

# Indicators of Diet Quality, Nutrition, and Health for Americans by Program Participation Status, 2011–2016: SNAP Report



## Appendix I. Matched Comparison of SNAP Participants With SNAP Plus NSLP Participants and With Income-Eligible Nonparticipants



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## Appendix I. Matched Comparison of SNAP Participants With SNAP Plus NSLP Participants and With Income-Eligible Nonparticipants



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### Authors

Stacy Gleason  
Dani Hansen  
Breanna Wakar

### Submitted to

USDA Food and Nutrition Service,  
Office of Policy Support  
1320 Braddock Place  
Alexandria, VA 22310

### Project Officer

Michael Burke

### Submitted by

Insight Policy Research, Inc.  
1901 North Moore Street  
Suite 1100  
Arlington, VA 22209

### Project Director

Stacy Gleason

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# Appendix I. Matched Comparison of SNAP Participants With SNAP Plus NSLP Participants and With Income-Eligible Nonparticipants

This appendix summarizes findings for selected measures of overall diet quality, nutrition and health, and nutrient and calorie intakes (see text box) among three comparable groups: participants of SNAP only (SNAP-only participants), participants of SNAP plus National School Lunch Program (NSLP) (SNAP plus NSLP participants), and individuals who were income-eligible for SNAP but did not participate in any program (income-eligible nonparticipants). Comparisons of these outcomes are described in the text and presented in supporting tables in section C of this appendix.

## A. Introduction

This section describes the sample and details the approach used to conduct the matched analyses.

### 1. Sample

Analyses were based on the National Health and Nutrition Examination Survey (NHANES) 2011–2016 data. The sample was restricted to school children aged 5–18. SNAP participants were defined in the same way as for the descriptive analyses: through an affirmative response to the NHANES survey question, “Do you/Does any member of your household currently receive SNAP or Food Stamp benefits?” (CDC NCHS, 2020c). Respondents who indicated never having received SNAP, not having received SNAP benefits in the past 12 months, or not currently receiving SNAP were identified as nonparticipants. School children who did not participate in SNAP were defined as income-eligible if their annual household income was less than or equal to 130 percent of the Federal Poverty Guidelines. NSLP participants were identified as school children aged 5–18 who were likely to have received a reimbursable school lunch on the day of their dietary recall.

A propensity score-matching model was employed to minimize observable differences among SNAP-only participants, SNAP plus NSLP participants, and income-eligible nonparticipants, thereby reducing the potential for selection bias because of factors associated with both program participation and the outcomes of interest. A propensity score was estimated<sup>1</sup> for each child in the analysis sample from a multinomial logistic regression modeling the probability they were in all three comparison groups based on their characteristics. The following variables were included in the propensity score model: age, gender, race,

### Matched Outcomes

#### Overall diet quality

- Total Healthy Eating Index (HEI)-2015 scores
- Component HEI-2015 scores

#### Indicators of nutrition and health

- Body mass index-for-age
- Blood pressure
- High-density lipoproteins
- Low-density lipoproteins
- Triglycerides concentrations
- Blood glucose levels
- Hemoglobin
- Serum vitamin D concentrations

#### Nutrient and energy intakes

- Total calories
- Calories from added sugars and added fats
- Calcium
- Vitamin D
- Dietary fiber
- Iron
- Potassium
- Sodium

<sup>1</sup> Propensity score estimation and matching were completed using the R package TriMatch version 0.9.9.

household size, U.S. citizenship, ratio of family income to poverty guidelines, income from Supplemental Security Income, income from State or county cash assistance, and dollars spent in various categories (supermarkets or grocery stores, food purchased at other stores, eating out, and carryout/delivered food).

A propensity score could not be computed for school children with a missing value for any of the variables included in the propensity score model, but the matching process retained all SNAP-only participants who were not missing information on a propensity score variable and whose propensity score matches within a caliper of 0.25 could be identified. Among SNAP-only participants, 21 were dropped from the analysis because of missing values in the variables used for calculating a propensity score, and 18 were dropped because no comparison respondents could be identified within a propensity score caliper of 0.25. SNAP plus NSLP participants and income-eligible nonparticipants were matched to SNAP-only participants with replacement—meaning, for instance, the same SNAP plus NSLP participant could have served as a match for multiple SNAP-only participants. There were additional restrictions when matching the three “treatment” groups. Thus, the sample for these analyses was reduced to 668 school children. Table I.1 shows summary statistics for participants and nonparticipants who were in the matched analysis sample; mean characteristics are shown for continuous variables, and sample distributions are presented for categorical variables.

