

**SCHOOL NUTRITION AND MEAL COST STUDY
VOLUME 4: STUDENT PARTICIPATION, SATISFACTION,
PLATE WASTE, AND DIETARY INTAKES**

APPENDIX I-P

This page has been left blank for double-sided copying.

APPENDIX I

CHAPTER 8 SUPPLEMENTAL TABLES

This page has been left blank for double-sided copying.

TABLES

I.1	Mean Proportion of 24-Hour Nutrient Intakes Contributed by Lunch: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.7
I.2	Mean Nutrients Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants at Lunch, by Main Source of Nonparticipants' Lunch Foods	I.9
I.3	Mean Proportion of 24-Hour Nutrient Intakes Contributed by Lunch: NSLP Participants and Matched Comparison Group of Nonparticipants, by Main Source of Nonparticipants' Lunch Foods	I.11
I.4	Mean Usual Daily Calorie (Energy) Intakes and Estimated Energy Requirements of NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.13
I.5	Estimated Daily Energy Requirements: NSLP Participants and Matched Comparison Group of Nonparticipants	I.14
I.6	Usual Daily Calorie (Energy) Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.17
I.7	Usual Daily Total Fat Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.20
I.8	Usual Daily Total Fat Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.23
I.9	Usual Daily Saturated Fat Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.26
I.10	Usual Daily Saturated Fat Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.29
I.11	Usual Daily Monounsaturated Fat Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.32
I.12	Usual Daily Monounsaturated Fat Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.35
I.13	Usual Daily Polyunsaturated Fat Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.38
I.14	Usual Daily Polyunsaturated Fat Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.41
I.15	Usual Daily Linoleic Acid Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.44
I.16	Usual Daily Linoleic Acid Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.47
I.17	Usual Daily Alpha-Linolenic Acid Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.50
I.18	Usual Daily Alpha-Linolenic Acid Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.53

I.19	Usual Daily Carbohydrate Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.56
I.20	Usual Daily Carbohydrate Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.59
I.21	Usual Daily Protein Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.62
I.22	Usual Daily Protein Intakes Expressed as g per kg Body Weight: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.65
I.23	Usual Daily Vitamin A Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.68
I.24	Usual Daily Vitamin C Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.71
I.25	Usual Daily Vitamin D Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.74
I.26	Usual Daily Vitamin E Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.77
I.27	Usual Daily Vitamin B ₆ Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.80
I.28	Usual Daily Vitamin B ₁₂ Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.83
I.29	Usual Daily Folate Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.86
I.30	Usual Daily Niacin Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.89
I.31	Usual Daily Riboflavin Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.92
I.32	Usual Daily Thiamin Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.95
I.33	Usual Daily Calcium Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.98
I.34	Usual Daily Iron Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.101
I.35	Usual Daily Magnesium Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.104
I.36	Usual Daily Phosphorus Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.107
I.37	Usual Daily Zinc Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.110

I.38	Usual Daily Potassium Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.113
I.39	Usual Daily Sodium Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.116
I.40	Usual Daily Dietary Fiber Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.119
I.41	Usual Daily Dietary Fiber Intakes, Per 1,000 Calories: NSLP Participants and Matched Comparison Group of Nonparticipants.....	I.122
I.42	Usual Daily Cholesterol Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants	I.125
I.43	Percentage of NSLP Participants and Matched Comparison Group of Nonparticipants with Acceptable, Inadequate, or Excessive Usual Daily Nutrient Intakes.....	I.128
I.44	Mean Proportion of 24-Hour Nutrient Intakes Contributed by Lunch: NSLP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level.....	I.131
I.45	Percentage of NSLP Participants and Matched Comparison Group of Nonparticipants with Acceptable, Inadequate, or Excessive Usual Daily Nutrient Intakes, by Household Poverty Level	I.133

This page has been left blank for double-sided copying.

Table I.1. Mean Proportion of 24-Hour Nutrient Intakes Contributed by Lunch: NSLP Participants and Matched Comparison Group of Nonparticipants

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Calories	26.4	30.2*	29.6	30.7	29.4	33.9**	27.8	31.8***
Macronutrients								
Total Fat	25.0	28.7	28.8	32.1	28.8	35.5***	26.6	32.1***
Saturated Fat	23.6	27.3	26.6	29.0	26.6	33.7***	24.9	30.2***
Monounsaturated Fat	24.6	28.6	28.8	32.7	28.8	35.1**	26.4	32.2***
Polyunsaturated Fat	29.4	31.1	35.2	37.5	33.6	38.8*	31.5	35.6**
Linoleic acid	29.6	31.3	35.4	38.0	33.7	39.2*	31.7	36.0**
Alpha-linolenic acid	30.2	30.0	36.0	34.6	34.2	36.3	32.2	32.7
Carbohydrate	26.6	31.3*	30.2	30.5	30.4	33.3	28.2	31.8**
Protein	31.7	28.5	34.0	30.5	32.4	34.0	32.3	31.4
Vitamins								
Vitamin A	30.2	19.4***	28.4	22.7	29.6	27.5	29.7	22.5***
Vitamin C	29.2	31.1	31.2	26.6	29.3	31.3	29.6	31.5
Vitamin D	40.0	27.8***	42.6	25.3***	37.4	29.9	39.9	26.9***
Vitamin E	26.8	33.8**	30.8	35.6	31.4	35.4	28.7	35.4***
Vitamin B ₆	26.0	22.6	27.1	26.0	28.8	30.8	26.9	26.3
Vitamin B ₁₂	29.2	20.0***	27.2	20.8*	29.0	29.4	28.7	22.1***
Folate	21.1	22.9	22.9	24.4	24.2	30.0**	22.2	26.1**
Niacin	25.6	28.0	29.2	31.1	29.6	34.6*	27.3	31.5**
Riboflavin	29.4	25.8*	30.4	25.9*	29.7	31.5	29.7	27.0*
Thiamin	26.1	27.5	28.6	28.8	29.0	32.6*	27.3	29.8*
Minerals								
Calcium	33.4	31.0	33.8	30.0	33.6	32.7	33.5	31.2
Iron	23.7	25.9	26.2	27.5	27.7	31.6	25.1	28.3*
Magnesium	32.4	31.0	35.8	31.1*	34.5	33.1	33.6	32.0
Phosphorus	32.4	29.2*	33.7	29.6*	32.9	32.8	32.7	30.4*
Potassium	31.8	30.0	34.4	29.3**	33.7	32.3	32.8	30.8*
Sodium	27.0	28.8	29.9	30.9	30.3	35.5*	28.4	32.3**
Zinc	29.8	25.5*	30.8	27.6	31.0	31.8	30.3	28.2

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Other Dietary Components								
Dietary Fiber	34.6	34.0	39.1	36.1	39.1	36.7	36.5	35.5
Cholesterol	26.5	20.7*	28.9	24.9	26.4	31.8	27.0	25.6
Number of Students	540	204	406	277	308	362	1,254	843

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls, Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lunch intakes for both NSLP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at lunch. For NSLP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable lunch, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

NSLP = National School Lunch Program.

Table I.2. Mean Nutrients Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants at Lunch, by Main Source of Nonparticipants' Lunch Foods

	Mean Lunch Intakes			
	Participants	Nonparticipants		
		More Than Half of Lunch Foods Obtained from Home	More Than Half of Lunch Foods Obtained Outside of School	More Than Half of Lunch Foods Obtained at School
Calories (kcal)	515	696	764	501
Macronutrients				
Total Fat (g)	17	26	30	17
Saturated Fat (g)	5	8	11	5
Monounsaturated Fat (g)	6	9	10	6
Polyunsaturated Fat (g)	5	7	7	5
Linoleic acid (g)	4	6	6	5
Alpha-linolenic acid (g)	0.4	0.5	0.6	0.5
Carbohydrate (g)	71	96	96	66
Protein (g)	23	23	28	25
Macronutrients: Percentage of Calories				
Total Fat	28.0	31.7	36.3	28.0
Saturated Fat	8.7	9.7	12.8	8.2
Monounsaturated Fat	9.5	10.9	12.1	9.8
Polyunsaturated Fat	8.2	8.7	8.3	8.6
Linoleic acid	7.3	7.9	7.4	7.6
Alpha-linolenic acid	0.7	0.6	0.7	0.8
Carbohydrate	55.5	56.3	49.5	55.4
Protein	19.0	13.5	15.1	19.1
Vitamins				
Vitamin A (mcg RAE)	163	144	102	174
Vitamin C (mg)	20	24	16	21
Vitamin D (mcg)	4.5	1.2 ^	1.8 ^	3.4
Vitamin E (mg AT)	1.9	3.3	2.0	1.8
Vitamin B ₆ (mg)	0.5	0.6	0.5	0.5
Vitamin B ₁₂ (mcg)	1.3	1.0	1.1	1.1
Folate (mcg DFE)	99	160	125	87
Niacin (mg)	6	8	8	7
Riboflavin (mg)	0.6	0.6	0.5	0.5
Thiamin (mg)	0.4	0.5	0.4	0.4

	Mean Lunch Intakes			
	Participants	Nonparticipants		
		More Than Half of Lunch Foods Obtained from Home	More Than Half of Lunch Foods Obtained Outside of School	More Than Half of Lunch Foods Obtained at School
Minerals				
Calcium (mg)	361	328	351	313
Iron (mg)	3.3	4.6	4.3	3.2
Magnesium (mg)	89	91	71	84
Phosphorus (mg)	444	411	451	420
Potassium (mg)	772	748	675	732
Sodium (mg)	833	1,152	1,314	790
Zinc (mg)	3.1	2.9	3.4	2.8
Other Dietary Components				
Dietary Fiber (g)	6	6	5	6
Dietary Fiber Density (g/1,000 calories)	12	10	7	13
Cholesterol (mg)	46	45	78	50
Number of Students	1,254	529	78	189

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lunch intakes for both NSLP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at lunch. For NSLP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable lunch, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

Subgroups of nonparticipants were defined based on the main source of their lunch foods, as reported in 24-hour dietary recalls. Nonparticipants who obtained more than half of their lunch foods at school may have consumed components of a reimbursable lunch and/or competitive foods.

Forty-seven nonparticipants did not obtain at least half of their lunch foods from one of the three defined source groups (home, outside of school, or at school). This subgroup of nonparticipants is excluded from the tabulation because the sample size was too small to produce reliable estimates.

Differences between participants and subgroups of matched nonparticipants were not tested for statistical significance.

AT = alpha-tocopherol; DFE = dietary folate equivalents; NSLP = National School Lunch Program; RAE = retinol activity equivalents.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.3. Mean Proportion of 24-Hour Nutrient Intakes Contributed by Lunch: NSLP Participants and Matched Comparison Group of Nonparticipants, by Main Source of Nonparticipants' Lunch Foods

	Mean Proportion of 24-Hour Intakes			
	Participants	Nonparticipants		
		More Than Half of Lunch Foods Obtained from Home	More Than Half of Lunch Foods Obtained Outside of School	More Than Half of Lunch Foods Obtained at School
Calories	27.8	33.1	40.2	27.2
Macronutrients				
Total Fat	26.6	33.6	43.1	26.5
Saturated Fat	24.9	31.0	41.8	25.9
Monounsaturated Fat	26.4	33.6	43.1	27.0
Polyunsaturated Fat	31.5	37.6	42.9	29.2
Linoleic acid	31.7	38.3	43.3	29.1
Alpha-linolenic acid	32.2	32.0	41.7	32.9
Carbohydrate	28.2	33.6	37.9	26.9
Protein	32.3	30.6	39.0	32.0
Vitamins				
Vitamin A	29.7	19.5	27.0	29.5
Vitamin C	29.6	31.0	29.6	33.9
Vitamin D	39.9	23.1	22.8 ^	39.6
Vitamin E	28.7	39.0	34.7	27.6
Vitamin B ₆	26.9	26.5	31.3	25.7
Vitamin B ₁₂	28.7	18.6	32.7	28.7
Folate	22.2	26.8	33.0	22.2
Niacin	27.3	32.8	37.6	27.2
Riboflavin	29.7	26.2	30.9	28.9
Thiamin	27.3	30.8	32.9	27.1
Minerals				
Calcium	33.5	31.0	33.5	32.6
Iron	25.1	28.7	36.8	25.6
Magnesium	33.6	32.1	33.0	32.6
Phosphorus	32.7	29.7	36.0	31.9
Potassium	32.8	31.4	33.3	30.1
Sodium	28.4	34.0	40.5	27.1
Zinc	30.3	27.0	37.8	29.1

		Mean Proportion of 24-Hour Intakes		
		Nonparticipants		
	Participants	More Than Half of Lunch Foods Obtained from Home	More Than Half of Lunch Foods Obtained Outside of School	More Than Half of Lunch Foods Obtained at School
Other Dietary Components				
Dietary Fiber	36.5	35.0	38.8	37.5
Cholesterol	27.0	22.9	38.7	28.2
Number of Students	1,254	529	78	189

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014–2015. Tabulations are weighted to be representative of all students in public, non–charter schools offering the National School Lunch Program. Sample excludes students who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lunch intakes for both NSLP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at lunch. For NSLP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable lunch, foods and beverages obtained from non–reimbursable sources at school, from home, and/or from other sources outside of school.

Subgroups of nonparticipants were defined based on the main source of their lunch foods, as reported in 24-hour dietary recalls. Nonparticipants who obtained more than half of their lunch foods at school may have consumed components of a reimbursable lunch and/or competitive foods.

Forty-seven nonparticipants did not obtain at least half of their lunch foods from one of the three defined source groups (home, outside of school, or at school). This subgroup of nonparticipants is excluded from the tabulation because the sample size was too small to produce reliable estimates.

Differences between participants and subgroups of matched nonparticipants were not tested for statistical significance.

NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.4. Mean Usual Daily Calorie (Energy) Intakes and Estimated Energy Requirements of NSLP Participants and Matched Comparison Group of Nonparticipants

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Mean Daily Calorie Intake (kcal)	1,942	1,861	1,829	1,839	2,133	2,072	1,950	1,982
Mean EER (kcal) ^a	2,181	2,094	2,487	2,413	2,700	2,713	2,363	2,356
Number of Students	540	208	406	308	308	395	1,254	911

Source: School Nutrition and Meal Cost Study, Child/Youth Interview, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual calorie intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

^aEstimated Energy Requirements (EERs) were estimated based on age, gender, height, and weight, and assumed an “active” physical activity level for children ages 6 to 10 years and a “low active” level for children 11 years and older (IOM 2010). EER estimates exclude children who did not have valid data for height and/or weight.

None of the difference between participants and the matched comparison group of nonparticipants are significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

EER = Estimated Energy Requirement; NCI = National Cancer Institute; NSLP = National School Lunch Program.

