90-percent confidence ($t > 1.645$).

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2020 and 2021 Current Population Survey Food Security Supplement.

Prevalence of Food Insecurity by State

The prevalence of food insecurity varies considerably by State. In addition to household-level characteristics such as income, employment, and household structure, the prevalence of food insecurity is also affected by State-level characteristics such as average wages, cost of housing, unemployment, and State-level policies that affect access to unemployment insurance, the State Earned Income Tax Credit, and nutrition assistance programs (Bartfeld et al., 2006; Bartfeld and Men, 2017). State-level estimates were obtained by averaging 3 years of data (2019–21) to generate a larger sample size in each State to provide more reliable statistics that allowed

more precise estimates and more power to detect differences across States. Using single-year food insecurity estimates for States would make it more difficult to detect those States statistically above or below the national average, especially for smaller States. Estimated prevalence rates of food insecurity during this 3-year period ranged from 5.4 percent in New Hampshire to 15.3 percent in Mississippi; estimated prevalence rates of very low food security ranged from 1.8 percent in North Dakota to 6.3 percent in Arkansas (table 4).²⁴

The margin of error for State food insecurity rates should be considered when interpreting these statistics, especially when comparing prevalence rates across States. The margin of error reflects sampling variation—the uncertainty associated with estimates that are based on information from a limited number of households in each State.²⁵ The margins of error presented in table 4 indicate the range of values (above or below the estimated prevalence rate) where, in repeated sampling, we expect to see the true prevalence rate 90 percent of the time. For example, considering the margins of error, it is not certain that the prevalence of very low food security was higher in Arkansas than in six other States.

Taking into account margins of error of the State and U.S. estimates for the 3-year period of 2019–21, the prevalence of food insecurity was higher (i.e., statistically significantly higher) than the national average in 9 States (AL, AR, KY, LA, MS, OK, SC, TX, and WV) and lower than the national average in the District of Columbia and 14 States (CA, IA, MA, MD, MN, ND, NH, NJ, PA, RI, SD, VA, VT, and WA).²⁶ In the remaining 27 States, differences from the national average were not statistically significant. The prevalence of very low food security was higher than the national average in 7 States (AR, LA, MO, MS, SC, TX, and WV), lower than the national average in the District of Columbia and 11 States (CA, IA, MD, MN, ND, NH, NJ, RI, VA, VT, and WA), and not significantly different from the national average in 32 States.

²⁴ A map of the States showing the prevalence of food insecurity for 2019–21 can be downloaded from the USDA, ERS website.

²⁵ Margin of error is calculated as 1.645 times the standard error of the estimated prevalence rate. Standard errors were estimated using balanced repeated replication (BRR) methods based on replicate weights for the Current Population Survey Food Security Supplement.

²⁶ Standard error of difference assumes that there is no correlation between national and individual State estimates.

Table 4

Prevalence of household food insecurity and very low food security by State, average 2019–21

State	Number of households		Food insecurity (low or very low food security)		Very low food security	
	Average 2019–21 ¹	Interviewed	Prevalence	Margin of error ²	Prevalence	Margin of error ²
	Number	Number	Percent	Percentage points	Percent	Percentage points
U.S.	130,708,000	98,794	10.4	0.19	4.0	0.13
AK	269,000	1,203	9.5	1.93	4.0	1.35
AL	2,039,000	1,764	13.1*	2.12	4.6	1.15
AR	1,289,000	1,728	15.0*	1.86	6.3*	1.05
AZ	2,929,000	1,624	10.1	1.77	3.1	0.86
CA	14,165,000	8,100	9.6*	0.55	3.5*	0.40
CO	2,345,000	1,034	10.5	1.96	3.8	1.12
CT	1,441,000	837	9.6	2.03	4.2	1.30
DC	342,000	2,019	9.0*	1.27	2.8*	0.75
DE	387,000	1,016	11.2	2.23	4.1	1.34
FL	9,274,000	4,079	9.9	0.93	3.8	0.55
GA	4,179,000	2,075	9.9	1.37	3.9	1.00
HI	487,000	1,331	9.1	1.53	3.1	0.93
IA	1,316,000	1,204	7.0*	1.75	2.3*	0.99
ID	695,000	1,795	9.8	1.31	3.9	0.85
IL	5,015,000	2,789	9.4	1.08	4.0	0.74
IN	2,757,000	1,728	9.7	1.33	4.5	0.93
KS	1,157,000	1,297	10.2	1.44	4.2	1.12
KY	1,867,000	1,196	12.3*	1.80	4.4	1.18
LA	1,880,000	2,181	14.5*	1.57	5.7*	0.87
MA	2,812,000	1,879	8.4*	1.20	3.2	0.77
MD	2,301,000	1,214	8.7*	1.53	2.9*	0.93
ME	571,000	911	9.5	1.70	4.5	0.77
MI	4,142,000	2,307	11.4	1.50	4.6	0.79
MN	2,303,000	1,428	7.4*	1.62	2.8*	1.02
MO	2,503,000	1,607	12.0	1.87	5.6*	1.22
MS	1,174,000	2,061	15.3*	2.04	5.5*	1.06
MT	474,000	1,997	10.4	1.53	4.7	0.96
NC	4,450,000	2,125	10.9	1.45	3.6	0.71
ND	331,000	1,641	7.7*	1.25	1.8*	0.64
NE	792,000	1,123	10.6	1.63	4.6	1.17
NH	554,000	1,431	5.4*	1.21	2.0*	0.71
NJ	3,426,000	1,963	8.3*	1.26	2.7*	0.84
NM	865,000	1,886	11.5	2.71	4.5	1.74
NV	1,220,000	1,410	10.2	1.45	4.2	1.04
NY	7,774,000	3,690	10.3	0.99	3.5	0.62
OH	4,816,000	2,605	10.8	1.21	4.6	0.96
OK	1,591,000	1,449	13.8*	2.00	4.4	0.91
OR	1,761,000	1,805	10.3	1.45	3.9	0.89
PA	5,063,000	2,643	9.2*	1.09	3.8	0.60
RI	430,000	925	8.4*	1.82	2.6*	0.87
SC	2,180,000	1,510	12.6*	1.52	5.9*	1.28
SD	367,000	1,174	8.7*	1.43	3.7	1.00
TN	2,826,000	2,081	11.2	1.19	4.5	0.73
TX	10,766,000	5,141	13.7*	0.91	5.0*	0.58
UT	1,139,000	1,329	11.2	1.49	3.9	1.16
VA	3,412,000	1,838	7.8*	1.24	3.1*	0.72
VT	279,000	1,553	7.9*	1.23	2.8*	0.81
WA	3,096,000	1,960	7.9*	1.05	3.0*	0.68
WI	2,483,000	1,628	9.9	1.74	3.1	0.90
WV	740,000	1,974	14.0*	3.04	5.2*	1.02
WY	233,000	1,506	11.2	1.46	4.7	0.91

*Difference from U.S. average was statistically significant with 90-percent confidence ($t > 1.645$). Standard error of differences assumes no correlation between national and individual State estimates.

¹ Totals exclude households for which food security status is unknown because household respondents did not give a valid response to any of the questions in the food security scale. These exclusions represented about 0.2 percent of all households in 2019, 0.2 percent in 2020, and 0.2 percent in 2021.

² Margin of error with 90-percent confidence (1.645 times the standard error of the estimated prevalence rate). Standard errors were estimated using balanced repeated replication (BRR) methods based on replicate weights for the Current Population Survey Food Security Supplement.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2019, 2020, and 2021 Current Population Survey Food Security Supplements.