Compared with matched SNAP plus NSLP participants, SNAP-only participants were older, and their families spent more money on groceries (see table I.1). Compared with matched income-eligible nonparticipants, SNAP-only participants had a lower family-poverty-to-annual-income ratio and monthly family income, their families spent less money on groceries, and they were more likely to be U.S. citizens and receive cash assistance.

## 2. Analysis

The study team tested the statistical significance of differences between two pairs of the three groups of school children: SNAP-only participants and SNAP plus NSLP participants, and SNAP-only participants and income-eligible nonparticipants. All tables in this appendix differentiate three levels of statistical significance ( $p < .001$ ,  $.01$ , and  $.05$ ). Measures were selected to facilitate comparisons between the groups on overall diet quality, common indicators of health (e.g., body mass index [BMI]), and nutrients of public health concern. Measures were otherwise limited based on available data or available recommendations. For example, BMI-for-age was the only anthropometric measure examined because the other measures (i.e., waist circumference and waist-to-height ratio) do not have established cutoffs for children’s growth patterns.

## B. Findings

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Overall, SNAP-only participants had similar outcomes for many selected measures when compared with matched SNAP plus NSLP participants and matched income-eligible nonparticipants. Specifically, the three groups were comparable regarding blood pressure (see table I.4), triglycerides (TG) (see table I.7), blood glucose (see table I.8), and hemoglobin status (see table I.9); their total energy intakes were similar (see table I.13), and they consumed a similar percentage of calories from saturated fats (see table I.14). The following subsections present key differences between the groups and additional context on these measures.

## 1. Healthy Eating Index-2015

The Healthy Eating Index (HEI)-2015 assesses adherence to the 2015–2020 Dietary Guidelines for Americans (DGA) and is used to assess overall diet quality. A higher HEI score—for each component and in total—indicates a diet that aligns more closely with the DGA. When interpreting HEI scores, a difference of 5 to 6 points between groups may be meaningful (Kirkpatrick et al., 2018). Key differences between the groups for HEI-2015 included the following:

- ▶ SNAP-only participants had a lower total HEI-2015 score than SNAP plus NSLP participants (49 versus 58 points) and scored lower for four components: greens and beans, dairy, seafood and plant proteins, and added sugars (see table I.2).

## 2. BMI-for-Age

Weight status for children is determined using the Centers for Disease Control and Prevention (CDC) BMI-for-age percentile growth charts, which account for a child’s age and gender. BMI-for-age can be used as a tool to screen for overweight and obesity (CDC, 2018); childhood weight status is of concern because being overweight or obese in childhood has been shown to persist into adulthood (Freedman et al., 2005; Must & Strauss, 1999). Overweight or obesity also increases the chances of developing chronic disease and some types of cancer (U.S. Department of Health and Human Services [HHS], Office of Disease Prevention and Health Promotion, n.d.). Key differences between the groups for BMI-for-age included the following:

- ▶ SNAP-only participants had a lower prevalence of obesity than SNAP plus NSLP participants (19 versus 29 percent; see table I.3).

## 3. High-Density Lipoprotein Cholesterol

High-density lipoprotein (HDL) cholesterol helps remove cholesterol from the bloodstream; high levels of HDL cholesterol can lower risk for heart disease (CDC, 2020). Key differences between the groups for HDL levels included the following:

- ▶ SNAP-only participants had a higher prevalence of normal HDL cholesterol levels than income-eligible nonparticipants (76 versus 61 percent; see table I.5).

## 4. Low-Density Lipoprotein Cholesterol

Excess low-density lipoprotein (LDL) cholesterol can build up on the walls of blood vessels, which causes them to narrow. This narrowing of blood vessels restricts blood flow and increases risk for heart disease (NIH, U.S. National Library of Medicine, 2020). Key differences between the groups for LDL levels included the following:

- ▶ SNAP-only participants had a higher prevalence of normal LDL cholesterol levels than SNAP plus NSLP participants (92 versus 57 percent; see table I.6).