Table I.5. Estimated Daily Energy Requirements: NSLP Participants and Matched Comparison Group of Nonparticipants

	Estimated Energy Requirements (EERs) ^a (kcal)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^b										
NSLP participants	233	2,010	27.6	1,634 ^	1,693	1,800	1,931	2,106	2,397	2,804 ^
NSLP nonparticipants	93	1,956	28.0	1,698 ^	1,738 ^	1,798	1,936	2,066	2,230 ^	2,288 ^
9 to 13 Years										
NSLP participants	573	2,354	28.5	1,823	1,905	2,003	2,219	2,609	3,053	3,375
NSLP nonparticipants	327	2,292	38.3	1,804 ^	1,898	2,001	2,202	2,452	2,811	3,201 ^
9 to 13 Years, Male										
NSLP participants	324	2,563	40.7	1,906 ^	1,970	2,122	2,422	2,907	3,326	3,560 ^
NSLP nonparticipants	147	2,498	55.7	1,841 ^	1,971 ^	2,199	2,433	2,757	3,219 ^	3,297 ^
9 to 13 Years, Female										
NSLP participants	249	2,121	22.8	1,763 ^	1,858	1,961	2,090	2,237	2,442	2,662 ^
NSLP nonparticipants	180	2,098	27.7	1,789 ^	1,844 ^	1,954	2,072	2,211	2,359 ^	2,594 ^
14 to 18 Years ^c										
NSLP participants	376	2,708	41.4	1,928 ^	1,992	2,194	2,605	3,123	3,569	3,881 ^
NSLP nonparticipants	441	2,686	48.2	1,943	2,021	2,171	2,527	3,013	3,614	4,002
14 to 18 Years, Male ^c										
NSLP participants	222	3,104	47.2	2,310 ^	2,502	2,663	3,018	3,423	3,853	4,346 ^
NSLP nonparticipants	217	3,078	55.3	2,302 ^	2,396	2,680	2,943	3,425	3,974	4,218 ^
14 to 18 Years, Female ^c										
NSLP participants	154	2,147	22.2	1,803 ^	1,914 ^	2,002	2,136	2,269	2,367 ^	2,487 ^
NSLP nonparticipants	224	2,172	16.8	1,840 ^	1,926	2,028	2,156	2,270	2,405	2,577 ^
All Students										
NSLP participants	1,182	2,363	23.8	1,742	1,809	1,967	2,191	2,658	3,174	3,520
NSLP nonparticipants	861	2,356	28.3	1,759	1,831	1,967	2,200	2,571	3,117	3,449
All Students, Male										
NSLP participants	659	2,637	32.4	1,829	1,925	2,112	2,566	3,034	3,467	3,695
NSLP nonparticipants	405	2,626	47.5	1,806	1,924	2,174	2,513	2,971	3,426	3,865
All Students, Female										
NSLP participants	523	2,049	15.2	1,688	1,750	1,883	2,019	2,203	2,352	2,505
NSLP nonparticipants	456	2,074	18.7	1,745	1,796	1,928	2,059	2,206	2,358	2,497

	Estimated Energy Requirements (EERs) ^a (kcal)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	509	2,181	33.9	1,683	1,752	1,890	2,075	2,331	2,823	3,127
NSLP nonparticipants	196	2,094	29.1	1,739 ^	1,767 ^	1,930	2,016	2,211	2,449 ^	2,531 ^
Elementary School Students, Male										
NSLP participants	265	2,359	51.8	1,767 ^	1,848	2,004	2,197	2,639	3,109	3,386 ^
NSLP nonparticipants	86	2,216	54.3	1,729 ^	1,856 ^	1,929	2,169	2,393	2,546 ^	3,031 ^
Elementary School Students, Female										
NSLP participants	244	1,997	18.7	1,628 ^	1,712	1,810	1,968	2,125	2,323	2,485 ^
NSLP nonparticipants	110	2,004	26.0	1,739 ^	1,759 ^	1,914	1,982	2,080	2,211 ^	2,357 ^
Middle School Students										
NSLP participants	386	2,487	40.4	1,837 ^	1,912	2,059	2,337	2,789	3,195	3,564 ^
NSLP nonparticipants	288	2,413	51.5	1,762 ^	1,840	2,060	2,336	2,682	3,036	3,273 ^
Middle School Students, Male										
NSLP participants	228	2,781	55.6	1,935 ^	2,050	2,360	2,713	3,093	3,506	3,893 ^
NSLP nonparticipants	134	2,630	58.0	1,835 ^	2,049 ^	2,326	2,579	2,921	3,262 ^	3,276 ^
Middle School Students, Female										
NSLP participants	158	2,112	25.1	1,782 ^	1,860 ^	1,946	2,094	2,235	2,391 ^	2,499 ^
NSLP nonparticipants	154	2,109	34.9	1,738 ^	1,801 ^	1,906	2,101	2,256	2,436 ^	2,627 ^
High School Students										
NSLP participants	287	2,700	47.1	1,918 ^	1,986	2,182	2,610	3,113	3,583	3,861 ^
NSLP nonparticipants	377	2,713	55.7	1,927 ^	2,024	2,169	2,569	3,105	3,706	4,004 ^
High School Students, Male										
NSLP participants	166	3,112	54.7	2,309 ^	2,485 ^	2,693	3,019	3,450	3,836 ^	4,347 ^
NSLP nonparticipants	185	3,147	60.4	2,396 ^	2,475 ^	2,746	3,002	3,562	4,000 ^	4,208 ^
High School Students, Female										
NSLP participants	121	2,139	26.5	1,790 ^	1,898 ^	1,991	2,119	2,245	2,383 ^	2,504 ^
NSLP nonparticipants	192	2,164	16.5	1,836 ^	1,913 ^	2,028	2,134	2,270	2,393 ^	2,550 ^

Source: School Nutrition and Meal Cost Study, Child/Youth Interview, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Note: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

^aEstimated Energy Requirements (EERs) were estimated based on age, gender, height, and weight, and assumed an “active” physical activity level for children ages 6 to 10 years and a “low active” level for children 11 years and older (IOM 2010). EER estimates exclude children who did not have valid data for height and/or weight.

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; EER = Estimated Energy Requirement; N = number (sample size); NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.6. Usual Daily Calorie (Energy) Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Calorie Intakes (kcal)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	259	1,901	36.5	1,315 ^	1,421	1,615	1,862	2,140	2,426	2,624 ^
NSLP nonparticipants	100	1,810	73.9	1,379 ^	1,472 ^	1,620	1,801	1,989	2,166 ^	2,271 ^
9 to 13 Years										
NSLP participants	594	1,921	54.9	1,381	1,480	1,664	1,892	2,145	2,402	2,567
NSLP nonparticipants	345	2,005	98.9	1,053 ^	1,227	1,549	1,946	2,398	2,857	3,152 ^
9 to 13 Years, Male										
NSLP participants	336	2,020	58.5	1,471 ^	1,579	1,768	2,000	2,247	2,488	2,645 ^
NSLP nonparticipants	158	2,065	75.9	1,519 ^	1,625 ^	1,819	2,054	2,292	2,523 ^	2,669 ^
9 to 13 Years, Female										
NSLP participants	258	1,806	77.4	1,274 ^	1,371	1,552	1,772	2,024	2,281	2,458 ^
NSLP nonparticipants	187	1,959	197.0	829 ^	1,022 ^	1,388	1,867	2,427	3,010 ^	3,415 ^
14 to 18 Years ^b										
NSLP participants	401	2,090	82.2	1,139	1,291	1,580	1,981	2,479	3,030	3,419
NSLP nonparticipants	466	2,061	70.9	1,081	1,244	1,557	1,978	2,465	2,992	3,344
14 to 18 Years, Male ^b										
NSLP participants	230	2,367	121.0	1,307 ^	1,477	1,808	2,246	2,796	3,408	3,833 ^
NSLP nonparticipants	229	2,314	129.5	1,268 ^	1,464	1,805	2,243	2,748	3,263	3,604 ^
14 to 18 Years, Female ^b										
NSLP participants	171	1,746	64.5	1,008 ^	1,139 ^	1,370	1,685	2,052	2,444 ^	2,712 ^
NSLP nonparticipants	237	1,733	73.0	999 ^	1,127	1,370	1,679	2,031	2,410	2,674 ^
All Students										
NSLP participants	1,254	1,950	36.6	1,343	1,450	1,651	1,907	2,200	2,504	2,706
NSLP nonparticipants	911	1,982	45.1	1,104	1,255	1,548	1,922	2,348	2,784	3,069
All Students, Male										
NSLP participants	694	2,079	47.7	1,414	1,532	1,752	2,031	2,352	2,687	2,904
NSLP nonparticipants	431	2,099	54.3	1,295	1,441	1,715	2,060	2,433	2,805	3,058
All Students, Female										
NSLP participants	560	1,803	43.2	1,283	1,378	1,553	1,773	2,015	2,265	2,434
NSLP nonparticipants	480	1,853	92.4	978	1,126	1,417	1,795	2,212	2,662	2,940

	Calorie Intakes (kcal)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	1,942	38.4	1,348	1,455	1,652	1,904	2,185	2,479	2,675
NSLP nonparticipants	208	1,861	119.2	979 ^	1,143	1,437	1,810	2,228	2,642	2,924 ^
Elementary School Students, Male										
NSLP participants	282	2,000	43.0	1,386 ^	1,500	1,702	1,956	2,252	2,561	2,756 ^
NSLP nonparticipants	94	1,853	115.5	1,149 ^	1,294 ^	1,526	1,815	2,146	2,463 ^	2,680 ^
Elementary School Students, Female										
NSLP participants	258	1,870	49.6	1,350 ^	1,446	1,624	1,842	2,082	2,326	2,491 ^
NSLP nonparticipants	114	1,894	173.9	939 ^	1,119 ^	1,430	1,822	2,281	2,766 ^	3,076 ^
Middle School Students										
NSLP participants	406	1,829	49.7	1,275	1,376	1,560	1,794	2,057	2,332	2,518
NSLP nonparticipants	308	1,839	50.0	1,038 ^	1,193	1,468	1,803	2,169	2,531	2,769 ^
Middle School Students, Male										
NSLP participants	239	2,005	71.8	1,452 ^	1,557	1,746	1,976	2,232	2,487	2,666 ^
NSLP nonparticipants	144	1,988	74.7	1,193 ^	1,353 ^	1,635	1,959	2,309	2,657 ^	2,904 ^
Middle School Students, Female										
NSLP participants	167	1,625	47.7	1,165 ^	1,254 ^	1,404	1,596	1,812	2,037 ^	2,182 ^
NSLP nonparticipants	164	1,647	62.3	928 ^	1,040 ^	1,274	1,579	1,938	2,337 ^	2,626 ^
High School Students										
NSLP participants	308	2,133	97.6	1,127 ^	1,286	1,594	2,019	2,533	3,118	3,547 ^
NSLP nonparticipants	395	2,072	83.5	1,098 ^	1,265	1,570	1,990	2,477	2,992	3,338 ^
High School Students, Male										
NSLP participants	173	2,430	134.2	1,317 ^	1,499 ^	1,836	2,302	2,881	3,532 ^	4,007 ^
NSLP nonparticipants	193	2,331	134.8	1,228 ^	1,431 ^	1,785	2,251	2,804	3,347 ^	3,728 ^
High School Students, Female										
NSLP participants	135	1,781	74.4	1,019 ^	1,144 ^	1,378	1,709	2,100	2,518 ^	2,814 ^
NSLP nonparticipants	202	1,779	71.5	1,061 ^	1,192	1,429	1,725	2,073	2,443	2,679 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.7. Usual Daily Total Fat Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

Percentage of Calories from Total Fat											AMDR = 25-35% of calories					
Percentiles																
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years ^a																
NSLP participants	259	29.7	0.46	24.5 ^	25.7	27.5	29.7	31.8	33.8	35.1 ^	88.1	5.44	6.7 ^	3.79	5.2 ^	2.50
NSLP nonparticipants	100	31.1	0.82	24.8 ^	26.2 ^	28.7	31.2	33.7	36.0 ^	37.3 ^	79.4	6.79	5.3 ^	3.47	15.2 ^	6.25
9 to 13 Years																
NSLP participants	594	31.6	0.25	26.6	27.6	29.5	31.6	33.7	35.7	36.8	84.5	5.49	<3	1.57	14.0	4.24
NSLP nonparticipants	345	30.6	0.79	23.5 ^	25.1	27.8	30.6	33.5	36.1	37.7 ^	74.5	8.98	9.7	4.63	15.7	6.72
9 to 13 Years, Male																
NSLP participants	336	31.3	0.41	26.6 ^	27.6	29.3	31.3	33.2	35.0	36.1 ^	88.8	9.95	<3	2.50	9.8	7.93
NSLP nonparticipants	158	30.5	0.69	25.3 ^	26.3 ^	28.2	30.5	32.7	34.8 ^	36.1 ^	86.7	8.16	4.2 ^	4.36	9.1 ^	4.73
9 to 13 Years, Female																
NSLP participants	258	32.0	0.40	26.5 ^	27.6	29.7	31.9	34.2	36.4	37.7 ^	79.8	6.89	<3	1.90	18.5	5.93
NSLP nonparticipants	187	30.9	1.32	22.0 ^	24.1 ^	27.5	31.0	34.4	37.4 ^	39.3 ^	65.5	17.22	13.1	7.75	21.4	12.98
14 to 18 Years ^b																
NSLP participants	401	32.0	0.41	23.6	25.4	28.4	31.9	35.4	38.6	40.6	64.1	8.97	8.4	3.98	27.5	5.74
NSLP nonparticipants	466	32.5	0.46	26.6	27.9	30.1	32.5	34.9	37.1	38.4	74.6	11.76	<3	2.16	23.7	10.62
14 to 18 Years, Male ^b																
NSLP participants	230	32.4	0.63	23.1 ^	25.1	28.5	32.3	36.2	39.8	42.0 ^	58.9	6.78	9.6	3.69	31.5	4.99
NSLP nonparticipants	229	31.7	0.53	25.0 ^	26.6	28.9	31.6	34.4	36.9	38.5 ^	74.8	5.89	4.8 ^	2.78	20.5	4.59
14 to 18 Years, Female ^b																
NSLP participants	171	31.5	0.63	25.3 ^	26.7 ^	28.9	31.5	34.0	36.3 ^	37.7 ^	78.5	23.16	4.2 ^	7.19	17.3	17.05
NSLP nonparticipants	235	33.5	0.75	27.2 ^	28.6	31.0	33.6	36.0	38.2	39.5 ^	63.7	13.13	<3	1.79	34.9	12.56
All Students																
NSLP participants	1,254	31.2	0.24	25.7	26.8	28.8	31.1	33.4	35.5	36.8	83.9	5.29	3.3	2.09	12.9	3.53
NSLP nonparticipants	911	31.4	0.47	25.1	26.5	28.8	31.4	33.9	36.3	37.6	78.4	8.02	4.6	2.59	17.0	6.28
All Students, Male																
NSLP participants	694	31.1	0.37	25.0	26.3	28.5	31.0	33.5	35.9	37.3	80.6	7.52	4.9	3.22	14.5	4.91
NSLP nonparticipants	431	31.0	0.52	24.5	25.9	28.2	31.0	33.7	36.1	37.7	77.6	6.08	6.5	3.54	15.9	3.80