State-level rates of food insecurity and very low food security for 2019–21 are compared with 2016–18 and 2009–11 averages in table 5. Prevalence rates for the preceding 3-year period of 2016–18 are from *Household Food Security in the United States in 2018* (Coleman-Jensen et al., 2019). The 2009–11 rates are from *Household Food Security in the United States in 2011* (Coleman-Jensen et al., 2012) and are presented as a baseline to assess changes in State-level food security conditions over the past decade.²⁷

No statistically significant increases in the State-level prevalence of food insecurity occurred from the periods 2016–18 to 2019–21, while food insecurity declined significantly in 14 States (AZ, CA, FL, IN, KS, ME, NC, NH, NM, NV, OH, PA, VA, and WA; table 5). During the same period, a statistically significant increase occurred in the prevalence of very low food security in 1 State (SC), while very low food security declined significantly in the District of Columbia and 10 States (AL, AZ, IA, KS, MD, NC, ND, OK, RI, and VA).

Across the decade, there were no statistically significant percentage-point increases in the prevalence of food insecurity from the periods 2009–11 to 2019–21. There were statistically significant declines in 41 States and the District of Columbia (see table 5). The prevalence of very low food security increased significantly from the periods 2009–11 to 2019–21 in one State (SC), with statistically significant declines in 29 States and the District of Columbia. Changes not marked as statistically significant (*) in table 5 were within ranges that could have resulted from sampling variation (that is, a non-zero difference between sample estimates, based on the households that happen to be chosen for the sample, which is consistent with no actual change in food security in the State’s general population).

²⁷ Prevalence rates for 1996–98 reported in *Prevalence of Food Insecurity and Hunger, by State, 1996–1998* (Nord et al., 1999) are not directly comparable with the rates reported here because of differences in screening procedures in the CPS Food Security Supplements from 1995 to 1998. Statistics for 1996–98, adjusted to be comparable with those for recent years, are presented in *Statistical Supplement to Food Security in the United States in 2010*, table S-4 (Coleman-Jensen et al., 2011). Standard errors of State-level estimates for 2009–11 were calculated using jackknife replication methods with “month-in-sample” groups considered as separate independent samples (see Nord et al., 1999).

Table 5

Change in prevalence of household food insecurity and very low food security by State: 2019–21 (average), 2016–18 (average), and 2009–11 (average)¹

State	Food insecurity (low or very low food security)					Very low food security				
	Average	Average	Average	Change	Change	Average	Average	Average	Change	Change
	2019–21	2016–18	2009–11	2016–18 to 2019–21	2009–11 to 2019–21	2019–21	2016–18	2009–11	2016–18 to 2019–21	2009–11 to 2019–21
	-----Percent-----			Percentage points		-----Percent-----			Percentage points	
U.S.	10.4	11.7	14.7	-1.3*	-4.3*	4.0	4.6	5.6	-0.6*	-1.6*
AK	9.5	10.8	13.9	-1.3	-4.4*	4.0	4.3	4.8	-0.3	-0.8
AL	13.1	14.7	18.2	-1.6	-5.1*	4.6	6.8	7.1	-2.2*	-2.5*
AR	15.0	15.1	19.2	-0.1	-4.2*	6.3	6.1	7.6	0.2	-1.3
AZ	10.1	12.4	15.8	-2.3*	-5.7*	3.1	5.1	6.2	-2.0*	-3.1*
CA	9.6	10.6	16.2	-1.0*	-6.6*	3.5	3.9	5.8	-0.4	-2.3*
CO	10.5	9.1	13.4	1.4	-2.9*	3.8	3.6	5.4	0.2	-1.6*
CT	9.6	12.4	11.9	-2.8	-2.3*	4.2	4.2	4.7	0.0	-0.5
DC	9.0	10.6	12.6	-1.6	-3.6*	2.8	4.5	4.4	-1.7*	-1.6*
DE	11.2	10.5	10.9	0.7	0.3	4.1	4.5	4.3	-0.4	-0.2
FL	9.9	11.7	15.4	-1.8*	-5.5*	3.8	4.2	6.3	-0.4	-2.5*
GA	9.9	11.3	17.4	-1.4	-7.5*	3.9	3.8	6.4	0.1	-2.5*
HI	9.1	8.0	13.8	1.1	-4.7*	3.1	3.2	5.6	-0.1	-2.5*
IA	7.0	9.2	12.0	-2.2	-5.0*	2.3	3.9	4.7	-1.6*	-2.4*
ID	9.8	9.8	13.7	0.0	-3.9*	3.9	3.3	5.0	0.6	-1.1
IL	9.4	10.7	13.3	-1.3	-3.9*	4.0	4.4	4.5	-0.4	-0.5
IN	9.7	13.5	13.2	-3.8*	-3.5*	4.5	4.8	5.4	-0.3	-0.9
KS	10.2	13.8	14.5	-3.6*	-4.3*	4.2	6.2	5.2	-2.0*	-1.0
KY	12.3	14.7	16.4	-2.4	-4.1*	4.4	5.7	6.6	-1.3	-2.2*
LA	14.5	15.8	14.1	-1.3	0.4	5.7	6.8	4.4	-1.1	1.3
MA	8.4	9.3	11.9	-0.9	-3.5*	3.2	3.2	4.5	0.0	-1.3
MD	8.7	11.1	12.5	-2.4	-3.8*	2.9	5.2	5.6	-2.3*	-2.7*
ME	9.5	13.6	14.7	-4.1*	-5.2*	4.5	5.9	6.5	-1.4	-2.0*
MI	11.4	12.9	14.2	-1.5	-2.8*	4.6	5.3	5.6	-0.7	-1.0
MN	7.4	8.6	10.2	-1.2	-2.8*	2.8	3.3	4.3	-0.5	-1.5*
MO	12.0	12.0	16.0	0.0	-4.0*	5.6	4.4	6.7	1.2	-1.1
MS	15.3	15.9	19.2	-0.6	-3.9*	5.5	6.3	7.1	-0.8	-1.6
MT	10.4	10.3	14.5	0.1	-4.1*	4.7	3.9	5.4	0.8	-0.7
NC	10.9	13.9	17.1	-3.0*	-6.2*	3.6	5.5	5.8	-1.9*	-2.2*
ND	7.7	8.8	7.8	-1.1	-0.1	1.8	3.6	3.1	-1.8*	-1.3*
NE	10.6	11.4	13.3	-0.8	-2.7*	4.6	4.7	4.9	-0.1	-0.3
NH	5.4	7.8	9.6	-2.4*	-4.2*	2.0	2.8	4.0	-0.8	-2.0*
NJ	8.3	8.5	12.3	-0.2	-4.0*	2.7	3.1	4.5	-0.4	-1.8*
NM	11.5	16.8	16.5	-5.3*	-5.0*	4.5	5.8	6.3	-1.3	-1.8
NV	10.2	12.9	15.3	-2.7*	-5.1*	4.2	5.4	6.0	-1.2	-1.8*
NY	10.3	10.5	13.3	-0.2	-3.0*	3.5	3.8	5.1	-0.3	-1.6*
OH	10.8	13.2	15.5	-2.4*	-4.7*	4.6	5.8	6.4	-1.2	-1.8*
OK	13.8	15.6	14.7	-1.8	-0.9	4.4	6.1	7.0	-1.7*	-2.6*
OR	10.3	11.1	13.6	-0.8	-3.3*	3.9	4.8	5.9	-0.9	-2.0*
PA	9.2	11.1	12.5	-1.9*	-3.3*	3.8	4.2	5.0	-0.4	-1.2*
RI	8.4	11.0	15.5	-2.6	-7.1*	2.6	4.7	6.0	-2.1*	-3.4*
SC	12.6	11.0	14.8	1.6	-2.2	5.9	4.0	4.4	1.9*	1.5*
SD	8.7	10.9	12.7	-2.2	-4.0*	3.7	4.8	5.3	-1.1	-1.6*
TN	11.2	12.4	15.2	-1.2	-4.0*	4.5	5.2	6.4	-0.7	-1.9*
TX	13.7	14.0	18.5	-0.3	-4.8*	5.0	5.4	6.5	-0.4	-1.5*
UT	11.2	9.8	14.6	1.4	-3.4*	3.9	3.2	5.2	0.7	-1.3
VA	7.8	10.1	9.1	-2.3*	-1.3	3.1	4.8	3.2	-1.7*	-0.1
VT	7.9	9.6	12.8	-1.7	-4.9*	2.8	3.3	5.4	-0.5	-2.6*
WA	7.9	10.3	15.4	-2.4*	-7.5*	3.0	4.0	6.2	-1.0	-3.2*
WI	9.9	8.9	11.3	1.0	-1.4	3.1	3.4	4.7	-0.3	-1.6*
WV	14.0	15.7	14.1	-1.7	-0.1	5.2	5.9	5.1	-0.7	0.1
WY	11.2	12.6	12.7	-1.4	-1.5	4.7	5.0	4.8	-0.3	-0.1

*Change was statistically significant, with 90-percent confidence ($t > 1.645$).