## 5. Vitamin D

Vitamin D can be obtained through the diet and synthesized endogenously through skin exposure to sunlight—making it unique among nutrients. Vitamin D is essential for bone health, and adequate intakes prevent rickets in children and osteomalacia in adults (NIH ODS, 2019b). This study assessed both serum vitamin D (25-hydroxyvitamin D) and dietary intakes of vitamin D. Vitamin D intakes were low but similar across participant groups (see table I.15). Key differences between the groups for vitamin D status included the following:

- ▶ A higher percentage of SNAP-only participants had serum vitamin D concentrations associated with deficiency than SNAP plus NSLP participants (9 versus 2 percent, see table I.10).

## 6. Dietary Fiber

Fiber, a nondigestible carbohydrate found in plants, promotes satiety, regulates blood sugar, and supports cardiovascular and gastrointestinal health (IOM, 2005). The adequate intake (AI) for fiber is 14 grams per 1,000 calories. Key differences between the groups for fiber intakes included the following:

- ▶ SNAP-only participants had lower fiber intakes than SNAP plus NSLP participants (7 versus 8 grams per 1,000 calories; see table I.12).

## 7. Added Sugar

The 2015–2020 DGA recommend consuming less than 10 percent of calories per day from added sugars to achieve a healthy eating style and energy balance. Lower intakes of added sugars are associated with reduced risk for chronic disease (HHS & USDA, 2015). Key differences between the groups for added sugar consumption included the following:

- ▶ SNAP-only participants consumed a greater percentage of calories from added sugars compared with income-eligible nonparticipants on a given day (15 versus 13 percent; see table I.14).

## 8. Calcium

Calcium supports bone structure and is required for muscle function, nerve transmission, and hormonal secretion (NIH ODS, 2020a). Long-term inadequate calcium intakes can lead to osteoporosis. This study assessed dietary intakes of calcium relative to the estimated average requirements (EAR). Key differences between the groups for calcium intakes included the following:

- ▶ A lower percentage of SNAP-only participants had adequate usual intakes<sup>[1]</sup> of calcium than SNAP plus NSLP participants (42 versus 68 percent; see table I.16).

## 9. Iron

Iron is an essential component of hemoglobin, which transports oxygen from the lungs to the body's tissues (NIH ODS, 2020c). Iron is particularly important for children because it is necessary for proper

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<sup>[1]</sup> The proportion of a group with usual intakes equal to or greater than the EAR is an estimate of the prevalence of adequate usual intakes in that group.

growth and neurological development. This study assessed dietary intakes of iron relative to the EAR. Key differences between the groups for iron intakes included the following:

- ▶ A higher percentage of SNAP-only participants had adequate usual intakes of iron than income-eligible nonparticipants (99 versus 92 percent; see table I.17).

## 10. Potassium

Potassium works with sodium to maintain fluid balance within and outside the cells (NIH ODS, 2020d). Insufficient potassium intakes can increase blood pressure and deplete calcium in bones. This study assessed dietary intakes of potassium relative to the AI. Key differences between the groups for potassium intakes included the following:

- ▶ SNAP plus NSLP participants can be assumed to have high levels of nutrient adequacy because their potassium intakes exceeded the AI (101 percent of AI; see table I.18), while no conclusions can be drawn about the adequacy of usual potassium intakes among SNAP-only participants (84 percent of AI).

## 11. Sodium

Sodium works with potassium to maintain fluid balance within and outside the cells (NIH ODS, 2020d). Most Americans overconsume sodium, which increases the risk for high blood pressure and heart disease (CDC, 2017). This study assessed dietary intakes of sodium relative to the chronic disease risk reduction (CDRR)—the intake above which intake reduction is expected to reduce chronic disease risk. Key differences between the groups for sodium intakes included the following:

- ▶ A higher percentage of SNAP-only participants exceeded the CDRR for sodium than income-eligible nonparticipants (95 versus 70 percent; see table I.19).