	Percentage of Calories from Total Fat										AMDR = 25-35% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
All Students, Female																
NSLP participants	560	31.3	0.32	26.5	27.5	29.3	31.3	33.2	35.0	36.1	88.7	9.68	<3	2.76	9.8	7.55
NSLP nonparticipants	478	31.7	0.64	25.3	26.8	29.2	31.8	34.4	36.6	37.9	76.0	17.37	4.2	3.80	19.8	14.23
By School Type and Gender																
Elementary School Students																
NSLP participants	540	30.6	0.36	25.6	26.7	28.5	30.6	32.7	34.6	35.7	88.8	7.45	3.3 ^	3.25	7.9	4.67
NSLP nonparticipants	208	30.9	0.89	24.3 ^	25.9	28.4	31.0	33.6	35.8	37.2 ^	78.6	20.36	6.8 ^	8.13	14.6	13.43
Elementary School Students, Male																
NSLP participants	282	30.2	0.46	25.0 ^	26.1	28.1	30.2	32.4	34.3	35.5 ^	88.3	10.37	5.0 ^	5.22	6.7 ^	5.64
NSLP nonparticipants	94	30.7	1.37	21.4 ^	23.5 ^	26.8	30.5	34.5	38.1 ^	40.4 ^	61.4	19.89	16.0 ^	11.69	22.5	11.66
Elementary School Students, Female																
NSLP participants	258	31.1	0.48	26.5 ^	27.4	29.1	31.1	33.0	34.7	35.8 ^	90.1	9.44	<3	3.33	8.4	6.94
NSLP nonparticipants	114	31.3	0.94	25.6 ^	27.0 ^	29.1	31.4	33.5	35.5 ^	36.6 ^	82.9 ^	18.61	3.8 ^	5.67	13.3 ^	13.96
Middle School Students																
NSLP participants	406	31.9	0.36	26.6	27.7	29.7	31.9	34.2	36.2	37.5	80.3	5.65	<3	1.16	18.1	4.87
NSLP nonparticipants	308	30.6	0.62	26.0 ^	27.0	28.7	30.6	32.5	34.3	35.4 ^	91.0	9.20	<3	3.24	6.6	6.50
Middle School Students, Male																
NSLP participants	239	31.4	0.55	25.5 ^	26.8	28.9	31.4	33.7	35.9	37.3 ^	81.1	7.49	3.6 ^	2.74	15.3	5.81
NSLP nonparticipants	144	30.5	0.64	25.7 ^	26.7 ^	28.5	30.4	32.4	34.4 ^	35.7 ^	90.2 ^	10.88	<3	5.01	7.1 ^	6.68
Middle School Students, Female																
NSLP participants	167	32.6	0.54	27.9 ^	29.0 ^	30.6	32.5	34.5	36.2 ^	37.3 ^	80.3	10.02	<3	1.03	19.3	9.45
NSLP nonparticipants	164	31.0	0.93	25.7 ^	27.0 ^	28.9	31.1	33.2	35.0 ^	36.0 ^	86.8	14.86	3.2 ^	4.87	10.0 ^	11.49
High School Students																
NSLP participants	308	31.8	0.50	22.2 ^	24.3	27.8	31.8	35.7	39.3	41.6 ^	59.0	7.19	12.3	3.34	28.8	4.95
NSLP nonparticipants	395	32.2	0.51	26.9 ^	28.1	30.0	32.2	34.4	36.4	37.6 ^	79.7	11.46	<3	2.58	19.2	9.94

	Percentage of Calories from Total Fat										AMDR = 25-35% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
High School Students, Male																
NSLP participants	173	32.8	0.72	22.6 ^	24.9 ^	28.5	32.7	36.9	40.8 ^	43.3 ^	54.4	6.25	10.1 ^	4.20	35.4	5.07
NSLP nonparticipants	193	31.8	0.70	25.5 ^	26.9 ^	29.1	31.7	34.5	37.0 ^	38.6 ^	74.9	10.07	3.8 ^	3.18	21.3	8.42
High School Students, Female																
NSLP participants	135	30.7	0.72	22.7 ^	24.4 ^	27.3	30.7	34.1	37.2 ^	39.2 ^	68.0	20.48	12.6 ^	8.59	19.3	12.82
NSLP nonparticipants	200	32.9	0.71	27.6 ^	28.9	30.8	32.9	35.0	36.8 ^	37.9 ^	74.8	17.21	<3	2.17	24.5	16.14

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of acceptable usual daily intakes, the AMDR for males and females 19 to 30 years was used for these students (20 to 35 percent of calories for both groups).

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.8. Usual Daily Total Fat Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Total Fat Intakes (g)									
	Percentiles									
	N	Mean	SE	5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	259	64	1.5	40 ^	44	52	62	74	87	95 ^
NSLP nonparticipants	100	66	4.0	36 ^	42 ^	52	64	78	92 ^	100 ^
9 to 13 Years										
NSLP participants	594	69	2.2	47	51	58	68	78	88	95
NSLP nonparticipants	345	70	5.2	30 ^	36	49	66	87	109	124 ^
9 to 13 Years, Male										
NSLP participants	336	72	2.6	51 ^	55	62	71	80	89	95 ^
NSLP nonparticipants	158	70	3.1	50 ^	54 ^	61	69	79	88 ^	94 ^
9 to 13 Years, Female										
NSLP participants	258	65	3.1	40 ^	45	53	63	75	88	98 ^
NSLP nonparticipants	187	71	10.4	20 ^	27 ^	43	64	92	122 ^	143 ^
14 to 18 Years ^b										
NSLP participants	401	77	3.6	34	40	52	70	93	121	142
NSLP nonparticipants	466	76	2.4	41	47	58	73	90	108	121
14 to 18 Years, Male ^b										
NSLP participants	230	89	5.6	38 ^	45	59	80	108	142	167 ^
NSLP nonparticipants	229	84	4.7	46 ^	53	65	81	99	119	131 ^
14 to 18 Years, Female ^b										
NSLP participants	171	62	3.0	32 ^	37 ^	46	59	74	92 ^	104 ^
NSLP nonparticipants	237	66	3.1	39 ^	44	53	64	76	90	99 ^
All Students										
NSLP participants	1,254	69	1.5	43	47	56	67	80	94	104
NSLP nonparticipants	911	71	2.4	34	40	52	68	87	107	120
All Students, Male										
NSLP participants	694	74	2.2	44	49	59	71	86	101	112
NSLP nonparticipants	431	74	2.1	43	48	59	72	87	102	113
All Students, Female										
NSLP participants	560	64	1.8	40	44	52	62	73	85	94
NSLP nonparticipants	480	68	4.7	28	34	47	64	84	106	120

	Total Fat Intakes (g)									
	Percentiles									
	N	Mean	SE	5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	67	1.7	48	51	58	66	74	83	88
NSLP nonparticipants	208	67	5.7	25 ^	32	45	63	84	106	121 ^
Elementary School Students, Male										
NSLP participants	282	67	1.9	49 ^	52	59	66	74	82	87 ^
NSLP nonparticipants	94	66	5.6	30 ^	37 ^	48	63	80	98 ^	110 ^
Elementary School Students, Female										
NSLP participants	258	66	2.3	45 ^	49	56	65	75	85	91 ^
NSLP nonparticipants	114	69	8.2	24 ^	32 ^	45	64	87	112 ^	129 ^
Middle School Students										
NSLP participants	406	66	2.0	41	45	54	64	77	90	99
NSLP nonparticipants	308	63	2.2	37 ^	42	51	62	74	87	95 ^
Middle School Students, Male										
NSLP participants	239	71	3.2	44 ^	49	58	69	82	95	105 ^
NSLP nonparticipants	144	68	3.1	42 ^	47 ^	56	66	78	91 ^	100 ^
Middle School Students, Female										
NSLP participants	167	59	1.7	41 ^	45 ^	51	58	66	75 ^	80 ^
NSLP nonparticipants	164	58	3.0	34 ^	38 ^	46	56	67	79 ^	88 ^
High School Students										
NSLP participants	308	78	4.2	32 ^	38	51	70	96	127	152 ^
NSLP nonparticipants	395	76	2.8	43 ^	49	59	73	90	106	118 ^
High School Students, Male										
NSLP participants	173	92	6.0	38 ^	46 ^	61	83	113	150 ^	178 ^
NSLP nonparticipants	193	85	4.9	46 ^	53 ^	65	81	101	121 ^	136 ^
High School Students, Female										
NSLP participants	135	62	3.1	29 ^	34 ^	43	57	75	96 ^	112 ^
NSLP nonparticipants	202	66	2.9	44 ^	48	56	65	75	86	93 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.9. Usual Daily Saturated Fat Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Saturated Fat										DGA = < 10% of calories	
	Percentiles											
	N	Mean	SE	5	10	25	50	75	90	95	% Above DGA	SE
By Age/Gender Groups												
6 to 8 Years ^a												
NSLP participants	259	10.1	0.25	8.0 ^	8.5	9.2	10.1	11.0	11.9	12.4 ^	53.3	21.07
NSLP nonparticipants	100	10.8	0.51	8.3 ^	8.8 ^	9.7	10.8	11.8	12.8 ^	13.4 ^	69.5	14.82
9 to 13 Years												
NSLP participants	594	10.5	0.15	8.5	8.9	9.6	10.5	11.4	12.2	12.8	65.3	8.18
NSLP nonparticipants	345	10.2	0.37	7.3 ^	7.9	8.9	10.1	11.3	12.4	13.1 ^	52.1	10.89
9 to 13 Years, Male												
NSLP participants	336	10.5	0.17	7.9 ^	8.4	9.3	10.4	11.6	12.7	13.4 ^	60.5	9.15
NSLP nonparticipants	158	10.1	0.39	7.1 ^	7.7 ^	8.7	10.0	11.3	12.6 ^	13.4 ^	49.7	10.03
9 to 13 Years, Female												
NSLP participants	258	10.6	0.22	8.4 ^	8.8	9.6	10.6	11.5	12.4	13.0 ^	65.7	8.64
NSLP nonparticipants	187	10.3	0.52	7.9 ^	8.4 ^	9.2	10.2	11.2	12.2 ^	12.8 ^	55.9	14.74
14 to 18 Years ^b												
NSLP participants	401	11.0	0.25	7.8	8.4	9.5	10.9	12.3	13.7	14.6	66.5	6.17
NSLP nonparticipants	466	10.6	0.19	7.9	8.5	9.5	10.6	11.7	12.8	13.5	64.2	25.75
14 to 18 Years, Male ^b												
NSLP participants	230	11.4	0.39	7.3 ^	8.1	9.5	11.2	13.1	14.9	16.1 ^	68.6	5.29
NSLP nonparticipants	229	10.6	0.27	7.2 ^	7.9	9.1	10.5	12.0	13.3	14.2 ^	59.3	15.32
14 to 18 Years, Female ^b												
NSLP participants	171	10.4	0.31	8.1 ^	8.5 ^	9.4	10.3	11.3	12.3 ^	12.9 ^	58.3	9.19
NSLP nonparticipants	237	10.8	0.27	8.3 ^	8.8	9.7	10.7	11.8	12.8	13.4 ^	68.0	11.10
All Students												
NSLP participants	1,254	10.5	0.16	8.1	8.6	9.5	10.5	11.5	12.6	13.2	62.4	4.96
NSLP nonparticipants	911	10.5	0.20	8.0	8.5	9.4	10.4	11.5	12.5	13.1	60.6	7.27
All Students, Male												
NSLP participants	694	10.6	0.20	7.9	8.4	9.4	10.6	11.8	13.0	13.7	62.5	9.84
NSLP nonparticipants	431	10.3	0.22	7.0	7.6	8.8	10.3	11.7	13.1	14.0	54.8	4.79
All Students, Female												
NSLP participants	560	10.4	0.20	8.4	8.9	9.6	10.4	11.3	12.1	12.6	62.8	14.37
NSLP nonparticipants	480	10.6	0.27	8.1	8.6	9.5	10.5	11.6	12.6	13.2	63.4	9.47

	Percentage of Calories from Saturated Fat										DGA = < 10% of calories	
	Percentiles											
	N	Mean	SE	5	10	25	50	75	90	95	% Above DGA	SE
By School Type and Gender												
Elementary School Students												
NSLP participants	540	10.4	0.21	8.3	8.7	9.4	10.3	11.2	12.1	12.6	59.4	19.57
NSLP nonparticipants	205	10.4	0.33	8.3 ^	8.8	9.5	10.4	11.3	12.2	12.7 ^	61.9	33.48
Elementary School Students, Male												
NSLP participants	282	10.3	0.18	7.7 ^	8.2	9.1	10.2	11.3	12.4	13.1 ^	55.3	8.68
NSLP nonparticipants	94	10.4	0.52	7.3 ^	8.0 ^	9.1	10.3	11.7	13.0 ^	13.8 ^	57.3	15.17
Elementary School Students, Female												
NSLP participants	258	10.5	0.33	8.3 ^	8.7	9.5	10.4	11.4	12.3	12.9 ^	61.9	13.17
NSLP nonparticipants	109	10.3	0.38	8.2 ^	8.6 ^	9.4	10.3	11.2	12.0 ^	12.5 ^	59.7	28.82
Middle School Students												
NSLP participants	406	10.7	0.21	8.7	9.1	9.8	10.7	11.5	12.3	12.8	70.5	14.67
NSLP nonparticipants	308	9.8	0.34	7.6 ^	8.1	8.9	9.8	10.7	11.6	12.1 ^	42.4	23.40
Middle School Students, Male												
NSLP participants	239	10.6	0.26	8.0 ^	8.5	9.4	10.5	11.6	12.7	13.4 ^	62.4	10.95
NSLP nonparticipants	144	9.7	0.36	7.0 ^	7.5 ^	8.4	9.6	10.8	12.1 ^	13.0 ^	40.3	15.77
Middle School Students, Female												
NSLP participants	167	10.8	0.30	8.9 ^	9.3 ^	10.0	10.8	11.7	12.5 ^	13.0 ^	74.7	17.84
NSLP nonparticipants	162	10.1	0.43	8.1 ^	8.6 ^	9.3	10.1	11.0	11.8 ^	12.2 ^	54.0	32.47
High School Students												
NSLP participants	308	10.9	0.28	7.1 ^	7.9	9.2	10.8	12.4	14.1	15.1 ^	62.6	4.19
NSLP nonparticipants	395	10.5	0.25	8.1 ^	8.7	9.5	10.5	11.5	12.5	13.1 ^	63.5	26.36
High School Students, Male												
NSLP participants	173	11.6	0.45	6.6 ^	7.6 ^	9.3	11.4	13.7	15.9 ^	17.3 ^	67.3	4.72
NSLP nonparticipants	193	10.7	0.34	7.3 ^	8.0 ^	9.2	10.6	12.1	13.5 ^	14.4 ^	61.0	20.32
High School Students, Female												
NSLP participants	135	10.0	0.26	8.1 ^	8.5 ^	9.2	10.0	10.8	11.6 ^	12.1 ^	49.9	31.25
NSLP nonparticipants	199	10.6	0.28	8.5 ^	8.9 ^	9.7	10.5	11.5	12.3 ^	12.8 ^	66.2	25.26