¹Percentages exclude households for which food security status is unknown because household respondents did not give a valid response to any of the questions in the food security scale.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, Current Population Survey Food Security Supplements.

Household Spending on Food

Food insecurity arises from a lack of money and other resources to acquire food. Most households purchase much of their food from supermarkets or grocery stores; some food also comes from cafeterias, restaurants, vending machines, or other types of stores. Families with children may also get food from schools and child-care. The amount of money a household spends on food is one indicator for how adequately the household is meeting its food needs.²⁸ When a household reduces food spending below a minimum level, such as those defined in USDA’s Thrifty Food Plan (TFP), because of constrained resources, disrupted eating patterns and reduced food intake may result. This section provides information on how much households spent on food, as reported in the December 2021 Food Security Supplement.

Methods

The household food expenditure statistics in this report are based on usual weekly spending for food, as reported by respondents after reflecting on the household’s actual food spending during the previous week. Respondents were first asked to report the amounts of money their households spent on food in the week before the interview, including purchases made with Supplemental Nutrition Assistance Program (SNAP) benefits at:

- Supermarkets and grocery stores;
- Stores other than supermarkets and grocery stores, such as meat markets, produce stands, bakeries, warehouse clubs, and convenience stores;
- Restaurants, fast-food places, cafeterias, and vending machines; and
- “...Any other kind of place.”²⁹

Total spending for food, based on responses to this series of questions, was verified with the respondent. The respondent was then asked how much the household usually spent on food during a week.³⁰ USDA, Economic Research Service (ERS) analyses showed that usual food expenditures estimated from data collected by this method were consistent with estimates from the Consumer Expenditure Survey (CES)—the principal source of data on U.S. household expenditures for goods and services (Oliveira and Rose, 1996; Nord, 2009b).

Usual food spending was adjusted for household size and composition in two ways. First, researchers divided each household’s usual weekly food expenditure by the number of household members, yielding the “usual weekly food spending per person” for that household. The second adjustment more precisely accounts for the different food needs of households by comparing each household’s usual food spending with the estimated

²⁸ Food spending is only an indirect indicator of food consumption. It understates food consumption in households that receive food from in-kind programs such as the National School Lunch and School Breakfast Programs, WIC, meal programs for children in childcare and for the elderly, and private charitable organizations such as food pantries. Purchases with SNAP benefits, however, are counted as food spending in the Current Population Survey Food Security Supplement. Food spending in 2021 likely included Pandemic Electronic Benefits Transfer (P-EBT), though it was not specifically mentioned because it was delivered similarly to regular SNAP benefits. Food spending also understates food consumption in households that acquire a substantial part of their food supply through gardening, hunting, or fishing, as well as in households that obtain groceries from friends or relatives or eat more meals at friends’ or relatives’ homes than they provide to friends or relatives. Food spending also understates food consumption in geographical areas with relatively low food prices and overstates consumption in areas with relatively high food prices.

²⁹ For spending in the first two categories of stores, respondents were also asked how much of the amount was for “nonfood items, such as pet food, paper products, alcohol, detergents, or cleaning supplies.” These amounts are subtracted from total spending at each of these stores to arrive at spending for food.

³⁰ Beginning with the 2015 Current Population Survey Food Security Supplement, food-spending amounts are categorized in public-use data. Categorizing the dollar amounts reduces the risk of disclosure and is now standard for data collected by the Census Bureau. USDA, ERS analysis suggests this change has little effect on the estimates of median food spending reported in the annual food security reports. The tables presented in this section are based on the categorical food-spending data.

cost of the USDA's TFP for that household in December 2021.³¹ The TFP serves as a national standard for a nutritious, practical, cost-effective diet. It represents a set of “market baskets” of foods and beverages that people in specific age and sex categories could commonly consume at home that are lower in price and of higher nutritional quality to maintain a healthful diet that meets current dietary standards, taking into account the food consumption patterns of U.S. households. The TFP, in addition to its use as a research tool, is used as a basis for setting the maximum SNAP benefit amounts (U.S. Department of Agriculture, 2021). Each household's reported usual weekly food spending was divided by the household-specific cost of the TFP, based on the age- and gender-specific cost of the TFP for each household member and the number of persons in the household (U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, 2022).³²

The medians of each of the two food-spending measures (spending per person per week and total weekly spending relative to the cost of the December 2021 TFP) were estimated at the national level and for households in various categories. Medians are reported rather than averages (means) because medians are less affected by the few unexpectedly high values of usual food spending that are believed to be reporting or data-entry errors. Thus, the median better reflects what a typical household spent.

The TFP was revised significantly in 2021 due to a reevaluation by USDA as required by the 2018 Farm Bill. The reevaluation was based on current food prices, food composition data, consumption patterns, and dietary guidance. Prior updates to the TFP were constrained in not allowing changes of the cost of the TFP beyond adjustments for inflation. The current reevaluation did not have that cost constraint. The resulting 2021 TFP is a 21-percent increase in cost from the previous version after adjusting for current prices (U.S. Department of Agriculture, 2021). In December 2020, the weekly cost of the TFP for a family of four (two adults aged 19–50 and two children aged 6–8 and 9–11) was \$154.90 (U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, 2021). By comparison, after the reevaluation, in December 2021, the weekly cost of the TFP for a family of four (two adults aged 19–50 and two children aged 6–8 and 9–11) was \$199.20 (U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, 2022). Because of this change in the TFP, estimates of household spending relative to the cost of the TFP for 2021 shown here are not comparable with prior years. In practical terms, the ratio of household spending relative to the cost of the TFP will differ based on the change in the 2021 cost of the TFP, even if households' actual spending did not change significantly. Median food expenditures per person reported here are not affected by the TFP change and remain comparable across years.

About 6.8 percent of households interviewed in the CPS-FSS did not respond to the food-spending questions (or reported zero usual food spending) and were excluded from the analysis. As a result, the total number of households represented in tables 6 and 7 is smaller than in tables 1 and 2. Food-spending estimates may not be fully representative of all households in the United States.³³

Food Expenditures by Selected Household Characteristics

In 2021, the typical U.S. household spent \$62.50 per person weekly for food (table 6). Median household food spending relative to the cost of the TFP—which adjusts for food price inflation and adjusts more precisely for the food needs of persons in different age-gender categories—was 1.15 (a ratio of household food spending relative to the TFP that is above 1.0 indicates the household spends more than the cost of the TFP;

³¹ The cost of the Thrifty Food Plan (TFP) is revised each month to account for inflation in food prices and was revised significantly in 2021 (U.S. Department of Agriculture, 2021). For this report, TFP costs are estimated by USDA, ERS separately for Alaska and Hawaii, using adjustment factors calculated from SNAP fiscal year 2022 maximum monthly allotments for those States.

³² The cost of a TFP for a household is calculated under the assumption that all food purchased by household members is shared.

³³ Households that were unable or unwilling to report food spending were less likely to be food insecure than those that did report food spending (9.0 percent compared with 10.3 percent). Food spending may, therefore, be slightly underestimated from these data.

a ratio below 1.0 means the household spends less than the cost of the TFP). That is, in 2021, the typical household spent 15 percent more on food than the cost of the TFP for that household. To illustrate what that means, we use an example household. In December 2021, the weekly cost of the TFP for a family of four that included two adults aged 19–50 and two children aged 6–8 and 9–11 was \$199.20. If a sampled household in the CPS-FSS with those same characteristics (family of four composed of two adults aged 19–50 and two children aged 6–8 and 9–11) reported weekly food spending that was 15 percent more than the TFP, they would be spending about \$30 more on food for their household for the week than the cost of the TFP, or a total of \$229.20.