## C. Supporting Tables

**Table I.1. Characteristics of Sample Included in the SNAP and NSLP Models, Continuous and Categorical Variables**

Characteristic	SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
<b>Continuous Variables</b>						
<b>Sample size (n)</b>	436	–	317	–	159	–
Age in years	10.94	(0.18)	9.62 ***	(0.18)	10.92	(0.29)
Family poverty–annual income ratio	0.69	(0.02)	0.67	(0.02)	0.85 ***	(0.03)
Monthly spending (dollars)						
At supermarket/grocery store	557.93	(16.61)	503.37 *	(17.60)	502.04	(23.86)
On nonfood items	32.43	(3.94)	32.16	(4.07)	37.43	(6.66)
On food at other stores	97.89	(10.73)	105.06	(11.37)	77.52	(13.17)
Eating out	72.06	(5.40)	61.17	(4.33)	89.4	(7.56)
On carryout/delivered foods	33.14	(4.32)	19.99 *	(2.77)	26.3	(5.91)
<b>Categorical Variables</b>						
<b>Sample size (n)</b>	436	–	317	–	159	–
Female	48.9	(0.02)	54.3	(0.03)	50.9	(0.04)
Race/ethnicity						
Mexican American	26.6	(0.02)	21.5 *	(0.02)	28.9	(0.04)
Other Hispanic	13.3	(0.02)	11.7 *	(0.02)	13.8	(0.03)
Hispanic White	11.5	(0.02)	18.3 *	(0.02)	17.6	(0.03)
Non-Hispanic Black	41.3	(0.02)	44.5 *	(0.03)	32.7	(0.04)
Non-Hispanic Asian	2.5	(0.01)	1.9 *	(0.01)	3.8	(0.02)
Other race, multiracial	4.8	(0.01)	2.2 *	(0.01)	3.1	(0.01)
Citizen	95.2	(0.01)	96.2	(0.01)	93.7	(0.02)

Characteristic	SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Mean	Standard Error	Mean	Standard Error	Mean	Standard Error
Number of people in household						
1–2	2.1	(0.01)	3.2	(0.01)	5.0	(0.02)
3–4	32.1	(0.02)	33.8	(0.03)	33.3	(0.04)
5–6	47.5	(0.02)	38.8	(0.03)	43.4	(0.04)
7 or more	18.4	(0.02)	24.3	(0.02)	18.2	(0.03)
Total savings/cash assets for the family						
Less than \$500	92.2	(0.02)	95.1	(0.01)	90.4	(0.01)
\$501–\$1,000	5.1	(0.01)	3.2	(0.01)	3.2	(0.01)
\$1,001+	2.7	(0.03)	1.6	(0.02)	6.4	(0.03)
Receives Supplemental Security Income	16.5	(0.02)	18.6	(0.02)	6.3 **	(0.02)
Receives cash assistance	18.8	(0.02)	20.2	(0.02)	8.2 **	(0.02)
Monthly family income						
\$0–\$799	22.1	(0.02)	23.6	(0.02)	10.4 ***	(0.02)
\$800–\$1,649	48.6	(0.02)	43.0	(0.03)	26.6 ***	(0.04)
\$1,650+	29.3	(0.02)	33.4	(0.03)	63.0 ***	(0.04)

Note: Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences in continuous variables were tested using two-sample  $t$  tests comparing SNAP-only participants with matched SNAP plus NSLP participants and income-eligible nonparticipants. Differences in categorical variables were tested using chi-squared tests comparing SNAP participants with matched SNAP plus NSLP participants and income-eligible nonparticipants, and significance is noted for all levels of a categorical variable with a significant chi-squared test result. SNAP-only participants consist of individuals in households that at the time of data collection reported receiving SNAP benefits. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A).

– denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls and demographic data. Sample includes matched NHANES respondents aged 5–18 with complete day 1 dietary recall data.

**Table 1.2. Healthy Eating Index-2015 Scores for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Component	Maximum Possible HEI Score	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
<b>Sample size</b>	–	912	–	436	–	317	–	159	–
Total fruits	5	2.9	(0.14)	2.6	(0.22)	3.2	(0.26)	2.6	(0.31)
Whole fruits	5	3.6	(0.20)	3.0	(0.34)	3.9	(0.36)	3.1	(0.43)
Total vegetables	5	2.4	(0.09)	2.3	(0.12)	2.7	(0.18)	2.4	(0.23)
Greens and beans	5	1.9	(0.19)	1.4	(0.24)	2.9 **	(0.38)	1.1	(0.28)
Whole grains	10	2.9	(0.17)	2.8	(0.25)	3.1	(0.38)	2.9	(0.39)
Dairy	10	8.9	(0.21)	8.0	(0.34)	9.6 ***	(0.22)	8.2	(0.55)
Total protein foods	5	4.5	(0.11)	4.4	(0.16)	4.6	(0.15)	4.2	(0.27)
Seafood and plant proteins	5	2.8	(0.22)	2.3	(0.25)	3.4 **	(0.36)	2.2	(0.31)
Fatty acids	10	3.2	(0.23)	3.2	(0.31)	3.4	(0.51)	3.5	(0.61)
Refined grains	10	4.1	(0.23)	3.9	(0.35)	4.6	(0.35)	3.8	(0.56)
Sodium	10	4.4	(0.19)	4.5	(0.27)	4.0	(0.36)	4.9	(0.51)
Added sugars	10	5.9	(0.17)	5.5	(0.25)	6.7 **	(0.34)	5.3	(0.44)
Saturated fats	10	5.3	(0.19)	5.4	(0.26)	5.3	(0.40)	5.8	(0.52)
<b>Total HEI-2015 score</b>	100	52.8	(0.92)	49.3	(1.35)	57.5 ***	(1.58)	50.1	(1.86)