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DGA = 2010 *Dietary Guidelines for Americans*; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.10. Usual Daily Saturated Fat Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Saturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	257	21	0.6	15 ^	16	18	21	23	26	28 ^
NSLP nonparticipants	100	23	1.7	14 ^	16 ^	18	22	26	31 ^	33 ^
9 to 13 Years										
NSLP participants	594	23	0.8	15	17	19	23	26	30	33
NSLP nonparticipants	345	24	1.8	9 ^	11	16	22	29	37	43 ^
9 to 13 Years, Male										
NSLP participants	336	25	0.9	14 ^	16	19	24	29	34	38 ^
NSLP nonparticipants	158	23	1.4	14 ^	16 ^	19	23	27	32 ^	35 ^
9 to 13 Years, Female										
NSLP participants	258	22	1.1	12 ^	14	17	21	26	31	35 ^
NSLP nonparticipants	187	24	3.5	7 ^	9 ^	14	22	31	41 ^	48 ^
14 to 18 Years ^b										
NSLP participants	401	26	1.4	11	13	18	24	32	42	50
NSLP nonparticipants	466	25	0.9	14	16	19	24	30	36	40
14 to 18 Years, Male ^b										
NSLP participants	230	31	2.3	12 ^	15	20	28	39	52	61 ^
NSLP nonparticipants	229	28	1.7	15 ^	18	22	27	33	40	44 ^
14 to 18 Years, Female ^b										
NSLP participants	171	21	1.0	12 ^	14 ^	16	20	24	28 ^	31 ^
NSLP nonparticipants	237	21	1.1	12 ^	14	17	21	25	30	33 ^
All Students										
NSLP participants	1,254	24	0.6	14	15	18	23	28	33	37
NSLP nonparticipants	911	24	0.8	11	13	17	23	29	36	41
All Students, Male										
NSLP participants	694	25	0.9	14	16	20	24	30	36	40
NSLP nonparticipants	431	25	0.9	13	15	19	24	30	36	40
All Students, Female										
NSLP participants	560	21	0.8	13	14	17	21	25	29	32
NSLP nonparticipants	480	23	1.6	10	12	16	22	28	36	41

	Saturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	23	0.7	15	17	19	22	25	29	31
NSLP nonparticipants	208	23	1.9	9 ^	11	16	22	29	36	41 ^
Elementary School Students, Male										
NSLP participants	282	23	0.7	16 ^	17	19	22	26	29	31 ^
NSLP nonparticipants	94	22	1.9	11 ^	13 ^	17	22	27	32 ^	36 ^
Elementary School Students, Female										
NSLP participants	258	22	1.1	14 ^	16	18	22	26	30	33 ^
NSLP nonparticipants	114	24	2.9	9 ^	11 ^	16	22	30	39 ^	45 ^
Middle School Students										
NSLP participants	406	22	0.7	13	15	18	21	26	31	35
NSLP nonparticipants	308	20	1.0	12 ^	14	17	20	24	28	30 ^
Middle School Students, Male										
NSLP participants	239	24	1.2	14 ^	16	19	23	28	33	37 ^
NSLP nonparticipants	144	22	1.2	13 ^	14 ^	17	21	25	30 ^	33 ^
Middle School Students, Female										
NSLP participants	167	20	0.6	12 ^	14 ^	16	19	23	27 ^	29 ^
NSLP nonparticipants	164	19	1.2	13 ^	14 ^	16	19	22	25 ^	27 ^
High School Students										
NSLP participants	308	27	1.7	11 ^	13	17	24	33	44	53 ^
NSLP nonparticipants	395	25	1.0	14 ^	16	20	24	30	35	39 ^
High School Students, Male										
NSLP participants	173	33	2.5	12 ^	15 ^	21	29	41	55 ^	66 ^
NSLP nonparticipants	193	28	1.7	15 ^	18 ^	22	27	34	40 ^	44 ^
High School Students, Female										
NSLP participants	135	20	0.9	11 ^	13 ^	15	19	24	29 ^	33 ^
NSLP nonparticipants	202	22	1.1	13 ^	15	18	21	25	29	32 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.11. Usual Daily Monounsaturated Fat Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

	Monounsaturated Fat Intakes (% of calories)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	259	10.2	0.23	8.3 ^	8.7	9.4	10.2	11.0	11.7	12.2 ^
NSLP nonparticipants	100	10.6	0.34	8.5 ^	8.9 ^	9.6	10.5	11.5	12.4 ^	13.0 ^
9 to 13 Years										
NSLP participants	594	11.0	0.10	8.8	9.3	10.0	10.9	11.8	12.7	13.3
NSLP nonparticipants	345	10.6	0.29	8.0 ^	8.5	9.4	10.5	11.6	12.7	13.3 ^
9 to 13 Years, Male										
NSLP participants	336	10.9	0.19	8.7 ^	9.2	9.9	10.9	11.8	12.8	13.3 ^
NSLP nonparticipants	158	10.7	0.30	8.3 ^	8.8 ^	9.6	10.6	11.7	12.7 ^	13.4 ^
9 to 13 Years, Female										
NSLP participants	258	11.0	0.15	9.0 ^	9.4	10.1	10.9	11.8	12.6	13.2 ^
NSLP nonparticipants	187	10.5	0.46	7.8 ^	8.4 ^	9.4	10.5	11.6	12.7 ^	13.3 ^
14 to 18 Years ^b										
NSLP participants	401	10.8	0.15	8.1	8.6	9.6	10.8	12.0	13.1	13.8
NSLP nonparticipants	466	11.2	0.20	8.5	9.0	10.0	11.1	12.3	13.4	14.2
14 to 18 Years, Male ^b										
NSLP participants	230	11.0	0.21	7.8 ^	8.4	9.6	10.9	12.3	13.7	14.6 ^
NSLP nonparticipants	229	10.9	0.24	8.0 ^	8.6	9.6	10.8	12.2	13.4	14.2 ^
14 to 18 Years, Female ^b										
NSLP participants	168	10.6	0.30	8.8 ^	9.2 ^	9.8	10.6	11.3	12.0 ^	12.5 ^
NSLP nonparticipants	237	11.5	0.32	9.1 ^	9.7	10.5	11.5	12.5	13.5	14.1 ^
All Students										
NSLP participants	1,254	10.7	0.10	8.7	9.1	9.8	10.7	11.5	12.3	12.8
NSLP nonparticipants	911	10.8	0.17	8.2	8.7	9.6	10.7	11.8	12.9	13.5
All Students, Male										
NSLP participants	694	10.7	0.13	8.5	8.9	9.7	10.7	11.6	12.6	13.2
NSLP nonparticipants	431	10.7	0.27	7.8	8.3	9.4	10.6	12.0	13.2	14.1
All Students, Female										
NSLP participants	553	10.6	0.15	8.8	9.2	9.8	10.6	11.4	12.2	12.6
NSLP nonparticipants	480	10.8	0.25	8.5	9.0	9.8	10.8	11.7	12.7	13.2

	Monounsaturated Fat Intakes (% of calories)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	10.6	0.16	8.6	9.0	9.7	10.6	11.4	12.2	12.7
NSLP nonparticipants	208	10.5	0.36	8.1 ^	8.6	9.4	10.5	11.5	12.5	13.1 ^
Elementary School Students, Male										
NSLP participants	282	10.5	0.20	8.4 ^	8.8	9.6	10.5	11.4	12.2	12.7 ^
NSLP nonparticipants	94	10.6	0.66	6.4 ^	7.2 ^	8.6	10.3	12.3	14.4 ^	15.9 ^
Elementary School Students, Female										
NSLP participants	258	10.7	0.21	8.8 ^	9.2	9.9	10.7	11.5	12.3	12.8 ^
NSLP nonparticipants	110	10.5	0.44	8.6 ^	9.0 ^	9.6	10.4	11.3	12.1 ^	12.6 ^
Middle School Students										
NSLP participants	406	10.9	0.14	9.0	9.4	10.1	10.9	11.8	12.6	13.1
NSLP nonparticipants	308	10.8	0.21	8.5 ^	9.0	9.8	10.7	11.7	12.6	13.2 ^
Middle School Students, Male										
NSLP participants	239	10.9	0.22	8.6 ^	9.1	9.9	10.8	11.8	12.6	13.2 ^
NSLP nonparticipants	144	10.8	0.31	8.5 ^	9.0 ^	9.8	10.7	11.7	12.7 ^	13.4 ^
Middle School Students, Female										
NSLP participants	165	10.9	0.19	9.1 ^	9.4 ^	10.1	10.9	11.7	12.5 ^	12.9 ^
NSLP nonparticipants	163	10.8	0.27	8.8 ^	9.2 ^	10.0	10.8	11.6	12.4 ^	13.0 ^
High School Students										
NSLP participants	308	10.8	0.18	7.8 ^	8.4	9.5	10.7	12.0	13.3	14.1 ^
NSLP nonparticipants	395	11.1	0.21	8.6 ^	9.1	10.0	11.0	12.1	13.2	13.8 ^
High School Students, Male										
NSLP participants	173	11.1	0.26	7.8 ^	8.5 ^	9.6	11.0	12.5	13.9 ^	14.8 ^
NSLP nonparticipants	193	10.9	0.29	8.3 ^	8.8 ^	9.7	10.8	12.0	13.1 ^	13.9 ^
High School Students, Female										
NSLP participants	135	10.4	0.28	8.2 ^	8.7 ^	9.4	10.4	11.3	12.2 ^	12.8 ^
NSLP nonparticipants	202	11.4	0.31	9.1 ^	9.6	10.4	11.4	12.4	13.4	14.0 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.12. Usual Daily Monounsaturated Fat Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Monounsaturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	259	22	0.6	14 ^	15	18	21	25	29	32 ^
NSLP nonparticipants	100	22	1.5	11 ^	13 ^	17	21	27	33 ^	36 ^
9 to 13 Years										
NSLP participants	594	24	0.8	16	18	20	23	27	31	33
NSLP nonparticipants	345	24	1.8	10 ^	12	17	23	30	38	44 ^
9 to 13 Years, Male										
NSLP participants	336	25	1.0	16 ^	18	21	25	29	33	36 ^
NSLP nonparticipants	158	25	1.1	18 ^	19 ^	21	24	27	31 ^	33 ^
9 to 13 Years, Female										
NSLP participants	258	23	1.1	14 ^	15	18	22	26	31	34 ^
NSLP nonparticipants	187	24	3.6	7 ^	9 ^	14	22	31	42 ^	50 ^
14 to 18 Years ^b										
NSLP participants	401	26	1.2	12	14	18	24	32	41	48
NSLP nonparticipants	466	26	0.9	13	15	19	25	32	39	45
14 to 18 Years, Male ^b										
NSLP participants	230	30	1.7	14 ^	16	21	27	36	47	54 ^
NSLP nonparticipants	229	29	1.8	15 ^	17	22	28	35	43	49 ^
14 to 18 Years, Female ^b										
NSLP participants	171	21	1.1	10 ^	12 ^	15	20	25	32 ^	37 ^
NSLP nonparticipants	237	23	1.2	12 ^	14	17	22	27	32	36 ^
All Students										
NSLP participants	1,254	24	0.5	15	16	19	23	27	32	35
NSLP nonparticipants	911	24	0.8	11	13	17	23	30	38	43
All Students, Male										
NSLP participants	694	25	0.7	16	18	21	25	29	34	37
NSLP nonparticipants	431	26	0.9	14	16	20	25	31	37	42
All Students, Female										
NSLP participants	560	22	0.7	14	15	18	21	25	30	33
NSLP nonparticipants	480	23	1.6	9	11	16	21	29	37	42

	Monounsaturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	23	0.6	16	17	20	23	26	30	32
NSLP nonparticipants	208	23	2.0	8 ^	10	15	21	29	37	43 ^
Elementary School Students, Male										
NSLP participants	280	23	0.7	16 ^	18	20	23	26	29	31 ^
NSLP nonparticipants	94	23	2.2	9 ^	11 ^	15	21	29	37 ^	43 ^
Elementary School Students, Female										
NSLP participants	258	23	0.9	16 ^	17	19	22	26	29	32 ^
NSLP nonparticipants	114	23	2.9	8 ^	10 ^	15	21	29	38 ^	44 ^
Middle School Students										
NSLP participants	406	23	0.8	14	16	19	22	26	30	33
NSLP nonparticipants	308	22	0.7	12 ^	14	17	21	26	32	35 ^
Middle School Students, Male										
NSLP participants	239	25	1.1	16 ^	17	20	24	28	32	35 ^
NSLP nonparticipants	144	24	1.1	14 ^	16 ^	19	23	28	33 ^	37 ^
Middle School Students, Female										
NSLP participants	167	20	0.8	14 ^	15 ^	17	20	23	26 ^	28 ^
NSLP nonparticipants	164	20	0.9	11 ^	12 ^	15	19	24	29 ^	33 ^
High School Students										
NSLP participants	308	26	1.4	11 ^	13	17	24	32	43	51 ^
NSLP nonparticipants	395	26	1.2	14 ^	16	20	25	31	38	43 ^
High School Students, Male										
NSLP participants	173	31	1.9	14 ^	16 ^	21	28	38	49 ^	57 ^
NSLP nonparticipants	193	29	2.1	15 ^	17 ^	21	28	35	44 ^	50 ^
High School Students, Female										
NSLP participants	135	21	1.2	9 ^	11 ^	14	19	26	33 ^	39 ^
NSLP nonparticipants	202	23	1.1	14 ^	16	19	22	27	31	34 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.13. Usual Daily Polyunsaturated Fat Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

	Polyunsaturated Fat Intakes (% of calories)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	259	7.2	0.18	5.4 ^	5.7	6.3	7.1	7.9	8.8	9.3 ^
NSLP nonparticipants	100	7.5	0.47	4.0 ^	4.6 ^	5.6	7.1	9.0	11.0 ^	12.4 ^
9 to 13 Years										
NSLP participants	594	7.8	0.13	5.8	6.1	6.8	7.7	8.6	9.5	10.1
NSLP nonparticipants	345	7.5	0.26	5.2 ^	5.7	6.5	7.4	8.5	9.5	10.2 ^
9 to 13 Years, Male										
NSLP participants	336	7.6	0.17	5.0 ^	5.5	6.4	7.4	8.6	9.8	10.7 ^
NSLP nonparticipants	158	7.5	0.28	5.8 ^	6.1 ^	6.7	7.5	8.3	9.1 ^	9.6 ^
9 to 13 Years, Female										
NSLP participants	258	7.9	0.19	6.0 ^	6.3	7.0	7.9	8.8	9.7	10.2 ^
NSLP nonparticipants	187	7.6	0.39	4.5 ^	5.2 ^	6.2	7.5	8.8	10.1 ^	10.9 ^
14 to 18 Years ^b										
NSLP participants	401	7.8	0.22	5.3	5.8	6.6	7.6	8.8	10.0	10.8
NSLP nonparticipants	466	7.8	0.24	5.3	5.7	6.6	7.7	8.9	10.1	10.9
14 to 18 Years, Male ^b										
NSLP participants	230	7.6	0.25	4.9 ^	5.4	6.3	7.4	8.7	10.0	10.9 ^
NSLP nonparticipants	229	7.5	0.26	5.3 ^	5.7	6.4	7.4	8.4	9.4	10.1 ^
14 to 18 Years, Female ^b										
NSLP participants	171	7.9	0.27	5.9 ^	6.3 ^	7.0	7.8	8.7	9.6 ^	10.1 ^
NSLP nonparticipants	237	8.3	0.40	5.4 ^	6.0	7.0	8.2	9.5	10.9	11.7 ^
All Students										
NSLP participants	1,254	7.6	0.12	5.6	6.0	6.7	7.5	8.4	9.2	9.8
NSLP nonparticipants	911	7.6	0.16	5.1	5.6	6.4	7.5	8.7	9.9	10.6
All Students, Male										
NSLP participants	694	7.4	0.15	5.1	5.5	6.3	7.3	8.3	9.4	10.1
NSLP nonparticipants	431	7.5	0.18	5.2	5.7	6.4	7.4	8.4	9.4	10.1
All Students, Female										
NSLP participants	560	7.8	0.15	5.8	6.2	6.9	7.7	8.6	9.5	10.0
NSLP nonparticipants	480	7.8	0.25	5.0	5.5	6.5	7.7	8.9	10.3	11.1