Households with children under the age of 18 generally spent less for food, relative to the household cost of the TFP, than those without children. Put differently, households with children spent less relative to the estimated needed food spending for their household size and composition, based on USDA's TFP. The typical household with children spent 1 percent more than the cost of the TFP on food, while the typical household with no children spent 22 percent more. Median household food expenditures relative to the cost of the TFP were lower for households with children headed by single women (ratio of 0.98) and single men (ratio of 0.94) than for married couples with children (ratio of 1.04). Median food expenditures relative to the cost of the TFP were highest for men living alone (ratio of 1.35).

Median food expenditures relative to the cost of the TFP were lower for households with Black, non-Hispanic (ratio of 1.01) and Hispanic reference persons (ratio of 1.04) than for households with a White, non-Hispanic reference person (ratio of 1.18). This pattern is consistent with the lower average incomes and higher prevalence rates of food insecurity for these racial and ethnic groups.

As expected, households with higher incomes spent more money on food than did lower income households.³⁴ The typical household with income below the poverty line spent about 8 percent less than the cost of the TFP, while the typical household with income at or above 185 percent of the poverty line spent 24 percent more than the cost of the TFP.

Median food spending relative to the cost of the TFP was lower for households in nonmetropolitan areas (ratio of 0.99) and higher for those in principal cities (ratio of 1.22) or in metropolitan areas outside principal cities (ratio of 1.18). Regionally, median spending on food relative to the cost of the TFP was lower in the Midwest (ratio of 1.10).

³⁴ However, food spending does not rise proportionately with income, so high-income households spend a smaller proportion of their income on food than low-income households. In 2020, households with incomes in the lowest income quintile spent about \$4,000 on food annually and this represented about 27 percent of their income. Meanwhile, households with incomes in the highest quintile spent about \$12,000 on food and this represented about 7 percent of their annual income (MacLachlan and Lowe, 2021).

Table 6

Weekly household food spending per person and relative to the household cost of the Thrifty Food Plan (TFP), 2021

Category	Number of households ¹	Median weekly food spending	
		Per person Dollars	Relative to household cost of December 2021 TFP ² Ratio
All households	121,944	62.50	1.15
Household composition			
With children < 18 years	34,512	50.00	1.01
At least one child < 6 years	14,552	47.50	1.05
Married-couple families	22,392	50.00	1.04
Female head, no spouse	8,661	50.00	0.98
Male head, no spouse	2,979	50.00	0.94
Other household with child ³	479	50.00	0.94
With no children < 18 years	87,432	70.00	1.22
More than one adult	52,020	65.00	1.13
Women living alone	19,338	80.00	1.32
Men living alone	16,074	100.00	1.35
With elderly	38,320	60.00	1.06
Elderly living alone	13,979	70.00	1.15
Race/ethnicity of household reference persons			
White, non-Hispanic	79,914	65.00	1.18
Black, non-Hispanic	15,286	57.50	1.01
Hispanic ⁴	17,444	55.00	1.04
Other, non-Hispanic	9,300	65.00	1.14
Household income-to-poverty ratio			
Under 1.00	11,071	50.00	0.92
Under 1.30	15,865	50.00	0.92
Under 1.85	24,901	50.00	0.92
1.85 and over	68,841	70.00	1.24
Income unknown	28,201	60.00	1.06
Area of residence ⁵			
Inside metropolitan area	104,980	65.00	1.17
In principal cities ⁶	35,360	66.67	1.22
Not in principal cities	53,583	65.00	1.18
Outside metropolitan area	16,964	55.00	0.99
Census geographic region			
Northeast	20,767	65.00	1.18
Midwest	26,206	60.00	1.10
South	47,174	60.00	1.12
West	27,797	65.00	1.17

¹Totals exclude households that did not answer the questions about spending on food or reported zero usual food spending. These exclusions represented 8.0 percent of all households.

²Estimates of median weekly food spending, relative to the household cost of the Thrifty Food Plan (TFP) for December 2021, are not comparable to estimates for previous years. This is because the cost of the TFP was revised in 2021 to reflect updated data on food prices, food composition, and consumption patterns, and current dietary guidance.

³Households with children in complex living arrangements, e.g., children of other relatives or unrelated roommate or boarder.

⁴Hispanics may be of any race.

⁵Metropolitan area residence is based on 2013 Office of Management and Budget delineation.

⁶Households within incorporated areas of the largest cities in each metropolitan area. Residence inside or outside of principal cities is not identified for about 15 percent of households in metropolitan statistical areas.

Notes: These estimates are based on categorical food spending data rather than on continuous data that were used in 2014 and earlier years. Beginning with the 2015 Current Population Survey Food Security Supplement, food spending amounts are categorized in public-use data.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

Food Expenditures and Household Food Security

Food-secure households typically spent more on food than did food-insecure households. The ratio for median food spending relative to the cost of the TFP was 1.15 among food-secure households in 2021, compared with 0.99 among food-insecure households (table 7). Thus, taking into account estimated food need based on household size and composition, the median food-secure household spent 16 percent more for food than the median food-insecure household (estimated as $1.15/0.99=1.16$).³⁵ Statistical Supplement table S-10 provides more information on food spending by food-secure and food-insecure households by household characteristics (Coleman-Jensen et al., 2022).

In 2021, households with very low food security reported higher median weekly food spending than households with low food security. The difference between households with low food security and very low food security in food spending relative to the household cost was statistically significant (ratio of 0.96 compared with 1.08). It is unclear why households with very low food security may have spent more on food than households with less severe levels of food insecurity. These estimates only account for household size and composition and do not control for all differences that may impact food spending, such as geographic differences in food prices. There may be other outside factors that affected both very low food security and food spending such as higher perceived food needs, poorer financial literacy skills, or poor health (see Millimet et al. (2018) for a discussion of the effects of financial capabilities on food insecurity and very low food security and Gregory and Coleman-Jensen (2017) for a discussion on severity of food insecurity and chronic disease).

Table 7

Weekly household food spending per person and relative to the cost of the Thrifty Food Plan (TFP) by food security status, 2021

Category	Number of households ¹	Median weekly food spending	
		Per person	Relative to cost of December 2021 TFP ²
	1,000	Dollars	Ratio
All households	121,944	62.50	1.15
Food security status			
Food-secure households	109,226	65.00	1.15
Food-insecure households	12,592	53.33	0.99
Households with low food security	7,884	50.00	0.96
Households with very low food security	4,708	60.00	1.08

¹ Total for all households excludes households that did not answer the questions about spending on food or that reported zero usual spending for food. These exclusions represented 8.0 percent of all households. Totals in the bottom section also exclude households that did not answer any of the questions in the food security scale.

² Estimates of median weekly food spending, relative to the household cost of the Thrifty Food Plan (TFP) for December 2021, are not comparable to estimates for previous years. This is because the cost of the TFP was revised in 2021 to reflect updated data on food prices, food composition, and consumption patterns, and current dietary guidance.

Notes: These estimates are based on categorical food spending data rather than on continuous data that was used in 2014 and earlier years. Beginning with the 2015 Current Population Survey Food Security Supplement, food spending amounts are categorized in public-use data.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

³⁵ The pattern of higher food spending among food-secure households compared with food-insecure households was also found in USDA's National Household Food Acquisition and Purchase Survey (FoodAPS) data (Tiehen et al., 2017).

Federal Nutrition Assistance Programs and Food Security

Households with limited resources use a variety of methods to acquire adequate food. Some participate in Federal food and nutrition assistance programs or obtain food from emergency providers in their communities to supplement the food they purchase. Households that turn to Federal and community food and nutrition assistance programs typically do so because they are having difficulty meeting their food needs. The use of such programs by low-income households provides insight into the extent of these households' difficulties in obtaining enough food. The relationship between food security status and the use of food and nutrition assistance programs also provides insight into how low-income households cope with difficulties in acquiring adequate food.