Note: Estimates are based on the day 1 dietary recall. Scores are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Mean component scores may not sum to total score because of rounding. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample t tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits.

HEI = Healthy Eating Index

– denotes not applicable

Sources: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls; Food Pattern Equivalents Database 2011–2012, 2013–2014, and 2015–2016. Sample includes NHANES children aged 5–18 with complete day 1 dietary recall data.

**Table 1.3. Body Mass Index-for-Age Categories for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Subgroup	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
<b>Sample size</b>	907	–	435	–	314	–	158	–
Underweight	1.6	(0.44)	1.9	(0.70)	1.4	(0.58)	0.2 *	(0.35)
Normal weight	58.4	(1.71)	62.3	(2.38)	53.2 *	(3.16)	53.5	(3.83)
Overweight	18.1	(1.35)	17.3	(1.85)	16.5	(2.44)	20.6	(3.20)
Obese	21.9	(1.44)	18.6	(1.90)	28.9 **	(3.13)	25.7	(3.25)

Note: Body mass index (BMI)-for-age categories are defined as follows: underweight if BMI-for-age is < the 5th percentile in the Centers for Disease Control and Prevention BMI-for-age growth chart, healthy weight if BMI-for-age is ≥ the 5th and < the 85th percentiles, overweight if BMI-for-age is ≥ the 85th and < the 95th percentiles, and obese if BMI-for-age is ≥ the 95th percentile. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits.

– denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 body measures data. Sample includes NHANES children aged 5–18 with complete day 1 dietary recall, weight, and height data.

**Table I.4. Blood Pressure Categories for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Blood Pressure Categories	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
<b>Sample size</b>	651	–	326	–	207	–	118	–
Normal	88.8	(1.28)	87.4	(1.93)	91.5	(2.30)	88.0	(3.00)
Elevated	7.2	(1.08)	8.7	(1.60)	4.7	(1.74)	6.9	(2.35)
Hypertension stage 1	3.5	(0.69)	3.4	(1.06)	3.5	(1.43)	4.3	(1.88)
Hypertension stage 2	0.6	(0.35)	0.6	(0.47)	0.3	(0.57)	0.8	(0.86)
Hypertensive crisis	0.0	(0.00)	0.0	(0.00)	0.0	(0.00)	0.0	(0.00)

Note: For 8- to 12-year-old children, blood pressure categories are defined according to the National Heart, Lung, and Blood Institute’s pediatric guidelines. Children have elevated blood pressure if blood pressure for age-sex-height is  $\geq$  90th percentile and  $<$  95th percentile or 120/80 to 95th percentile (whichever is lower), hypertension stage 1 if blood pressure for age-sex-height is  $\geq$  95th percentile to  $<$  95th percentile +12 millimeters of mercury (mmHg) or 130/89 mmHg (whichever is lower); hypertension stage 2 if blood pressure for age-sex-height is  $\geq$  95th percentile +12 mmHg or 140/90 mmHg (whichever is lower). For children aged 13+ and adults, blood pressure categories are defined as follows: normal if systolic is  $<$  120 mmHg and diastolic is  $<$  80 mmHg, elevated if systolic is 120–129 mmHg and diastolic is  $<$  80mmHg, hypertension stage 1 if systolic is 130–139 mmHg and diastolic is 80–89 mmHg, hypertension stage 2 if systolic is 140+ mmHg and diastolic is 90+ mmHg, and hypertensive crisis if systolic is  $>$  180 mmHg and diastolic is  $<$  120 mmHg. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. – denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 blood pressure data. Sample includes NHANES children aged 8–18 with complete day 1 dietary recall data and blood biomarker data.