	Polyunsaturated Fat Intakes (% of calories)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	7.4	0.15	5.6	6.0	6.6	7.3	8.1	8.8	9.3
NSLP nonparticipants	208	7.5	0.33	4.3 ^	4.8	5.9	7.2	8.8	10.4	11.6 ^
Elementary School Students, Male										
NSLP participants	282	7.2	0.17	5.1 ^	5.5	6.3	7.1	8.1	9.0	9.6 ^
NSLP nonparticipants	94	7.3	0.41	4.2 ^	4.8 ^	5.8	7.1	8.6	10.2 ^	11.3 ^
Elementary School Students, Female										
NSLP participants	258	7.6	0.22	5.7 ^	6.1	6.7	7.5	8.4	9.3	9.9 ^
NSLP nonparticipants	114	7.7	0.45	4.4 ^	5.0 ^	6.0	7.4	9.0	10.8 ^	12.0 ^
Middle School Students										
NSLP participants	406	8.0	0.19	5.9	6.3	7.0	7.9	8.8	9.8	10.4
NSLP nonparticipants	307	7.8	0.17	6.2 ^	6.5	7.1	7.8	8.5	9.2	9.6 ^
Middle School Students, Male										
NSLP participants	239	7.7	0.21	5.7 ^	6.1	6.8	7.6	8.6	9.4	10.1 ^
NSLP nonparticipants	144	7.9	0.18	5.5 ^	6.0 ^	6.8	7.8	8.9	10.0 ^	10.7 ^
Middle School Students, Female										
NSLP participants	167	8.1	0.26	6.1 ^	6.5 ^	7.1	8.0	8.9	9.8 ^	10.4 ^
NSLP nonparticipants	164	7.8	0.40	5.5 ^	5.9 ^	6.7	7.7	8.7	9.8 ^	10.5 ^
High School Students										
NSLP participants	308	7.7	0.22	5.3 ^	5.8	6.6	7.6	8.7	9.8	10.5 ^
NSLP nonparticipants	393	7.8	0.24	5.9 ^	6.2	6.9	7.7	8.6	9.5	10.0 ^
High School Students, Male										
NSLP participants	173	7.6	0.26	4.8 ^	5.3 ^	6.2	7.4	8.7	10.2 ^	11.2 ^
NSLP nonparticipants	193	7.6	0.28	5.2 ^	5.6 ^	6.4	7.4	8.6	9.7 ^	10.4 ^
High School Students, Female										
NSLP participants	135	7.9	0.27	5.9 ^	6.3 ^	7.0	7.8	8.7	9.6 ^	10.1 ^
NSLP nonparticipants	202	8.0	0.39	5.2 ^	5.7	6.7	7.9	9.2	10.5	11.4 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.14. Usual Daily Polyunsaturated Fat Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Polyunsaturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	259	15	0.6	9 ^	10	12	15	18	21	24 ^
NSLP nonparticipants	100	16	1.3	7 ^	8 ^	11	15	19	24 ^	27 ^
9 to 13 Years										
NSLP participants	594	17	0.6	11	12	14	16	19	22	24
NSLP nonparticipants	345	17	1.4	7 ^	9	12	16	21	27	30 ^
9 to 13 Years, Male										
NSLP participants	336	17	0.7	10 ^	11	14	17	20	24	27 ^
NSLP nonparticipants	158	17	0.7	12 ^	13 ^	15	17	19	22 ^	23 ^
9 to 13 Years, Female										
NSLP participants	258	16	0.6	11 ^	12	14	16	18	20	22 ^
NSLP nonparticipants	187	17	2.7	5 ^	7 ^	10	15	22	30 ^	35 ^
14 to 18 Years ^b										
NSLP participants	401	18	1.0	8	9	12	17	23	30	35
NSLP nonparticipants	466	18	0.7	9	10	13	17	22	27	31
14 to 18 Years, Male ^b										
NSLP participants	230	21	1.5	8 ^	10	13	18	26	34	41 ^
NSLP nonparticipants	229	20	1.0	9 ^	11	14	18	24	30	34 ^
14 to 18 Years, Female ^b										
NSLP participants	171	16	0.9	7 ^	9 ^	11	15	19	24 ^	28 ^
NSLP nonparticipants	237	16	1.1	9 ^	10	12	15	19	23	26 ^
All Students										
NSLP participants	1,254	17	0.4	10	11	13	16	19	23	26
NSLP nonparticipants	911	17	0.7	8	9	12	16	21	26	30
All Students, Male										
NSLP participants	694	18	0.6	9	11	13	17	21	26	29
NSLP nonparticipants	431	18	0.5	9	11	13	17	21	25	28
All Students, Female										
NSLP participants	560	16	0.4	11	12	13	15	18	20	22
NSLP nonparticipants	480	16	1.3	6	8	11	15	20	27	31

	Polyunsaturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	16	0.5	11	12	13	16	18	21	22
NSLP nonparticipants	208	16	1.5	6 ^	7	10	15	21	27	31 ^
Elementary School Students, Male										
NSLP participants	282	16	0.6	10 ^	11	13	15	19	22	24 ^
NSLP nonparticipants	94	16	1.3	6 ^	8 ^	11	14	19	25 ^	29 ^
Elementary School Students, Female										
NSLP participants	258	16	0.6	11 ^	12	14	16	18	20	22 ^
NSLP nonparticipants	114	17	2.2	5 ^	7 ^	11	15	21	29 ^	34 ^
Middle School Students										
NSLP participants	405	16	0.6	11	12	14	16	18	21	23
NSLP nonparticipants	308	16	0.6	9 ^	10	13	16	19	23	25 ^
Middle School Students, Male										
NSLP participants	239	17	0.9	9 ^	11	13	16	21	25	28 ^
NSLP nonparticipants	144	17	0.9	11 ^	12 ^	14	17	20	23 ^	26 ^
Middle School Students, Female										
NSLP participants	167	14	0.6	10 ^	11 ^	12	14	16	19 ^	20 ^
NSLP nonparticipants	164	14	1.0	7 ^	8 ^	10	13	17	21 ^	24 ^
High School Students										
NSLP participants	308	19	1.1	8 ^	9	12	17	23	31	36 ^
NSLP nonparticipants	395	18	0.8	9 ^	10	13	17	22	27	31 ^
High School Students, Male										
NSLP participants	173	21	1.7	8 ^	10 ^	13	19	26	36 ^	43 ^
NSLP nonparticipants	193	20	1.1	9 ^	11 ^	14	18	25	31 ^	36 ^
High School Students, Female										
NSLP participants	135	16	0.9	8 ^	9 ^	11	15	19	24 ^	28 ^
NSLP nonparticipants	202	16	1.1	6 ^	8	11	15	20	26	30 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.15. Usual Daily Linoleic Acid Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

Percentage of Calories from Linoleic Acid											AMDR = 5-10% of calories					
Percentiles																
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years ^a																
NSLP participants	259	6.4	0.16	4.7 ^	5.1	5.6	6.4	7.1	7.9	8.4 ^	90.9	3.98	8.8	3.63	<3	0.64
NSLP nonparticipants	100	6.7	0.43	3.4 ^	4.0 ^	4.9	6.3	8.0	10.0 ^	11.4 ^	63.3	6.44	26.5	5.69	10.1^	4.52
9 to 13 Years																
NSLP participants	594	6.9	0.12	5.1	5.4	6.1	6.9	7.7	8.5	9.0	94.8	4.87	4.1	3.48	<3	1.50
NSLP nonparticipants	345	6.8	0.23	4.6 ^	5.0	5.8	6.7	7.6	8.6	9.2 ^	88.6	6.33	9.7	5.48	<3	1.12
9 to 13 Years, Male																
NSLP participants	336	6.8	0.16	4.4 ^	4.9	5.6	6.6	7.7	8.9	9.6 ^	84.3	5.03	12.2	3.84	3.5 ^	1.73
NSLP nonparticipants	158	6.8	0.26	5.2 ^	5.5 ^	6.0	6.7	7.4	8.1 ^	8.6 ^	96.5 ^	6.86	3.2 ^	5.75	<3	1.35
9 to 13 Years, Female																
NSLP participants	258	7.1	0.17	5.3 ^	5.6	6.3	7.0	7.8	8.7	9.2 ^	95.9 ^	2.99	<3	1.92	<3	1.34
NSLP nonparticipants	187	6.8	0.35	3.9 ^	4.5 ^	5.5	6.7	8.0	9.2 ^	9.9 ^	78.8	6.42	16.5	6.32	4.7 ^	1.36
14 to 18 Years ^b																
NSLP participants	401	6.9	0.21	4.6	5.0	5.8	6.8	7.9	9.1	9.8	86.4	8.56	9.4	6.00	4.2 ^	3.06
NSLP nonparticipants	466	7.1	0.22	5.2	5.6	6.2	7.0	7.8	8.7	9.2	95.5	8.24	3.1 ^	5.39	<3	3.08
14 to 18 Years, Male ^b																
NSLP participants	230	6.8	0.23	4.3 ^	4.8	5.6	6.6	7.8	9.0	9.8 ^	82.2	8.42	13.4	6.33	4.4 ^	2.77
NSLP nonparticipants	229	6.7	0.23	4.6 ^	5.0	5.7	6.6	7.5	8.5	9.2 ^	87.8	9.45	10.2	7.49	<3	2.64
14 to 18 Years, Female ^b																
NSLP participants	171	7.1	0.26	5.3 ^	5.6 ^	6.2	7.0	7.8	8.6 ^	9.2 ^	95.9 ^	3.17	<3	2.00	<3	1.91
NSLP nonparticipants	237	7.5	0.38	4.7 ^	5.3	6.2	7.4	8.6	9.9	10.7 ^	83.2	5.70	7.3 ^	3.21	9.5	4.95
All Students																
NSLP participants	1,254	6.8	0.11	5.0	5.3	5.9	6.7	7.5	8.3	8.8	93.9	3.43	5.3	2.63	<3	0.94
NSLP nonparticipants	911	6.8	0.15	4.5	4.9	5.7	6.7	7.8	8.9	9.7	85.2	5.88	11.3	4.44	3.5	1.79
All Students, Male																
NSLP participants	694	6.6	0.14	4.5	4.9	5.6	6.5	7.5	8.5	9.1	86.7	4.01	11.6	3.36	<3	1.01
NSLP nonparticipants	431	6.7	0.16	4.6	5.0	5.7	6.6	7.5	8.5	9.1	88.5	7.96	9.9	6.46	<3	1.80
All Students, Female																
NSLP participants	560	6.9	0.14	5.1	5.5	6.1	6.9	7.7	8.5	9.0	95.1	3.05	3.7	2.00	<3	1.27
NSLP nonparticipants	480	7.0	0.23	4.3	4.8	5.7	6.8	8.1	9.3	10.1	81.7	6.20	12.8	4.79	5.6	2.46

Percentage of Calories from Linoleic Acid											AMDR = 5-10% of calories					
Percentiles																
N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE	
By School Type and Gender																
Elementary School Students																
NSLP participants	540	6.6	0.14	5.0	5.3	5.9	6.5	7.2	7.9	8.3	94.9	3.76	4.9	3.43	<3	0.46
NSLP nonparticipants	208	6.7	0.30	3.7 ^	4.2	5.2	6.5	7.9	9.4	10.5 ^	71.6	7.18	21.7	6.50	6.8^	2.45
Elementary School Students, Male																
NSLP participants	282	6.4	0.16	4.5 ^	4.8	5.5	6.3	7.2	8.1	8.6 ^	86.7	4.69	12.7	4.27	<3	0.78
NSLP nonparticipants	94	6.6	0.38	3.6 ^	4.2 ^	5.1	6.3	7.8	9.3 ^	10.4 ^	71.2	11.86	22.7	9.64	6.1 ^	4.00
Elementary School Students, Female																
NSLP participants	258	6.8	0.22	5.0 ^	5.4	6.0	6.7	7.5	8.4	8.9 ^	94.4 ^	3.09	4.6 ^	2.31	<3	1.23
NSLP nonparticipants	114	6.8	0.40	3.9 ^	4.4 ^	5.3	6.6	8.0	9.7 ^	10.7 ^	72.6	8.84	19.0	7.71	8.4 ^	3.96
Middle School Students																
NSLP participants	406	7.1	0.17	5.3	5.6	6.2	7.0	7.9	8.8	9.3	95.3 ^	6.41	<3	3.59	<3	3.03
NSLP nonparticipants	308	7.1	0.16	4.6 ^	5.1	5.9	7.0	8.1	9.3	10.0 ^	85.7	6.09	9.2	3.63	5.1 ^	2.96
Middle School Students, Male																
NSLP participants	239	6.9	0.20	5.1 ^	5.5	6.1	6.8	7.6	8.4	8.9 ^	95.2 ^	5.74	3.9 ^	3.94	<3	2.07
NSLP nonparticipants	144	7.1	0.17	4.9 ^	5.3 ^	6.1	7.0	8.0	9.0 ^	9.6 ^	90.3 ^	7.63	6.4 ^	4.78	3.3 ^	3.22
Middle School Students, Female																
NSLP participants	167	7.2	0.24	5.4 ^	5.7 ^	6.4	7.2	8.0	8.8 ^	9.3 ^	96.1 ^	3.05	<3	1.80	<3	1.85
NSLP nonparticipants	164	7.0	0.39	4.9 ^	5.3 ^	6.0	6.9	7.8	8.8 ^	9.5 ^	91.3 ^	8.50	6.0 ^	6.65	<3	2.67
High School Students																
NSLP participants	308	6.9	0.20	4.7 ^	5.1	5.9	6.8	7.8	8.9	9.6 ^	88.3	7.15	8.6	5.37	3.1 ^	2.16
NSLP nonparticipants	395	7.0	0.21	5.2 ^	5.6	6.2	6.9	7.7	8.5	9.0 ^	95.9 ^	9.60	3.1 ^	6.88	<3	2.94
High School Students, Male																
NSLP participants	173	6.8	0.24	4.3 ^	4.7 ^	5.5	6.6	7.8	9.2 ^	10.1 ^	79.7	8.74	14.8	6.66	5.4 ^	2.95
NSLP nonparticipants	193	6.7	0.24	4.5 ^	4.9 ^	5.7	6.6	7.7	8.7 ^	9.4 ^	86.3	11.28	11.2	8.78	<3	3.15
High School Students, Female																
NSLP participants	135	7.0	0.24	5.2 ^	5.6 ^	6.2	6.9	7.8	8.6 ^	9.1 ^	95.9 ^	3.35	<3	2.66	<3	1.32
NSLP nonparticipants	202	7.2	0.36	4.5 ^	5.1	6.0	7.1	8.3	9.6	10.4 ^	83.5	6.87	9.3 ^	3.76	7.2 ^	4.88