This section presents information about the food security status of low-income households that participated in the three largest Federal nutrition assistance programs: SNAP, free or reduced-price school lunch from the National School Lunch Program, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (see box, "Federal Nutrition Assistance Programs," page 34). It also provides information about the extent to which food-insecure households participated in these programs. This report does not describe total participation in the Federal food and nutrition assistance programs, participation rates of eligible households in those programs, and characteristics of participants in the programs. Extensive information on those topics is available from USDA's Food and Nutrition Service (FNS).³⁶ The USDA implemented additional nutrition assistance programs and flexibilities in 2020 in response to the COVID-19 pandemic and continued some of them in 2021; for the most updated information on these programs, see the USDA and USDA, FNS websites, and Jones et al. (2022; also see box, "Nutrition Assistance and the COVID-19 Pandemic," page 35).

Statistical Supplement tables S-11 to S-16 provide information on food spending by participants and low-income nonparticipants in selected Federal and community food and nutrition assistance programs and on the extent to which households obtained assistance from community food pantries and emergency kitchens (Coleman-Jensen et al., 2022).

³⁶ Additional research findings on the operations and effectiveness of these programs are available from the USDA, ERS website.

Federal Nutrition Assistance Programs

The U.S. Department of Agriculture's Food and Nutrition Service (FNS) administers 15 domestic nutrition assistance programs. The three largest programs are:

- The Supplemental Nutrition Assistance Program (SNAP) provides monthly benefits to eligible low-income households to purchase food items at SNAP-authorized retailers. SNAP is available to all individuals who meet financial and nonfinancial eligibility criteria. In an average month of fiscal year (FY) 2021 (October 1, 2020, through September 30, 2021), SNAP provided benefits to 41.5 million people in the United States (about 12.5 percent of individuals). The average benefit was about \$218 per person per month, and Federal expenditures for the program were \$113.8 billion that year. In FY 2021, maximum SNAP benefits were temporarily expanded (see below), and at the beginning of FY 2022 (October 1, 2021), maximum SNAP benefits were permanently increased because of the revision of the Thrifty Food Plan that forms the basis for maximum SNAP benefits (U.S. Department of Agriculture, 2021).
- The National School Lunch Program (NSLP) operates in more than 97,000 public and nonprofit private schools and residential childcare institutions. All children attending participating schools are eligible to receive lunch, with lunches available for free to low-income children or at a reduced-price. Schools are reimbursed by the USDA for all meals served under the program on a sliding scale based on whether meals are free, reduced-price, or full price. Before the Coronavirus (COVID-19) pandemic, typical school lunch participation was nearly 30 million children on an average school day. However, it is not possible to compare the NSLP participation rate in FY 2021 with prior years due to how meals were served or provided to children during the school year due to the COVID-19 pandemic. Starting in July 2021, in addition to NSLP, schools were able to serve meals under the NSLP's Seamless Summer Option to support access to nutritious meals while minimizing the potential exposure to COVID-19. In total, 8.4 billion meals were served across the National School Lunch and Breakfast Programs, Child and Adult Care Food Program, and Summer Food Service Program. Some children may also have received Pandemic Electronic Benefits Transfer (P-EBT) or temporary emergency nutrition benefits loaded on Electronic Benefits Transfer (EBT) cards used to purchase food. Children who would have received free or reduced-price meals, but their schools were closed or operated with reduced hours or attendance for at least 5 consecutive days, are eligible to receive P-EBT benefits.
- The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a federally funded nutrition program that provides grants to States to support distribution of supplemental foods, health care referrals, and nutrition education to safeguard the health of low-income pregnant, breastfeeding, and non-breastfeeding postpartum women; for infants in low-income families; and for children younger than age 5 in low-income families and who are found to be at nutritional risk. Most State WIC agencies have replaced paper vouchers with the WIC EBT system. Benefits are issued to participants on WIC EBT cards for redemption at WIC-authorized grocery stores. In FY 2021, WIC served about 6.2 million participants per month at an average monthly cost for food (after rebates to WIC from manufacturers) of about \$35 per person.

Nutrition Assistance and the COVID-19 Pandemic

The effects of the COVID-19 pandemic on the availability and structure of nutrition assistance programs and resulting participation is discussed at length in the USDA, Economic Research Service report “The Food and Nutrition Assistance Landscape: Fiscal Year 2021 Annual Report” (Jones et al., 2022). As summarized in that report:

Federal food and nutrition assistance policy continued to develop throughout FY 2021. Among other legislation and changes in policy, the Federal Government passed the Continuing Appropriations Act, 2021, and Other Extensions Act on October 1, 2020; the Consolidated Appropriations Act, 2021 on December 27, 2020; and the American Rescue Plan Act on March 11, 2021. Maximum Supplemental Nutrition Assistance Program (SNAP) benefit levels were temporarily increased, and supplemental emergency allotments were expanded such that all recipient households received a minimum of \$95 per month. States were given the option to increase the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) cash-value voucher for fruits and vegetables to \$35 per participant. P-EBT benefits were also increased, and the program was expanded to cover children under age 6, additional U.S. territories, and the summer months. The Food Box Program ended in May 2021. Some changes also occurred at the State level, including the further expansion of the SNAP Online Purchasing Pilot, the end of emergency allotments in some States, and the approval of State P-EBT plans throughout the fiscal year.

Detailed information on special program provisions during the COVID-19 pandemic is available on the USDA, FNS website.

Methods

The December 2021 CPS-FSS included questions about the use of Federal nutrition assistance programs. All households with reported annual incomes below 185 percent of the Federal poverty threshold were asked these questions. To minimize respondent burden, households with annual incomes above that range were not asked the questions unless they indicated some level of difficulty in meeting their food needs on the first of the two preliminary screener questions asked of all households (listed in the Household Food Security Methods section earlier in this report).

The questions analyzed in this section regarding SNAP participation are:

- During the past 12 months, since December of last year, did anyone in this household get SNAP or food stamp benefits?³⁷

Households that responded affirmatively were then asked:

- In which months of 2021 were SNAP or food stamp benefits received?

Households that reported participation in November, but not December, were then asked:

- On what date in November did your household receive SNAP or food stamp benefits?

³⁷ The Food Stamp Program was renamed the Supplemental Nutrition Assistance Program (SNAP) in October 2008. The survey mentions both names in the question, as well as the State’s name for the program in States that used a different name.

Information from the 3 questions was used to identify the number of months SNAP benefits were received in the prior year, as well as whether households received SNAP benefits in the 30 days before the survey (mid-November to mid-December 2021).³⁸

Questions about the National School Lunch Program and WIC are also analyzed here. These questions are:

- During the past 30 days, did any children in the household (between 5 and 18 years old) receive free or reduced-price lunches at school? (Only households with children between the ages of 5 and 18 were asked this question.)
- During the past 30 days, did any women or children in this household get food through the WIC program? (Only households with a child under age 5 or a woman aged 15-45 were asked this question.)³⁹

Prevalence rates of food security, food insecurity, and very low food security were calculated for households reporting use of each nutrition assistance program and for comparison groups of nonparticipating households with incomes and household compositions similar to those of nutrition assistance program participants. Statistics shown in tables 8 and 9 are based on the 12-month food security measure, and sensitivity checks reported in the text and footnotes use the 30-day food security measure. Statistics for participating households excluded households with annual incomes above the ranges specified for the comparison groups.⁴⁰ An income cutoff of less than 130 percent of the Federal poverty line includes most SNAP participants (USDA, FNS, 2021). The income ranges for free or reduced-price school lunch and WIC are set at 185 percent of the poverty threshold to match the gross income eligibility limits for those programs. The proportions of food-insecure households participating in each of the largest Federal nutrition assistance programs—SNAP, the National School Lunch Program, and WIC—were calculated, as well as the proportion that participated in any of the three programs.