**Table I.5. High-Density Lipoprotein Categories for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Subgroup	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
<b>Sample size</b>	730	–	351	–	249	–	130	–
Normal	71.7	(1.72)	76.3	(2.27)	69.0	(3.56)	61.3 **	(4.20)
Borderline low	16.7	(1.43)	11.5	(1.73)	16.0	(2.68)	30.5 ***	(3.90)
Lower than recommended	11.7	(1.23)	12.3	(1.76)	15.0	(2.80)	8.3	(2.43)

Note: For individuals younger than 20, high-density lipoprotein (HDL) levels are defined according to National Heart, Lung, and Blood Institute guidelines: normal if HDL > 45 mg/dL, borderline low if HDL 40–45 mg/dL, and lower than recommended if HDL < 40 mg/dL. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits.

– denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 blood biomarker data. Sample includes NHANES children aged 6–18 with complete day 1 dietary recall data and blood biomarker data.

**Table I.6. Low-Density Lipoprotein Categories for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Subgroup	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
<b>Sample size</b>	162	–	89	–	41	–	32	–
Normal	78.6	(3.06)	91.9	(2.59)	56.7 ***	(7.65)	84.2	(7.68)
Borderline high	19.4	(2.94)	7.6	(2.47)	39.0 ***	(7.67)	5.9	(4.30)
Higher than recommended	2.0	(1.09)	0.5	(0.75)	4.3	(3.08)	9.9	(6.36)

Note: Low-density lipoprotein (LDL) levels are defined according to National Heart, Lung, and Blood Institute guidelines: normal if LDL is < 110 mg/dL, borderline high if LDL is 110–129 mg/dL, and higher than recommended if LDL is ≥ 130 mg/dL. Values are age adjusted to account for the different age distributions of SNAP participants and nonparticipants. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits.

– denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 blood biomarker data. Sample includes NHANES children aged 12–18 with complete day 1 dietary recall data and blood biomarker data.

**Table I.7. Triglyceride Categories for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Subgroup	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
<b>Sample size</b>	162	–	89	–	41	–	32	–
Normal	73.1	(3.44)	71.2	(4.80)	73.6	(6.04)	77.7	(8.68)
Borderline high	15.8	(2.84)	14.5	(3.75)	17.9	(5.09)	17.0	(8.36)
High	11.1	(2.37)	14.3	(3.60)	8.5	(3.77)	5.3	(3.80)

Note: For individuals aged 12+, triglyceride (TG) levels are defined according to National Heart, Lung, and Blood Institute guidelines: normal if TG is < 150 mg/dL, borderline high if TG is 150–199 mg/dL, and high if TG is ≥ 200 mg/dL. Values are age adjusted to account for the different age distributions of SNAP participants and nonparticipants. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits.

– denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 blood biomarker data. Sample includes NHANES children aged 12–18 with complete day 1 dietary recall data and blood biomarker data.

**Table I.8. Blood Glucose Status for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Subgroup	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
<b>Sample size</b>	170	–	92	–	45	–	33	–
Normal	89.1	(2.38)	88.5	(3.20)	92.3	(3.70)	89.3	(5.15)
Prediabetes	10.6	(2.35)	11.5	(3.20)	6.8	(3.29)	10.7	(5.15)
Diabetes	0.3	(0.44)	0.0	(0.00)	0.9	(1.69)	0.0	(0.00)

Note: Fasting plasma glucose levels are defined according to Centers for Disease Control and Prevention guidelines: normal if < 100 milligrams per deciliter (mg/dL), prediabetes if 100–125 mg/dL, and diabetes if > 125 mg/dL. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits.

– denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 blood biomarker data. Sample includes NHANES children aged 12–18 with complete day 1 dietary recall data and blood biomarker data.

**Table I.9. Hemoglobin Status for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Subgroup	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
<b>Sample size</b>	796	–	380	–	277	–	139	–
Normal	92.6	(0.95)	91.0	(1.46)	95.0	(1.52)	93.0	(2.15)
Low	7.4	(0.95)	9.0	(1.46)	5.0	(1.52)	7.0	(2.15)

Note: For children aged 5–11, hemoglobin levels are defined according to World Health Organization guidelines: normal if  $\geq 115$  g/L and low if  $< 115$  g/L. For children aged 12–14, hemoglobin levels are defined as follows: normal if  $\geq 120$  g/L and low if  $< 120$  g/L. For nonpregnant women aged 15 or older, hemoglobin levels are defined as follows: normal if  $\geq 120$  g/L and low if  $< 120$  g/L. For men aged 15 or older, hemoglobin levels are defined as follows: normal if  $\geq 130$  g/L and low if  $< 130$  g/L. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits.

– denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 blood biomarker data. Sample includes NHANES children aged 5–18 with complete day 1 dietary recall data and blood biomarker data.

**Table I.10. Vitamin D Status for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Subgroup	Matched School Children		SNAP Only		SNAP Plus NSLP		Income-Eligible Nonparticipants	
	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error	Percent	Standard Error
<b>Sample size</b>	540	–	230	–	219	–	91	–
Adequate	69.9	(2.01)	69.8	(2.95)	75.2	(3.37)	59.4	(5.26)
Inadequate	23.4	(1.88)	21.2	(2.67)	22.5	(3.29)	30.4	(5.03)
Associated with deficiency	6.7	(1.13)	9.0	(1.89)	2.3 **	(1.07)	10.2	(3.37)

Note: Serum 25-hydroxyvitamin D levels are defined according to the Institute of Medicine guidelines: adequate if  $\geq 50$  and  $< 125$  nanomoles per liter (nmol/L), inadequate if  $\geq 30$  to  $< 50$  nmol/L, and associated with deficiency if  $< 30$  nmol/L. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits.

– denotes not applicable

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 blood biomarker data. Sample includes NHANES children aged 5–18 with complete day 1 dietary recall data and blood biomarker data.

**Table I.11. Dietary Fiber (Grams): Mean Usual Intakes for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
<b>Mean Usual Intake</b>												
Aged 5–18	912	14.5	(0.37)	436	13.5	(0.52)	317	16.6 ***	(0.74)	159	12.6	(0.64)
<b>Percentage of Children With Mean Usual Intake as a Percentage of Adequate Intake</b>												
Aged 5–18	912	51.2	(1.20)	436	47.6	(1.78)	317	58.7 ***	(2.36)	159	44.3	(2.21)

Note: Adequate intake is the recommended average daily intake level. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Standard errors were estimated using balanced repeated replication to account for complex survey design.

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 and day 2 dietary recall data.

**Table I.12. Dietary Fiber (Grams per 1,000 Calories): Mean Usual Intakes for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipating School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
<b>Mean Usual Intake</b>												
Aged 5–18	912	7.7	(0.14)	436	7.4	(0.21)	317	8.3 **	(0.28)	159	7.3	(0.29)
<b>Percentage of Children With Mean Usual Intake as a Percentage of Adequate Intake</b>												
Aged 5–18	912	55.0	(1.02)	436	52.6	(1.53)	317	59.5 **	(2.02)	159	52.1	(2.04)

Note: Adequate intake is the recommended average daily intake level. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Standard errors were estimated using balanced repeated replication to account for complex survey design.

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 and day 2 dietary recall data.

**Table I.13. Calories: Mean Usual Intakes for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Aged 5–18	912	1,908	(30.5)	436	1,894	(51.5)	317	1,994	(44.9)	159	1,739	(63.0)

Note: Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 and day 2 dietary recall data.

**Table I.14. Saturated Fats and Added Sugars (Percentage of Calorie Intake): Mean Intakes on a Given Day for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
<b>Percentage of Calories From Saturated Fat</b>												
Aged 5–18	911	11.5	(0.16)	435	11.5	(0.26)	317	11.5	(0.29)	159	11.2	(0.35)
<b>Percentage of Calories From Added Sugars</b>												
Aged 5–18	911	14.3	(0.42)	435	15.2	(0.57)	317	13.0 *	(0.73)	159	15.1	(1.01)

Note: The 2015–2020 dietary guidelines recommend consuming less than 10 percent of calories per day from saturated fat and less than 10 percent of calories per day from added sugars. Estimates are based on the day 1 dietary recall. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Values are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 dietary recall data.