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.16. Usual Daily Linoleic Acid Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Linoleic Acid Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	259	14	0.5	8 ^	9	11	13	16	19	21 ^
NSLP nonparticipants	100	14	1.2	6 ^	7 ^	9	13	17	22 ^	25 ^
9 to 13 Years										
NSLP participants	594	15	0.5	10	11	12	15	17	20	21
NSLP nonparticipants	345	15	1.2	7 ^	8	11	14	19	24	27 ^
9 to 13 Years, Male										
NSLP participants	336	16	0.7	9 ^	10	12	15	18	22	24 ^
NSLP nonparticipants	158	15	0.6	11 ^	12 ^	13	15	17	20 ^	21 ^
9 to 13 Years, Female										
NSLP participants	258	14	0.5	10 ^	11	12	14	16	18	20 ^
NSLP nonparticipants	187	15	2.4	5 ^	6 ^	9	14	20	27 ^	32 ^
14 to 18 Years ^b										
NSLP participants	401	17	1.0	7	8	11	15	20	27	32
NSLP nonparticipants	466	16	0.6	8	9	12	15	20	25	28
14 to 18 Years, Male ^b										
NSLP participants	230	19	1.4	7 ^	9	12	16	23	31	37 ^
NSLP nonparticipants	229	17	0.9	8 ^	10	12	16	21	27	31 ^
14 to 18 Years, Female ^b										
NSLP participants	171	14	0.8	6 ^	8 ^	10	13	17	22 ^	25 ^
NSLP nonparticipants	237	14	1.0	8 ^	9	11	14	17	21	23 ^
All Students										
NSLP participants	1,254	15	0.4	9	10	12	14	17	21	23
NSLP nonparticipants	911	15	0.6	7	8	11	14	19	24	27
All Students, Male										
NSLP participants	694	16	0.5	8	9	12	15	19	23	26
NSLP nonparticipants	431	16	0.5	8	10	12	15	19	23	26
All Students, Female										
NSLP participants	560	14	0.4	10	10	12	14	16	18	19
NSLP nonparticipants	480	15	1.1	6	7	10	14	18	24	28

	Linoleic Acid Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	14	0.4	9	10	12	14	16	19	20
NSLP nonparticipants	208	14	1.3	5 ^	6	9	13	18	24	28 ^
Elementary School Students, Male										
NSLP participants	282	14	0.5	8 ^	9	11	14	17	19	21 ^
NSLP nonparticipants	94	14	1.2	5 ^	7 ^	9	13	18	23 ^	26 ^
Elementary School Students, Female										
NSLP participants	258	14	0.6	10 ^	11	12	14	16	18	20 ^
NSLP nonparticipants	114	15	2.0	5 ^	6 ^	9	14	19	26 ^	30 ^
Middle School Students										
NSLP participants	405	14	0.5	10	11	12	14	16	19	20
NSLP nonparticipants	308	14	0.5	8 ^	9	11	14	17	20	23 ^
Middle School Students, Male										
NSLP participants	239	15	0.8	8 ^	9	12	15	18	22	25 ^
NSLP nonparticipants	144	16	0.8	10 ^	11 ^	13	15	18	21 ^	23 ^
Middle School Students, Female										
NSLP participants	167	13	0.5	9 ^	10 ^	11	13	15	17 ^	18 ^
NSLP nonparticipants	164	13	0.9	6 ^	7 ^	9	12	15	19 ^	22 ^
High School Students										
NSLP participants	308	17	1.0	7 ^	8	11	15	21	28	33 ^
NSLP nonparticipants	395	16	0.7	8 ^	9	12	15	20	24	28 ^
High School Students, Male										
NSLP participants	173	19	1.5	7 ^	9 ^	12	17	24	32 ^	39 ^
NSLP nonparticipants	193	18	1.0	8 ^	9 ^	12	16	22	28 ^	32 ^
High School Students, Female										
NSLP participants	135	14	0.9	7 ^	8 ^	10	13	17	22 ^	26 ^
NSLP nonparticipants	202	14	1.0	5 ^	7	10	13	18	24	27 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.17. Usual Daily Alpha-Linolenic Acid Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Alpha-Linolenic Acid										AMDR = 0.6-1.2% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years^a																
NSLP participants	259	0.6	0.02	0.5 ^	0.5	0.5	0.6	0.7	0.8	0.8 ^	55.8	20.38	44.2	20.37	<3	0.06
NSLP nonparticipants	100	0.7	0.06	0.4 ^	0.4 ^	0.5	0.6	0.8	0.9 ^	1.1 ^	54.0	7.60	43.8	8.97	<3	2.78
9 to 13 Years																
NSLP participants	594	0.7	0.01	0.5	0.5	0.6	0.7	0.7	0.8	0.9	69.3	17.96	30.7	17.93	<3	0.12
NSLP nonparticipants	345	0.6	0.03	0.4 ^	0.5	0.5	0.6	0.7	0.8	0.9 ^	56.0	14.34	44.0	14.33	<3	0.13
9 to 13 Years, Male																
NSLP participants	336	0.6	0.02	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.9 ^	61.2	27.27	38.8	27.25	<3	0.12
NSLP nonparticipants	158	0.6	0.03	0.5 ^	0.5 ^	0.5	0.6	0.7	0.8 ^	0.8 ^	54.3	18.09	45.7	18.08	<3	0.14
9 to 13 Years, Female																
NSLP participants	256	0.7	0.02	0.5 ^	0.5	0.6	0.7	0.7	0.8	0.9 ^	73.0	5.38	27.0	5.35	<3	0.12
NSLP nonparticipants	187	0.6	0.04	0.4 ^	0.5 ^	0.5	0.6	0.7	0.8 ^	0.9 ^	59.1	27.43	40.8	27.26	<3	0.53
14 to 18 Years^b																
NSLP participants	400	0.6	0.02	0.5	0.5	0.6	0.6	0.7	0.8	0.8	63.2	7.57	36.7	7.56	<3	0.06
NSLP nonparticipants	463	0.6	0.02	0.4	0.5	0.5	0.6	0.7	0.8	0.9	54.8	6.39	45.0	6.49	<3	0.28
14 to 18 Years, Male^b																
NSLP participants	230	0.6	0.02	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.8 ^	59.3	7.67	40.7	7.65	<3	0.07
NSLP nonparticipants	229	0.6	0.03	0.5 ^	0.5	0.5	0.6	0.7	0.8	0.8 ^	55.5	22.55	44.5	22.56	<3	0.19
14 to 18 Years, Female^b																
NSLP participants	170	0.7	0.03	0.5 ^	0.5 ^	0.6	0.6	0.7	0.8 ^	0.9 ^	67.7	10.79	32.3	10.78	<3	0.09
NSLP nonparticipants	235	0.6	0.03	0.4 ^	0.5	0.5	0.6	0.7	0.8	0.9 ^	59.7	17.57	40.1	17.51	<3	0.47
All Students																
NSLP participants	1,249	0.6	0.01	0.5	0.5	0.6	0.6	0.7	0.8	0.8	62.4	3.69	37.6	3.66	<3	0.05
NSLP nonparticipants	906	0.6	0.02	0.4	0.5	0.5	0.6	0.7	0.8	0.9	56.8	11.15	43.0	11.14	<3	0.27
All Students, Male																
NSLP participants	691	0.6	0.01	0.5	0.5	0.5	0.6	0.7	0.8	0.8	56.6	6.80	43.4	6.78	<3	0.08
NSLP nonparticipants	431	0.6	0.02	0.4	0.5	0.5	0.6	0.7	0.8	0.8	54.2	21.97	45.8	21.97	<3	0.16
All Students, Female																
NSLP participants	557	0.7	0.01	0.5	0.5	0.6	0.7	0.7	0.8	0.9	68.7	5.02	31.3	4.99	<3	0.08
NSLP nonparticipants	478	0.7	0.03	0.5	0.5	0.6	0.7	0.7	0.8	0.9	64.5	23.83	35.4	23.67	<3	0.68

	Percentage of Calories from Alpha-Linolenic Acid										AMDR = 0.6-1.2% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By School Type and Gender																
Elementary School Students																
NSLP participants	540	0.6	0.01	0.5	0.5	0.6	0.6	0.7	0.8	0.8	59.5	3.60	40.5	3.60	<3	0.02
NSLP nonparticipants	208	0.7	0.04	0.4 ^	0.4	0.5	0.6	0.8	0.9	1.0 ^	56.7	18.87	42.5	18.67	<3	1.03
Elementary School Students, Male																
NSLP participants	282	0.6	0.02	0.4 ^	0.5	0.5	0.6	0.7	0.8	0.8 ^	52.0	5.59	48.0	5.59	<3	0.08
NSLP nonparticipants	94	0.6	0.03	0.4 ^	0.5 ^	0.5	0.6	0.7	0.8 ^	0.9 ^	54.2	31.43	45.8	31.42	<3	0.08
Elementary School Students, Female																
NSLP participants	258	0.6	0.02	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.9 ^	63.4	15.82	36.5	15.80	<3	0.17
NSLP nonparticipants	114	0.7	0.05	0.4 ^	0.4 ^	0.5	0.6	0.8	1.0 ^	1.1 ^	58.9	14.26	39.2	14.15	<3	2.57
Middle School Students																
NSLP participants	405	0.7	0.02	0.5	0.5	0.6	0.7	0.8	0.8	0.9	73.8	19.97	26.1	19.72	<3	0.62
NSLP nonparticipants	308	0.6	0.02	0.4 ^	0.5	0.5	0.6	0.7	0.8	0.8 ^	57.9	30.80	42.1	30.79	<3	0.28
Middle School Students, Male																
NSLP participants	239	0.7	0.02	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.9 ^	63.7	34.71	36.2	34.39	<3	1.35
NSLP nonparticipants	144	0.6	0.03	0.4 ^	0.5 ^	0.5	0.6	0.7	0.8 ^	0.8 ^	56.0	16.21	43.9	16.23	<3	0.20
Middle School Students, Female																
NSLP participants	165	0.7	0.03	0.5 ^	0.5 ^	0.6	0.7	0.8	0.8 ^	0.9 ^	74.6	6.96	25.4	6.97	<3	0.10
NSLP nonparticipants	164	0.6	0.03	0.4 ^	0.4 ^	0.5	0.6	0.7	0.9 ^	0.9 ^	52.5	29.38	47.2	29.12	<3	0.69
High School Students																
NSLP participants	308	0.7	0.02	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.9 ^	66.1	8.64	33.9	8.62	<3	0.07
NSLP nonparticipants	392	0.6	0.03	0.4 ^	0.4	0.5	0.6	0.7	0.8	0.9 ^	52.4	7.69	47.3	7.80	<3	0.36
High School Students, Male																
NSLP participants	173	0.6	0.02	0.5 ^	0.5 ^	0.6	0.6	0.7	0.8 ^	0.9 ^	62.4	23.18	37.6	23.15	<3	0.27
NSLP nonparticipants	193	0.6	0.05	0.4 ^	0.5 ^	0.5	0.6	0.7	0.8 ^	0.9 ^	57.0	39.47	42.8	39.47	<3	1.15
High School Students, Female																
NSLP participants	135	0.7	0.03	0.5 ^	0.5 ^	0.6	0.7	0.7	0.8 ^	0.9 ^	72.0	11.49	28.0	11.47	<3	0.09
NSLP nonparticipants	200	0.6	0.03	0.4 ^	0.4	0.5	0.6	0.7	0.8 ^	0.9 ^	54.8	20.44	45.0	20.33	<3	0.60

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.18. Usual Daily Alpha-Linolenic Acid Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Alpha-Linolenic Acid Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
NSLP participants	259	1.3	0.05	0.9 ^	1.0	1.1	1.3	1.5	1.7	1.8 ^
NSLP nonparticipants	100	1.3	0.13	0.7 ^	0.8 ^	1.0	1.3	1.6	2.0 ^	2.2 ^
9 to 13 Years										
NSLP participants	594	1.4	0.05	0.9	1.0	1.2	1.4	1.6	1.9	2.1
NSLP nonparticipants	345	1.4	0.15	0.7 ^	0.8	1.0	1.4	1.8	2.2	2.5 ^
9 to 13 Years, Male										
NSLP participants	336	1.5	0.06	0.9 ^	1.0	1.2	1.4	1.7	2.0	2.2 ^
NSLP nonparticipants	158	1.4	0.05	0.9 ^	1.0 ^	1.2	1.4	1.6	1.9 ^	2.0 ^
9 to 13 Years, Female										
NSLP participants	258	1.4	0.07	0.9 ^	1.0	1.1	1.3	1.6	1.8	2.0 ^
NSLP nonparticipants	187	1.5	0.28	0.4 ^	0.6 ^	0.9	1.3	1.9	2.6 ^	3.2 ^
14 to 18 Years ^b										
NSLP participants	401	1.5	0.08	0.8	0.9	1.1	1.4	1.9	2.3	2.7
NSLP nonparticipants	466	1.5	0.07	0.7	0.8	1.1	1.4	1.8	2.2	2.5
14 to 18 Years, Male ^b										
NSLP participants	230	1.7	0.13	0.7 ^	0.9	1.1	1.6	2.1	2.9	3.4 ^
NSLP nonparticipants	229	1.6	0.10	0.8 ^	0.9	1.2	1.5	2.0	2.4	2.7 ^
14 to 18 Years, Female ^b										
NSLP participants	171	1.3	0.07	0.9 ^	1.0 ^	1.1	1.3	1.5	1.7 ^	1.8 ^
NSLP nonparticipants	237	1.3	0.10	0.7 ^	0.8	1.0	1.2	1.5	1.9	2.1 ^
All Students										
NSLP participants	1,254	1.4	0.03	0.9	0.9	1.1	1.4	1.7	2.0	2.2
NSLP nonparticipants	911	1.4	0.08	0.7	0.8	1.0	1.4	1.7	2.2	2.5
All Students, Male										
NSLP participants	694	1.5	0.05	0.8	0.9	1.1	1.4	1.8	2.2	2.4
NSLP nonparticipants	431	1.4	0.04	1.0	1.0	1.2	1.4	1.6	1.9	2.0
All Students, Female										
NSLP participants	560	1.3	0.03	0.9	1.0	1.1	1.3	1.5	1.7	1.9
NSLP nonparticipants	480	1.4	0.13	0.5	0.6	0.9	1.3	1.8	2.4	2.7