Food Security of Households That Received Nutrition Assistance

The relationship between food security and the use of food and nutrition assistance programs is complex. Households that report using food and nutrition assistance programs in a one-time survey can either be more food secure or less food secure than low-income households not using those programs. Since the programs provide food and other resources to reduce the severity of food insecurity, households are expected to be more food secure after receiving program benefits than they were before. On the other hand, more food-insecure households—those having greater difficulty meeting their food needs—seek assistance from the programs. Numerous studies confirm this self-selection into nutrition assistance programs and that, when adequately ac-

³⁸ The Current Population Survey household does not always match the SNAP unit. In some households, only some members are eligible for SNAP (Czajka et al., 2012; Scherpf et al., 2015).

³⁹ Because of the COVID-19 pandemic and school closures, students learning virtually and/or quarantining may have received free school meals through school grab n' go meal pick up sites, but due to social distancing requirements, the meals were consumed elsewhere. It is unclear how respondents may have interpreted this question in 2020 and 2021 if free or reduced-price lunches were not received by children "at school." Most school districts offered all students free meals in the 2020-21 and 2021-22 school years through COVID-19 waivers. The survey questions did not ask directly about participation in Pandemic Electronic Benefits Transfer (P-EBT), and it is unlikely that respondents would have reported P-EBT receipt in response to the question about free or reduced-price lunches received at school.

⁴⁰ Some program participants reported annual incomes higher than 12 times the program eligibility criteria, which are based on monthly income (relative to poverty). They may have had monthly incomes below the monthly eligibility threshold during part of the year, or subfamilies within the household may have had incomes low enough to have been eligible.

counted for, it becomes apparent that SNAP improves food security.⁴¹ In 2021, an estimated 39.9 percent of households that received SNAP benefits were food insecure, as were 32.4 percent of households that received free or reduced-price school lunches and 34.0 percent of those that received WIC benefits (table 8).

The prevalence of very low food security among households participating in SNAP was higher than that of nonparticipating households in the same low-income range (17.0 percent versus 9.5 percent). For households that received free or reduced-price school lunches, the prevalence of very low food security was somewhat higher than that of nonparticipating households with school-age children in the same income range (9.3 percent versus 7.2 percent). Very low food security was also somewhat higher among WIC recipient households (9.9 percent) than income eligible non-WIC households (5.0 percent).

A possible complicating factor in interpreting table 8 for school lunch and WIC participation is that food insecurity was measured over 12 months, while program participation is measured over 30 days. An episode of food insecurity may have occurred at a different time during the year than the use of a specific nutrition assistance program. A similar tabulation using a 30-day measure of food insecurity largely overcomes this potential problem because measured food insecurity and reported use of nutrition assistance programs both are referenced to the previous 30 days. That tabulation shows patterns of food insecurity and the use of nutrition assistance programs that are generally similar to those using the 12-month food insecurity measure in table 8, although 30-day food insecurity prevalence rates were lower than the corresponding 12-month rates (see Statistical Supplement table S-15, Coleman-Jensen et al., 2022). There was one exception—the prevalence of very low food security was similar for households that received and those that did not receive free or reduced-price school lunch in the previous 30 days.

⁴¹ This “self-selection” effect is evident in the association between food security and nutrition assistance program participation observed in the food security survey. Participating households were less food secure than similar nonparticipating households. Research that uses methods to account for this self-targeting is required to assess the extent to which the programs improve food security (see Gregory et al. (2015) for a review of this literature and these methods; also see Gundersen et al. (2017); Mabli et al. (2013); Nord (2013); Nord (2012); Nord and Prell (2011); Ratcliffe and McKernan (2011); Nord and Golla (2009); Yen et al. (2008); Wilde and Nord (2005); Gundersen and Oliveira (2001); Gundersen and Gruber (2001); Nelson et al. (1998)). Overall, these studies find that SNAP improves food security.

Table 8

Percentage of households by food security status and participation in selected Federal nutrition assistance programs, 2021

Category	Food secure	Food insecure		
		All	With low food security	With very low food security
Percent				
Income less than 130 percent of poverty line				
Received SNAP ¹ benefits in the previous 12 months	60.1	39.9	22.9	17.0
Received SNAP benefits for all 12 months	61.9	38.1	21.9	16.2
Received SNAP benefits for 1 to 11 months	55.9	44.1	25.4	18.7
Did not receive SNAP benefits in the previous 12 months	75.5	24.5	15.0	9.5
Income less than 185 percent of poverty line; school-age children in household				
Received NSLP ² free or reduced-price school lunch in the previous 30 days	67.6	32.4	23.1	9.3
Did not receive NSLP free or reduced-price school lunch in the previous 30 days	78.4	21.6	14.4	7.2
Income less than 185 percent of poverty line; children under age 5 in household				
Received WIC ³ in the previous 30 days	66.0	34.0	24.1	9.9
Did not receive WIC in the previous 30 days	76.7	23.3	18.3	5.0

¹ SNAP = Supplemental Nutrition Assistance Program, formerly the Food Stamp Program.

² NSLP = National School Lunch Program.

³ WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

Participation in Federal Nutrition Assistance Programs by Food-Insecure Households

About 56 percent of food-insecure households reported receiving assistance from one or more of the three largest Federal nutrition assistance programs during the month before the December 2021 food security survey (table 9). About 42 percent of food-insecure households participated in SNAP. Children in 25.3 percent of food-insecure households received free or reduced-price school lunches. An estimated 8.2 percent of food-insecure households received WIC benefits.⁴² An estimated 55.1 percent of households classified as having very low food security reported participating in one or more of the three largest Federal nutrition assistance programs, with the largest share (42.8 percent) participating in SNAP.⁴³

⁴² These statistics may be biased downward. By comparing household survey data and administrative records, it is documented that food program participation is underreported by household survey respondents, including those in the CPS (Meyer and George, 2011; Parker, 2011; Meyer et al., 2009; Meyer et al., 2015; Meyer and Mittag, 2019). This is probably true for food-insecure households as well, although the extent of underreporting by these households is not known. Because the statistics may be biased, we do not discuss statistical significance of changes between years. Statistics are based on the subsample of households with annual incomes below 185 percent of the poverty line. Not all these households were eligible for certain programs. (For example, many households without pregnant women or children and with incomes above program cut offs would not have been eligible for any of the programs.)

⁴³ The statistics in table 9 were also calculated for households that were food insecure during the 30-day period prior to the survey. In principle, that analysis is preferable because food security status and use of programs are more contemporaneous than when food insecurity is assessed over a 12-month period. However, the results differed only slightly from those in table 9 and are not presented in a separate table. In 2021, an estimated 51.9 percent of households that were food insecure during the 30-day period prior to the survey participated in SNAP, free or reduced-price school lunch, or WIC during that same period. Among households that experienced very low food security in the 30-day period before the survey, 54.2 percent participated in SNAP, free or reduced-price school lunch, or WIC during that same time.

Table 9

Participation of food-insecure households in selected Federal nutrition assistance programs, 2021

Program	Share of food-insecure households that participated in the program during the previous 30 days ^{1 2}	Share of households with very low food security that participated in the program during the previous 30 days ^{1 2}
	Percent	
SNAP ³	41.6	42.8
NSLP ⁴ Free or reduced-price school lunch	25.3	18.9
WIC ⁵	8.2	6.2
Any of the three programs	56.0	55.1
None of the three programs	44.0	44.9

¹ Analysis is restricted to households with annual incomes less than 185 percent of the poverty line because most households with incomes above that range were not asked whether they participated in food assistance programs.

² These statistics understate the extent of nutrition assistance program participation because program participation is underreported by household survey respondents; see footnote 42.

³ SNAP = Supplemental Nutrition Assistance Program, formerly the Food Stamp Program.

⁴ NSLP = National School Lunch Program.

⁵ WIC = Special Supplemental Nutrition Program for Women, Infants, and Children.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Bureau of the Census, 2021 Current Population Survey Food Security Supplement.