**Table I.15. Vitamin D (Micrograms): Mean Usual Intakes for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
<b>Mean Usual Intake</b>												
Aged 5–18	912	5.6	(0.20)	436	5.0	(0.29)	317	6.6 **	(0.42)	159	5.2	(0.49)
<b>Percentage of Children With Usual Intake Greater Than Estimated Average Requirements</b>												
Aged 5–18	912	4.2 u	(1.88)	436	3.5 u	(2.15)	317	8.3 u	(4.41)	159	3.1 u	(5.45)

Note: Estimated average requirement is the average daily nutrient intake level estimated to meet the requirements for half the healthy children in a life stage or gender group. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Totals are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Standard errors were estimated using balanced repeated replication to account for complex survey design. **u** Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 and day 2 dietary recall data.

**Table I.16. Calcium (Milligrams): Mean Usual Intakes for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
<b>Mean Usual Intake</b>												
Aged 5–18	912	1,030	(27.0)	436	958	(41.5)	317	1,184 ***	(53.3)	159	882	(60.1)
<b>Percentage of Children With Usual Intake Greater Than Estimated Average Requirements</b>												
Aged 5–18	912	51.5	(3.66)	436	42.4	(6.54)	317	68.1 *	(9.16)	159	32.5	(8.78)

Note: Estimated average requirement is the average daily nutrient intake level estimated to meet the requirements for half the healthy children in a life stage or gender group. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Totals are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 and day 2 dietary recall data.

**Table I.17. Iron (Milligrams): Mean Usual Intakes for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
<b>Mean Usual Intake</b>												
Aged 5–18	912	14.2	(0.31)	436	14.3	(0.49)	317	14.2	(0.58)	159	13.2	(0.77)
<b>Percentage of Children With Usual Intake Greater Than Estimated Average Requirements</b>												
Aged 5–18	912	97.1	(1.27)	436	99.4	(1.18)	317	96.6	(2.97)	159	91.8 ***	(1.96)

Note: Estimated average requirement is the average daily nutrient intake level estimated to meet the requirements for half the healthy children in a life stage or gender group. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Totals are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 and day 2 dietary recall data.

**Table 1.18. Potassium (Milligrams): Mean Usual Intakes for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
<b>Mean Usual Intake</b>												
Aged 5–18	912	2,193	(42.7)	436	2,069	(67.7)	317	2,468 ***	(77.4)	159	1,948	(89.0)
<b>Mean Usual Intake as a Percentage of Adequate Intake</b>												
Aged 5–18	912	89.5	(1.69)	436	84.1	(2.66)	317	101.1 ***	(3.10)	159	79.4	(3.68)

Note: Adequate intake is the recommended average daily intake level. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Totals are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Standard errors were estimated using balanced repeated replication to account for complex survey design.

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 and day 2 dietary recall data.

**Table I.19. Sodium (Milligrams): Mean Usual Intakes From Foods and Beverages for Matched SNAP-Only, SNAP Plus NSLP, and Income-Eligible Nonparticipant School Children**

Mean Usual Intake	Matched School Children			SNAP Only			SNAP Plus NSLP			Income-Eligible Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
<b>Mean Usual Intake</b>												
Aged 5–18	912	3,061	(60.8)	436	3,020	(97.1)	317	3,220	(103.0)	159	2,707 *	(126.0)
<b>Mean Usual Intake as a Percentage of Adequate Intake</b>												
Aged 5–18	912	249.0	(4.61)	436	244.5	(7.56)	317	262.9	(7.78)	159	221.8	(10.80)
<b>Percentage of Children With Usual Intake Above Chronic Disease Risk Reduction Level</b>												
Aged 5–18	912	94.0	(1.49)	436	94.9	(1.80)	317	97.5	(2.67)	159	70.2 ***	(3.83)

Note: The sodium chronic disease risk reduction is the intake above which intake reduction is expected to reduce chronic disease risk within an apparently healthy population. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements or table salt. Usual intake was estimated using the National Cancer Institute method. Totals are age adjusted to account for the different age distributions of SNAP-only participants, SNAP plus NSLP participants, and nonparticipants. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population. Significant differences in estimates are noted by \*  $p < .05$ , \*\*  $p < .01$ , or \*\*\*  $p < .001$ . Differences were tested using two-sample  $t$  tests comparing SNAP participants with matched SNAP plus NSLP participants or matched income-eligible nonparticipants. SNAP-only participants consist of children in households that at the time of data collection reported receiving SNAP benefits but not NSLP benefits; SNAP plus NSLP participants reported receiving both SNAP and NSLP benefits. Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children aged 5–18 with complete day 1 and day 2 dietary recall data.