	Alpha-Linolenic Acid Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
NSLP participants	540	1.4	0.03	0.9	1.0	1.1	1.3	1.6	1.8	2.0
NSLP nonparticipants	208	1.4	0.15	0.5 ^	0.6	0.9	1.3	1.8	2.3	2.7 ^
Elementary School Students, Male										
NSLP participants	282	1.4	0.04	0.9 ^	0.9	1.1	1.3	1.6	1.8	2.0 ^
NSLP nonparticipants	94	1.3	0.09	0.7 ^	0.8 ^	1.0	1.2	1.5	1.8 ^	2.0 ^
Elementary School Students, Female										
NSLP participants	258	1.4	0.05	0.9 ^	1.0	1.1	1.3	1.6	1.8	1.9 ^
NSLP nonparticipants	114	1.5	0.23	0.5 ^	0.6 ^	0.9	1.3	1.9	2.7 ^	3.2 ^
Middle School Students										
NSLP participants	406	1.4	0.06	0.9	1.0	1.1	1.4	1.6	1.9	2.0
NSLP nonparticipants	308	1.3	0.07	0.6 ^	0.7	0.9	1.2	1.6	2.1	2.4 ^
Middle School Students, Male										
NSLP participants	239	1.5	0.09	0.9 ^	1.0	1.2	1.5	1.8	2.1	2.3 ^
NSLP nonparticipants	144	1.4	0.06	0.8 ^	0.9 ^	1.1	1.3	1.6	1.9 ^	2.1 ^
Middle School Students, Female										
NSLP participants	167	1.3	0.06	0.9 ^	0.9 ^	1.1	1.2	1.4	1.6 ^	1.8 ^
NSLP nonparticipants	164	1.1	0.07	0.5 ^	0.6 ^	0.8	1.1	1.4	1.7 ^	2.0 ^
High School Students										
NSLP participants	308	1.6	0.09	0.8 ^	0.9	1.1	1.5	1.9	2.4	2.8 ^
NSLP nonparticipants	395	1.5	0.08	0.7 ^	0.8	1.1	1.4	1.8	2.2	2.5 ^
High School Students, Male										
NSLP participants	173	1.8	0.15	0.7 ^	0.9 ^	1.2	1.6	2.2	3.0 ^	3.5 ^
NSLP nonparticipants	193	1.6	0.11	0.7 ^	0.9 ^	1.2	1.5	2.0	2.5 ^	2.8 ^
High School Students, Female										
NSLP participants	135	1.3	0.07	0.9 ^	1.0 ^	1.1	1.3	1.5	1.7 ^	1.9 ^
NSLP nonparticipants	202	1.3	0.10	0.8 ^	0.9	1.0	1.3	1.5	1.8	2.0 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.19. Usual Daily Carbohydrate Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Carbohydrates										AMDR = 45-65% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years ^a																
NSLP participants	259	56.9	0.68	51.5 ^	52.7	54.8	57.0	59.1	61.1	62.2 ^	>97	2.08	<3	0.26	<3	1.85
NSLP nonparticipants	100	55.0	1.04	47.3 ^	49.0 ^	52.0	55.1	58.1	60.8 ^	62.4 ^	96.9 ^	2.79	<3	1.90	<3	1.35
9 to 13 Years																
NSLP participants	594	54.0	0.40	48.5	49.8	51.9	54.1	56.3	58.2	59.3	>97	1.20	<3	1.02	<3	0.20
NSLP nonparticipants	345	56.1	0.77	47.9 ^	49.8	52.9	56.1	59.4	62.4	64.2 ^	95.2 ^	3.76	<3	1.31	3.5 ^	2.78
9 to 13 Years, Male																
NSLP participants	336	54.1	0.46	47.2 ^	48.9	51.5	54.2	56.9	59.2	60.6 ^	>97	2.24	<3	1.87	<3	0.48
NSLP nonparticipants	158	56.5	0.99	48.2 ^	50.1 ^	53.2	56.7	59.8	62.6 ^	64.3 ^	95.0 ^	4.30	<3	1.45	3.5 ^	3.31
9 to 13 Years, Female																
NSLP participants	258	53.9	0.67	47.0 ^	48.7	51.3	54.0	56.6	58.8	60.2 ^	>97	3.30	<3	2.76	<3	0.68
NSLP nonparticipants	187	55.9	1.08	49.7 ^	51.0 ^	53.3	55.8	58.4	60.9 ^	62.4 ^	>97	4.54	<3	1.41	<3	3.34
14 to 18 Years ^b																
NSLP participants	401	52.9	0.62	43.3	45.6	49.2	53.1	56.8	59.9	61.8	90.6	7.33	8.3	6.08	<3	1.49
NSLP nonparticipants	466	53.2	0.50	44.2	46.2	49.6	53.3	56.8	60.1	62.0	92.2	4.80	6.5	3.50	<3	1.49
14 to 18 Years, Male ^b																
NSLP participants	230	51.8	0.68	41.7 ^	44.2	48.1	52.1	55.8	59.1	61.0 ^	87.0	9.83	12.3	8.60	<3	1.71
NSLP nonparticipants	229	53.5	0.68	44.1 ^	46.4	49.9	53.7	57.3	60.6	62.5 ^	91.7 ^	4.43	6.6 ^	3.18	<3	1.71
14 to 18 Years, Female ^b																
NSLP participants	171	54.3	0.87	46.3 ^	48.3 ^	51.2	54.5	57.6	60.3 ^	62.0 ^	96.2 ^	7.47	<3	4.83	<3	2.94
NSLP nonparticipants	237	52.7	1.01	43.9 ^	45.9	49.1	52.7	56.3	59.6	61.7 ^	91.3	7.59	7.4 ^	6.23	<3	1.82
All Students																
NSLP participants	1,254	54.5	0.39	47.5	49.1	51.8	54.7	57.4	59.8	61.2	98.1	1.57	<3	1.14	<3	0.55
NSLP nonparticipants	911	55.0	0.53	47.3	49.0	51.9	55.0	58.1	60.9	62.6	96.7	2.85	<3	1.58	<3	1.40
All Students, Male																
NSLP participants	694	54.2	0.44	46.7	48.5	51.4	54.4	57.3	59.8	61.2	>97	2.60	<3	2.04	<3	0.70
NSLP nonparticipants	431	55.4	0.69	46.0	48.2	51.8	55.6	59.2	62.3	64.1	92.9	2.75	3.7 ^	1.23	3.4 ^	1.94
All Students, Female																
NSLP participants	560	54.8	0.49	48.4	49.9	52.3	55.0	57.4	59.6	61.0	>97	1.63	<3	1.08	<3	0.65
NSLP nonparticipants	480	54.5	0.64	48.4	49.7	51.9	54.5	56.9	59.3	60.6	>97	3.00	<3	2.00	<3	1.05

Percentage of Calories from Carbohydrates											AMDR = 45-65% of calories					
Percentiles																
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By School Type and Gender																
Elementary School Students																
NSLP participants	540	55.6	0.51	49.1	50.6	53.0	55.7	58.2	60.5	61.8	>97	1.47	<3	0.60	<3	0.96
NSLP nonparticipants	208	55.8	0.94	49.5 ^	50.9	53.3	55.8	58.3	60.5	61.9 ^	>97	2.79	<3	1.23	<3	1.71
Elementary School Students, Male																
NSLP participants	282	55.7	0.52	49.6 ^	51.0	53.3	55.7	58.1	60.3	61.5 ^	>97	1.39	<3	0.44	<3	1.00
NSLP nonparticipants	94	57.0	1.54	47.5 ^	49.9 ^	53.4	57.1	60.9	64.1 ^	66.1 ^	90.4 ^	7.14	<3	1.81	7.3 ^	5.87
Elementary School Students, Female																
NSLP participants	258	55.5	0.71	48.5 ^	50.1	52.8	55.6	58.4	60.8	62.2 ^	>97	2.89	<3	1.54	<3	1.56
NSLP nonparticipants	114	55.1	0.99	49.0 ^	50.4 ^	52.7	55.2	57.6	59.7 ^	61.1 ^	>97	2.80	<3	1.73	<3	1.32
Middle School Students																
NSLP participants	406	53.5	0.46	46.7	48.2	50.8	53.6	56.2	58.6	60.0	>97	1.70	<3	1.52	<3	0.26
NSLP nonparticipants	308	55.3	0.69	47.9 ^	49.8	52.7	55.6	58.3	60.6	61.9 ^	>97	3.56	<3	2.53	<3	1.17
Middle School Students, Male																
NSLP participants	239	54.0	0.69	47.0 ^	48.6	51.3	54.2	56.9	59.2	60.6 ^	>97	2.36	<3	2.00	<3	0.56
NSLP nonparticipants	144	55.4	0.85	46.9 ^	49.2 ^	52.5	55.7	58.6	61.2 ^	62.9 ^	95.9 ^	4.95	<3	3.26	<3	2.04
Middle School Students, Female																
NSLP participants	167	52.7	0.76	46.5 ^	47.9 ^	50.3	52.8	55.2	57.3 ^	58.6 ^	>97	2.49	<3	2.40	<3	0.14
NSLP nonparticipants	164	55.5	0.75	49.3 ^	50.8 ^	53.0	55.5	58.1	60.4 ^	61.7 ^	>97	2.36	<3	1.23	<3	1.29
High School Students																
NSLP participants	308	52.6	0.82	41.1 ^	43.9	48.3	53.0	57.2	61.0	63.3 ^	84.4	9.23	12.9	7.42	<3	2.16
NSLP nonparticipants	395	53.3	0.68	45.5 ^	47.3	50.1	53.4	56.6	59.4	61.1 ^	95.3 ^	4.94	4.1 ^	3.77	<3	1.41
High School Students, Male																
NSLP participants	173	51.1	0.75	40.0 ^	42.8 ^	46.9	51.3	55.5	59.2 ^	61.4 ^	81.7	12.41	17.2	11.06	<3	1.88
NSLP nonparticipants	193	53.3	0.81	44.7 ^	46.8 ^	50.0	53.4	56.8	59.7 ^	61.5 ^	93.7 ^	5.63	5.6 ^	4.33	<3	1.76
High School Students, Female																
NSLP participants	135	54.7	1.08	44.0 ^	46.6 ^	50.5	55.0	59.2	62.7 ^	64.9 ^	88.7 ^	10.47	6.5 ^	6.78	4.8 ^	4.20
NSLP nonparticipants	202	53.6	1.01	45.8 ^	47.6	50.5	53.6	56.8	59.8	61.5 ^	95.5 ^	6.32	3.6 ^	4.62	<3	2.09

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

Table I.20. Usual Daily Carbohydrate Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Carbohydrate Intakes (g)										EAR (g) % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											100		
NSLP participants	259	268	6.9	180 ^	197	226	263	304	346	375 ^	100	<3	0.01
NSLP nonparticipants	100	245	9.3	189 ^	201 ^	220	243	268	292 ^	306 ^	100	<3	0.03
9 to 13 Years											100		
NSLP participants	594	259	7.6	175	190	219	254	293	333	358	100	<3	0.03
NSLP nonparticipants	345	279	12.4	149 ^	173	219	273	333	393	431 ^	100	<3	0.68
9 to 13 Years, Male											100		
NSLP participants	336	273	8.4	185 ^	202	231	268	309	349	376 ^	100	<3	0.03
NSLP nonparticipants	158	293	13.3	195 ^	214 ^	249	292	335	376 ^	402 ^	100	<3	0.21
9 to 13 Years, Female											100		
NSLP participants	258	243	10.1	164 ^	178	206	238	275	312	337 ^	100	<3	0.12
NSLP nonparticipants	187	267	22.3	126 ^	151 ^	198	258	326	395 ^	443 ^	100	<3	2.16
14 to 18 Years ^b											100		
NSLP participants	401	273	9.4	148	169	208	260	324	392	439	100	<3	0.58
NSLP nonparticipants	466	272	10.3	133	156	200	260	330	406	456	100	<3	1.02
14 to 18 Years, Male ^b											100		
NSLP participants	230	301	12.6	170 ^	192	233	288	355	428	478 ^	100	<3	0.23
NSLP nonparticipants	229	307	18.1	149 ^	177	228	295	373	454	509 ^	100	<3	0.58
14 to 18 Years, Female ^b											100		
NSLP participants	171	236	9.8	129 ^	148 ^	183	229	282	336 ^	372 ^	100	<3	1.45
NSLP nonparticipants	237	227	10.3	126 ^	144	177	220	268	320	356 ^	100	<3	2.07
All Students											—		
NSLP participants	1,254	264	5.0	177	192	221	258	300	342	370	—	<3	0.02
NSLP nonparticipants	911	269	6.2	148	170	210	262	320	379	417	—	<3	0.41
All Students, Male											—		
NSLP participants	694	279	5.6	185	202	233	272	317	364	394	—	<3	0.01
NSLP nonparticipants	431	289	9.3	166	188	230	283	340	397	435	—	<3	0.25
All Students, Female											—		
NSLP participants	560	247	6.4	171	185	211	243	278	312	335	—	<3	0.03
NSLP nonparticipants	480	249	11.0	136	156	194	242	295	350	385	—	<3	1.04

	Carbohydrate Intakes (g)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (g)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	539	264	5.8	205	217	237	262	289	315	331	—	<3	0.00
NSLP nonparticipants	208	255	15.0	146 ^	166	203	249	300	352	387 ^	—	<3	0.96
Elementary School Students, Male											—		
NSLP participants	282	276	6.5	185 ^	202	232	270	314	360	389 ^	—	<3	0.01
NSLP nonparticipants	94	260	16.0	164 ^	183 ^	214	254	299	344 ^	375 ^	—	<3	0.62
Elementary School Students, Female											—		
NSLP participants	258	259	7.5	186 ^	200	225	256	289	321	343 ^	—	<3	0.01
NSLP nonparticipants	114	255	21.5	141 ^	163 ^	200	247	302	359 ^	396 ^	—	<3	1.78
Middle School Students											—		
NSLP participants	406	245	7.1	151	168	198	238	283	331	364	—	<3	0.32
NSLP nonparticipants	308	255	8.4	129 ^	154	197	250	307	362	398 ^	—	<3	1.31
Middle School Students, Male											—		
NSLP participants	239	270	9.7	160 ^	178	213	260	315	374	419 ^	—	<3	0.35
NSLP nonparticipants	144	276	11.7	151 ^	176 ^	222	273	327	380 ^	418 ^	—	<3	1.50
Middle School Students, Female											—		
NSLP participants	167	216	7.7	148 ^	162 ^	184	213	244	275 ^	295 ^	—	<3	0.48
NSLP nonparticipants	164	228	10.6	119 ^	136 ^	171	217	271	332 ^	376 ^	—	<3	1.51
High School Students											—		
NSLP participants	308	277	11.4	148 ^	169	210	265	329	399	449 ^	—	<3	0.77
NSLP nonparticipants	395	274	12.3	135 ^	158	202	262	332	406	456 ^	—	<3	0.91
High School Students, Male											—		
NSLP participants	173	305	14.3	167 ^	190 ^	232	290	361	441 ^	498 ^	—	<3	0.28
NSLP nonparticipants	193	308	19.0	143 ^	172 ^	224	295	379	464 ^	523 ^	—	<3	1.01
High School Students, Female											—		
NSLP participants	135	243	11.6	142 ^	160 ^	193	237	286	335 ^	368 ^	—	<3	1.14
NSLP nonparticipants	202	235	10.4	136 ^	154	187	228	276	326	358 ^	—	<3	1.27