References

- Anderson, S.A. (ed.). 1990. “Core Indicators of Nutritional State for Difficult-to-Sample Populations,” *Journal of Nutrition* 120(11S):1557–1600. Report by the Life Sciences Research Office, Federation of American Societies for Experimental Biology, for the American Institute of Nutrition.
- Andrews, M., G. Bickel, and S. Carlson. 1998. “Household Food Security in the United States in 1995: Results From the Food Security Measurement Project,” *Family Economics and Nutrition Review* 11(1&2):17–28, U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.
- Bartfeld, J., R. Dunifon, M. Nord, and S. Carlson. 2006. *What Factors Account for State-to-State Differences in Food Security?* EIB-20, U.S. Department of Agriculture, Economic Research Service.
- Bartfeld, J., and F. Men. 2017. “Food Insecurity Among Households with Children: The Role of the State Economic and Policy Context,” *Social Service Review* 91(4):691–732.
- Bickel, G., M. Andrews, and S. Carlson. 1998. “The Magnitude of Hunger: A New National Measure of Food Security,” *Topics in Clinical Nutrition* 13(4):15–30.
- Bickel, G., M. Nord, C. Price, W.L. Hamilton, and J.T. Cook. 2000. *Guide to Measuring Household Food Security, Revised 2000*, U.S. Department of Agriculture, Food and Nutrition Service.
- Carlson, S.J., M.S. Andrews, and G.W. Bickel. 1999. “Measuring Food Insecurity and Hunger in the United States: Development of a National Benchmark Measure and Prevalence Estimates,” *The Journal of Nutrition* 129(2):510S-516S.
- Coleman-Jensen, A. October 2015. “Commemorating 20 Years of U.S. Food Security Measurement,” *Amber Waves*, U.S. Department of Agriculture, Economic Research Service.
- Coleman-Jensen, A., W. McFall, and M. Nord. 2013. *Food Insecurity in Households With Children: Prevalence, Severity, and Household Characteristics, 2010–11*, EIB-113, U.S. Department of Agriculture, Economic Research Service.
- Coleman-Jensen, A., M. Nord, M. Andrews, and S. Carlson. 2012. *Household Food Security in the United States, 2011*, ERR-141, U.S. Department of Agriculture, Economic Research Service.
- Coleman-Jensen, A., M.P. Rabbitt, and C. Gregory. 2017. *Examining an “Experimental” Food Security Status Classification Method for Households with Children*, TB-1945, U.S. Department of Agriculture, Economic Research Service.
- Coleman-Jensen, A., M.P. Rabbitt, C. Gregory, and A. Singh. 2019. *Household Food Security in the United States in 2018*, ERR-270, U.S. Department of Agriculture, Economic Research Service.
- Coleman-Jensen, A., M.P. Rabbitt, C. Gregory, and A. Singh. 2021. *Household Food Security in the United States in 2020*, ERR-298, U.S. Department of Agriculture, Economic Research Service.
- Coleman-Jensen, A., M.P. Rabbitt, C. Gregory, and A. Singh. 2022. *Statistical Supplement to Household Food Security in the United States in 2021*. AP-105, U.S. Department of Agriculture, Economic Research Service.
- Czajka, J.L., A. Peterson, B. McGill, B. Thorn, and C. Warner-Griffin. 2012. *The Extent and Nature of Under-reporting of SNAP Participation in Federal Surveys*, U.S. Department of Agriculture, Food and Nutrition Service.

- Engelhard, G., M.P. Rabbitt, and E.M. Engelhard. 2018. "Using Household Fit Indices to Examine the Psychometric Quality of Food Insecurity Measures," *Educational and Psychological Measurement* 78(6):1090–1107.
- Farnham, K. 2017. *Evaluating Nonresponse Bias in the 2015 Food Security Supplement to the Current Population Survey*, Memorandum for U.S. Department of Agriculture, Economic Research Service, Food Assistance Branch, from U.S. Bureau of the Census Demographic Statistical Methods Division.
- Fram, M.S., E.A. Frongillo, S.J. Jones, R.C. Williams, M.P. Burke, K.P. DeLoach, and C.E. Blake. 2011. "Children are Aware of Food Insecurity and Take Responsibility for Managing Food Resources," *The Journal of Nutrition* 141(6):1114–19.
- Gregory, C.A. 2020. "Are We Underestimating Food Insecurity? Partial Identification With a Bayesian 4-Parameter IRT Model," *Journal of Classification* 37:632–655.
- Gregory, C.A., and A. Coleman-Jensen. 2017. *Food Insecurity, Chronic Disease, and Health Among Working-Age Adults*, ERR-235, U.S. Department of Agriculture, Economic Research Service.
- Gregory, C.A., L. Mancino, and A. Coleman-Jensen. 2019. *Food Security and Food Purchase Quality Among Low-Income Households: Findings From the National Household Food Acquisition and Purchase Survey (FoodAPS)*, ERR-269, U.S. Department of Agriculture, Economic Research Service.
- Gregory, C.A., M.P. Rabbitt, and D.C. Ribar. 2015. "The Supplemental Nutrition Assistance Program and Food Insecurity," in *SNAP Matters: How Food Stamps Affect Health and Well-Being*. J. Bartfeld, C. Gundersen, T.M. Smeeding, and J.P. Ziliak (eds.), pp. 74–106, Stanford University Press.
- Gundersen, C., and J. Gruber. 2001. "The Dynamic Determinants of Food Insecurity," in *Second Food Security Measurement and Research Conference, Volume II: Papers*, FANRR-11-2, M. Andrews and M. Prell (eds.), pp. 92–110, U.S. Department of Agriculture, Economic Research Service.
- Gundersen, C., B. Krieder, and J. Pepper. 2017. "Partial Identification Methods for Evaluating Food Assistance Programs: A Case Study of the Causal Effect of SNAP on Food Insecurity." *American Journal of Agricultural Economics* 99(4):875–893.
- Gundersen, C., and V. Oliveira. 2001. "The Food Stamp Program and Food Insufficiency," *American Journal of Agricultural Economics* 83(4):875–87.
- Hamilton, W.L., J.T. Cook, W.W. Thompson, L.F. Buron, E.A. Frongillo, Jr., C.M. Olson, and C.A. Wehler. 1997a. *Household Food Security in the United States in 1995: Summary Report of the Food Security Measurement Project*, prepared for U.S. Department of Agriculture, Food and Consumer Service.
- Hamilton, W.L., J.T. Cook, W.W. Thompson, L.F. Buron, E.A. Frongillo, Jr., C.M. Olson, and C.A. Wehler. 1997b. *Household Food Security in the United States in 1995: Technical Report*, prepared for U.S. Department of Agriculture, Food and Consumer Service.
- Hanson, K., and L. Connor. 2014. "Food Insecurity and Dietary Quality in U.S. Adults and Children: A Systematic Review," *American Journal of Clinical Nutrition* 100(2):684–692.
- Hoop, R., J. Hatch, E. Hood, and Farber, J. 2022. *Evaluating Nonresponse Bias in the 2020 Food Security Supplement to the Current Population Survey*. Memorandum for U.S. Department of Agriculture, Economic Research Service, Food Assistance Branch, from U.S. Bureau of the Census Demographic Statistical Methods Division.

- Jones, J.W., L. Hodges, and S. Toossi. 2022. *The Food and Nutrition Assistance Landscape: Fiscal Year 2021 Annual Report*, EIB-237, U.S. Department of Agriculture, Economic Research Service.
- Leung, C.W., E.S. Epel, L.D. Ritchie, P.B. Crawford, and B.A. Laraia. 2014. “Food Insecurity is Inversely Associated with Diet Quality of Lower-Income Adults,” *Journal of the Academy of Nutrition and Dietetics* 114(12):1943–1953.
- Leung, C.W., and J.M. Tester. 2019. “The Association Between Food Insecurity and Diet Quality Varies by Race/Ethnicity: An Analysis of National Health and Nutrition Examination Survey 2011-2014 Results,” *Journal of the Academy of Nutrition and Dietetics* 119(10):1676–1686.
- Mabli, J., J. Ohls, L. Dragoset, L. Castner, and B. Santos. 2013. *Measuring the Effect of Supplemental Nutrition Assistance Program (SNAP) Participation on Food Security*, prepared for U.S. Department of Agriculture, Food and Nutrition Service.
- MacLachlan, M., and C. Lowe. 2022. *Food Price Environment: Interactive Visualization*. ERS Data Products: Food Price Outlook, U.S. Department of Agriculture, Economic Research Service.
- Meyer, B.D., and R.M. George. 2011. “Errors in Survey Reporting and Imputation and Their Effects on Estimates of Food Stamp Program Participation,” Working Paper, The Harris School, University of Chicago.
- Meyer, B.D., and N. Mittag. 2019. “Misreporting of Government Transfers: How Important are Survey Design and Geography?” *Southern Economic Journal* 86(1):230–253.
- Meyer, B.D., W.K.C. Mok, and J.X. Sullivan. 2009. “The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences.” National Bureau of Economic Research Working Paper No. 15181, Cambridge, MA: National Bureau of Economic Research.
- Meyer, B.D., W.K.C. Mok, and J.X. Sullivan. 2015. “Household Surveys in Crisis,” *Journal of Economic Perspectives* 29(4):199–226.
- Millimet, D.J., I.K. McDonough, and T.B. Fomby. 2018. “Financial Capability and Food Security in Extremely Vulnerable Households,” *American Journal of Agricultural Economics* 100(4):1224–1249.
- National Research Council. 2006. *Food Insecurity and Hunger in the United States: An Assessment of the Measure*. Committee on National Statistics, Panel to Review the U.S. Department of Agriculture’s Measurement of Food Insecurity and Hunger, G. S. Wunderlich and J. L. Norwood (eds.), Washington, DC: The National Academies Press.
- Nelson, K., M. Brown, and N. Lurie. 1998. “Hunger in an Adult Patient Population,” *Journal of the American Medical Association* 279(15):1211–14.
- Nord, M. 2009a. *Food Insecurity in Households With Children: Prevalence, Severity, and Household Characteristics*, EIB-56, U.S. Department of Agriculture, Economic Research Service.
- Nord, M. 2009b. *Food Spending Declined and Food Insecurity Increased for Middle-Income and Low-Income Households from 2000 to 2007*, EIB-61, U.S. Department of Agriculture, Economic Research Service.
- Nord, M. 2012. “How Much Does the Supplemental Nutrition Assistance Program Alleviate Food Insecurity? Evidence from Recent Programme Leavers,” *Public Health Nutrition* 15(5):811–17.
- Nord, M. 2013. *Effects of the Decline in the Real Value of SNAP Benefits From 2009 to 2011*, ERR-151, U.S. Department of Agriculture, Economic Research Service.

- Nord, M., M. Andrews, and F.J. Winicki. 2000. "Frequency and Duration of Food Insecurity and Hunger in U.S. Households," Paper presented at the Fourth International Conference on Dietary Assessment Methods, Tucson, AZ, Sept. 17–20.
- Nord, M., and G. Bickel. 2002. *Measuring Children's Food Security in U.S. Households, 1995-9*, FANRR-25, U.S. Department of Agriculture, Economic Research Service.
- Nord, M., and A. Coleman-Jensen. 2014. "Improving Food Security Classification of Households With Children," *Journal of Hunger and Environmental Nutrition* 9(3):318–33.
- Nord, M., and A.M. Golla. 2009. *Does SNAP Decrease Food Insecurity? Untangling the Self-Selection Effect*, ERR-85, U.S. Department of Agriculture, Economic Research Service.
- Nord, M., and K. Hanson. 2012. "Adult Caregiver Reports of Adolescents' Food Security Do Not Agree Well with Adolescents' Own Reports," *Journal of Hunger and Environmental Nutrition* 7(4):363–80.
- Nord, M., and H. Hopwood. 2007. "Recent Advances Provide Improved Tools for Measuring Children's Food Security," *Journal of Nutrition* 137(3):533–36.
- Nord, M., K. Jemison, and G.W. Bickel. 1999. *Prevalence of Food Insecurity and Hunger by State, 1996–1998*, FANRR-2, U.S. Department of Agriculture, Economic Research Service.
- Nord, M., and L.S. Kantor. 2006. "Seasonal Variation in Food Insecurity Is Associated with Heating and Cooling Costs Among Low-Income Elderly Americans," *Journal of Nutrition* 136(11):2939–44.
- Nord, M., and M. Prell. 2011. *Food Security Improved Following the 2009 Increase in SNAP Benefits*, ERR-116, U.S. Department of Agriculture, Economic Research Service.
- Oliveira, V., and D. Rose. 1996. *Food Expenditure Estimates From the 1995 CPS Food Security Supplement: How Do They Compare With the Consumer Expenditure Survey?*, Staff Report No. AGES9617, U.S. Department of Agriculture, Economic Research Service.
- Parker, J. 2011. "SNAP Misreporting on the CPS: Does it Affect Poverty Estimates?" Social, Economic, and Housing Statistics Division Working Paper No. 2012-1, U.S. Department of Commerce, Bureau of the Census.
- Rabbitt, M.P., and A. Coleman-Jensen. 2017. "Rasch Analysis of the Standardized Spanish Translation of the U.S. Household Food Security Survey Module," *Journal of Economic and Social Measurement* 42(2):171–197.
- Rabbitt, M.P., G. Engelhard, and J.K. Jennings. 2021. "Assessing the Dimensionality of Food-Security Measures," *Journal of Economic and Social Measurement* 45(3–4):183–213.
- Ratcliffe, C., and S. McKernan. 2011. "How Much Does the Supplemental Nutrition Assistance Program Reduce Food Insecurity?" *American Journal of Agricultural Economics* 93(4):1082–98.
- Ryu, J., and J.S. Bartfeld. 2012. "Household Food Insecurity During Childhood and Subsequent Health Status: The Early Childhood Longitudinal Study–Kindergarten Cohort," *American Journal of Public Health* 102(11):e50–e55.
- Scherpf, E., C. Newman, and M. Prell. 2015. *Improving the Assessment of SNAP Targeting Using Administrative Records*, ERR-186, U.S. Department of Agriculture, Economic Research Service.
- Tiehen, L., C. Newman, and J. Kirlin. 2017. *The Food Spending Patterns of SNAP Households: Findings From the National Food Acquisition and Purchase Survey Data*, EIB-176, U.S. Department of Agriculture, Economic Research Service.

- U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. 2021. *Official USDA Food Plans: Cost of Food at Home at Four Levels, U.S. Average, December 2020*. January 2021.
- U.S. Department of Agriculture, Center for Nutrition Policy and Promotion. 2022. *Official USDA Thrifty Food Plan: U.S. Average, December 2021*. January 2022.
- U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support. 2021. “Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2019,” SNAP-20-CHAR.
- U.S. Department of Agriculture. *Thrifty Food Plan, 2021*. FNS-916.
- U.S. Department of Labor, U.S. Bureau of Labor Statistics. 2022. “The Employment Situation—December 2021,” Economic News Release, USDL-22-0015.
- Wilde, P., and M. Nord. 2005. “The Effect of Food Stamps on Food Security: A Panel Data Approach,” *Review of Agricultural Economics* 27(3):425–32.
- Wilde, P.E., R.E. Zagar, and M. Nord. 2010. “In Longitudinal Data from the Survey of Program Dynamics, 16.9% of the U.S. Population Was Exposed to Household Food Insecurity in a 5-Year Period,” *Journal of Hunger and Environmental Nutrition* 5(3):380–98.
- Yen, S.T., M. Andrews, Z. Chen, and D.B. Eastwood. 2008. “Food Stamp Program Participation and Food Insecurity: An Instrumental Variables Approach,” *American Journal of Agricultural Economics* 90(1):117–32.
- Zizza, C.A., P.A. Duffy, and S.A. Gerrior. 2008. “Food Insecurity Is Not Associated With Lower Energy Intakes,” *Obesity* 16:1908–1913.