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.21. Usual Daily Protein Intakes, as a Percentage of Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Protein										AMDR = 10-30% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years^a																
NSLP participants	259	15.3	0.34	11.9 ^	12.6	13.8	15.2	16.8	18.4	19.3 ^	>97	0.53	<3	0.52	<3	0.00
NSLP nonparticipants	100	15.2	0.52	10.5 ^	11.5 ^	13.1	15.1	17.2	19.2 ^	20.4 ^	96.7 ^	2.54	3.3 ^	2.53	<3	0.03
9 to 13 Years																
NSLP participants	594	15.9	0.29	13.2	13.8	14.7	15.8	17.0	18.1	18.8	>97	0.07	<3	0.07	<3	0.00
NSLP nonparticipants	345	14.6	0.31	11.4 ^	12.0	13.1	14.4	15.9	17.4	18.3 ^	>97	1.08	<3	1.08	<3	0.00
9 to 13 Years, Male																
NSLP participants	336	16.0	0.30	12.9 ^	13.5	14.6	15.9	17.3	18.7	19.6 ^	>97	0.14	<3	0.14	<3	0.00
NSLP nonparticipants	158	14.6	0.45	11.5 ^	12.0 ^	13.1	14.4	15.8	17.3 ^	18.2 ^	>97	1.61	<3	1.61	<3	0.01
9 to 13 Years, Female																
NSLP participants	256	15.5	0.42	12.8 ^	13.3	14.3	15.4	16.6	17.8	18.6 ^	>97	0.18	<3	0.18	<3	0.00
NSLP nonparticipants	187	14.7	0.49	11.4 ^	12.0 ^	13.2	14.6	16.1	17.6 ^	18.6 ^	>97	1.69	<3	1.68	<3	0.01
14 to 18 Years^b																
NSLP participants	401	16.5	0.46	11.9	12.7	14.3	16.3	18.5	20.7	22.2	>97	0.86	<3	0.67	<3	0.21
NSLP nonparticipants	466	15.6	0.34	10.4	11.3	13.0	15.2	17.7	20.3	22.1	96.5 ^	1.71	3.4 ^	1.60	<3	0.15
14 to 18 Years, Male^b																
NSLP participants	230	17.2	0.70	12.3 ^	13.2	14.9	16.9	19.3	21.7	23.2 ^	>97	1.51	<3	0.89	<3	0.66
NSLP nonparticipants	229	16.0	0.50	11.0 ^	11.9	13.6	15.7	18.1	20.5	22.2 ^	>97	2.35	<3	2.13	<3	0.27
14 to 18 Years, Female^b																
NSLP participants	171	15.7	0.55	11.5 ^	12.3 ^	13.7	15.5	17.4	19.3 ^	20.6 ^	>97	1.95	<3	1.85	<3	0.12
NSLP nonparticipants	237	15.0	0.64	10.0 ^	10.9	12.5	14.6	17.0	19.6	21.4 ^	94.8 ^	4.30	5.0 ^	4.19	<3	0.18
All Students																
NSLP participants	1,254	15.9	0.22	12.5	13.2	14.3	15.7	17.3	18.8	19.8	>97	0.17	<3	0.16	<3	0.00
NSLP nonparticipants	911	15.1	0.24	10.8	11.5	13.0	14.8	16.8	18.9	20.3	97.7	1.20	2.3	1.19	<3	0.02
All Students, Male																
NSLP participants	694	16.2	0.26	13.0	13.6	14.7	16.0	17.5	18.9	19.7	>97	0.10	<3	0.10	<3	0.00
NSLP nonparticipants	431	15.1	0.36	10.6	11.4	12.9	14.8	16.9	19.0	20.5	>97	2.13	<3	2.07	<3	0.08
All Students, Female																
NSLP participants	560	15.6	0.32	11.8	12.5	13.8	15.4	17.1	18.9	20.0	>97	0.66	<3	0.64	<3	0.03
NSLP nonparticipants	480	15.0	0.32	10.8	11.5	13.0	14.8	16.7	18.8	20.1	>97	1.70	<3	1.67	<3	0.04

	Percentage of Calories from Protein										AMDR = 10-30% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By School Type and Gender																
Elementary School Students																
NSLP participants	540	15.5	0.29	12.2	12.9	14.0	15.3	16.8	18.3	19.2	>97	0.28	<3	0.27	<3	0.00
NSLP nonparticipants	208	14.9	0.44	10.9 ^	11.7	13.1	14.8	16.6	18.3	19.5 ^	>97	2.00	<3	1.99	<3	0.01
Elementary School Students, Male																
NSLP participants	282	15.7	0.29	12.9 ^	13.4	14.4	15.6	16.8	18.0	18.7 ^	>97	0.15	<3	0.15	<3	0.00
NSLP nonparticipants	94	14.6	0.62	10.2 ^	11.2 ^	12.7	14.5	16.4	18.1 ^	19.3 ^	95.8 ^	3.64	4.2 ^	3.64	<3	0.00
Elementary School Students, Female																
NSLP participants	258	15.3	0.47	10.8 ^	11.6	13.2	15.1	17.2	19.3	20.8 ^	>97	2.06	<3	1.97	<3	0.14
NSLP nonparticipants	114	15.2	0.58	11.2 ^	12.0 ^	13.3	15.0	16.9	18.8 ^	20.1 ^	>97	1.87	<3	1.81	<3	0.10
Middle School Students																
NSLP participants	406	16.2	0.25	12.8	13.5	14.6	16.1	17.6	19.2	20.2	>97	0.11	<3	0.11	<3	0.00
NSLP nonparticipants	304	15.0	0.35	12.3 ^	12.9	13.8	14.9	16.1	17.2	17.9 ^	>97	0.42	<3	0.42	<3	0.00
Middle School Students, Male																
NSLP participants	239	16.3	0.33	13.1 ^	13.7	14.8	16.2	17.6	18.9	19.8 ^	>97	0.09	<3	0.09	<3	0.01
NSLP nonparticipants	144	15.7	0.68	12.3 ^	13.0 ^	14.2	15.5	17.0	18.5 ^	19.7 ^	>97	1.26	<3	1.11	<3	0.21
Middle School Students, Female																
NSLP participants	167	16.1	0.46	12.2 ^	13.0 ^	14.3	15.9	17.7	19.4 ^	20.7 ^	>97	0.51	<3	0.47	<3	0.05
NSLP nonparticipants	164	14.8	0.50	10.8 ^	11.5 ^	12.9	14.5	16.4	18.3 ^	19.5 ^	>97	2.43	<3	2.42	<3	0.03
High School Students																
NSLP participants	308	16.7	0.53	11.8 ^	12.7	14.4	16.5	18.7	21.1	22.7 ^	>97	1.24	<3	0.91	<3	0.36
NSLP nonparticipants	395	15.6	0.37	10.8 ^	11.7	13.2	15.3	17.7	20.1	21.7 ^	>97	1.80	<3	1.67	<3	0.16
High School Students, Male																
NSLP participants	173	17.4	0.79	12.3 ^	13.3 ^	15.0	17.1	19.5	22.1 ^	23.8 ^	>97	1.98	<3	1.14	<3	0.91
NSLP nonparticipants	193	16.3	0.54	11.3 ^	12.3 ^	13.9	16.0	18.5	20.9 ^	22.7 ^	>97	3.11	<3	2.48	<3	0.71
High School Students, Female																
NSLP participants	135	16.0	0.56	11.5 ^	12.3 ^	13.8	15.7	17.8	19.9 ^	21.3 ^	>97	1.87	<3	1.68	<3	0.23
NSLP nonparticipants	202	14.9	0.62	10.5 ^	11.4	12.8	14.6	16.7	18.9	20.3 ^	97.0 ^	3.13	<3	3.07	<3	0.11

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of acceptable usual daily intakes, the AMDR for males and females 19 to 30 years was used for these students (10 to 35 percent of calories for both groups).

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

Table I.22. Usual Daily Protein Intakes Expressed as g per kg Body Weight: NSLP Participants and Matched Comparison Group of Nonparticipants

	Protein Intakes (g/kg)										EAR (g/kg body weight) ^a % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^b											0.76		
NSLP participants	259	2	0.1	1 ^	1	2	2	3	4	4 ^	0.76	<3	2.08
NSLP nonparticipants	100	2	0.2	1 ^	1 ^	1	2	3	3 ^	4 ^	0.76	5.4 ^	4.23
											0.76		
9 to 13 Years											0.76		
NSLP participants	594	2	0.1	1	1	1	2	2	3	3	0.76	3.1 ^	1.69
NSLP nonparticipants	345	2	0.1	0 ^	1	1	2	2	3	3 ^	0.76	12.4	4.88
											0.76		
9 to 13 Years, Male											0.76		
NSLP participants	336	2	0.1	1 ^	1	2	2	2	3	3 ^	0.76	<3	1.71
NSLP nonparticipants	158	2	0.1	1 ^	1 ^	1	2	2	3 ^	3 ^	0.76	10.2 ^	7.37
											0.76		
9 to 13 Years, Female											0.76		
NSLP participants	258	2	0.1	1 ^	1	1	2	2	2	3 ^	0.76	6.1 ^	2.53
NSLP nonparticipants	187	2	0.2	1 ^	1 ^	1	2	2	3 ^	3 ^	0.76	9.2 ^	4.69
											0.76		
14 to 18 Years ^c											—		
NSLP participants	401	1	0.1	0	1	1	1	2	2	3	—	19.9	3.42
NSLP nonparticipants	466	1	0.1	0	1	1	1	2	2	3	—	21.5	3.67
											—		
14 to 18 Years, Male ^c											0.73		
NSLP participants	230	2	0.1	1 ^	1	1	1	2	3	3 ^	0.73	13.2	4.06
NSLP nonparticipants	229	1	0.1	0 ^	1	1	1	2	2	3 ^	0.73	13.8	4.83
											0.73		
14 to 18 Years, Female ^c											0.71		
NSLP participants	171	1	0.0	0 ^	1 ^	1	1	1	2 ^	2 ^	0.71	24.7	3.82
NSLP nonparticipants	237	1	0.1	0 ^	0	1	1	1	2	2 ^	0.71	29.0	5.21
											0.71		
All Students											—		
NSLP participants	1,254	2	0.0	1	1	1	2	2	3	3	—	9.1	1.80
NSLP nonparticipants	911	2	0.1	0	1	1	1	2	3	3	—	16.6	3.51
											—		
All Students, Male											—		
NSLP participants	694	2	0.1	1	1	1	2	2	3	3	—	6.7	2.30
NSLP nonparticipants	431	2	0.1	0	1	1	2	2	3	3	—	13.6	4.47
											—		
All Students, Female											—		
NSLP participants	560	2	0.1	1	1	1	2	2	3	3	—	11.9	2.65
NSLP nonparticipants	480	2	0.1	0	0	1	1	2	3	3	—	19.9	5.02
											—		

	Protein Intakes (g/kg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (g/kg body weight) ^a	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	2	0.1	1	1	2	2	3	3	4	—	<3	1.58
NSLP nonparticipants	208	2	0.1	1 ^	1	1	2	2	3	3 ^	—	8.2 ^	4.29
Elementary School Students, Male											—		
NSLP participants	282	2	0.1	1 ^	1	2	2	3	3	4 ^	—	<3	1.82
NSLP nonparticipants	94	2	0.1	1 ^	1 ^	1	2	2	3 ^	3 ^	—	3.8 ^	2.57
Elementary School Students, Female											—		
NSLP participants	258	2	0.1	1 ^	1	1	2	3	3	4 ^	—	3.8 ^	2.44
NSLP nonparticipants	114	2	0.2	1 ^	1 ^	1	2	2	3 ^	4 ^	—	9.9 ^	6.65
Middle School Students											—		
NSLP participants	406	1	0.1	1	1	1	1	2	2	2	—	7.7	4.78
NSLP nonparticipants	308	1	0.1	1 ^	1	1	1	2	2	2 ^	—	10.3	3.31
Middle School Students, Male											—		
NSLP participants	239	1	0.1	1 ^	1	1	1	2	2	2 ^	—	3.1 ^	5.33
NSLP nonparticipants	144	1	0.1	1 ^	1 ^	1	1	2	2 ^	2 ^	—	6.2 ^	4.30
Middle School Students, Female											—		
NSLP participants	167	1	0.1	1 ^	1 ^	1	1	2	2 ^	2 ^	—	14.0	4.49
NSLP nonparticipants	164	1	0.1	1 ^	1 ^	1	1	1	2 ^	2 ^	—	12.2	8.12
High School Students											—		
NSLP participants	308	1	0.1	0 ^	1	1	1	2	2	3 ^	—	20.6	4.02
NSLP nonparticipants	395	1	0.1	0 ^	0	1	1	2	2	3 ^	—	24.6	4.59
High School Students, Male											—		
NSLP participants	173	2	0.2	1 ^	1 ^	1	1	2	3 ^	3 ^	—	14.0	4.70
NSLP nonparticipants	193	1	0.1	0 ^	1 ^	1	1	2	2 ^	3 ^	—	17.3	6.64
High School Students, Female											—		
NSLP participants	135	1	0.1	0 ^	1 ^	1	1	1	2 ^	2 ^	—	23.9	4.66
NSLP nonparticipants	202	1	0.1	0 ^	0	1	1	1	2	2 ^	—	30.7	5.53

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aFor students with a body mass index that fell with the healthy weight range (between 18.5 and 24.9), actual body weight was used to compute the EAR. For students outside of the healthy weight range, a weight was used that would place the student at the nearest end of the healthy weight range, based on his or her height.

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (0.66 g per kg of body weight for both groups).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; g = grams; kg = kilograms; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.23. Usual Daily Vitamin A Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Vitamin A Intakes (mcg RAE)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mcg RAE)	% Below EAR	SE
By Age/Gender Groups													
6 to 8 Years ^a											275		
NSLP participants	259	666	22.7	402 ^	450	539	650	774	906	988 ^	275	<3	0.8
NSLP nonparticipants	100	653	48.8	420 ^	465 ^	541	640	750	861 ^	929 ^	275	<3	2.63
9 to 13 Years											—		
NSLP participants	594	606	28.4	263	317	424	572	748	940	1,069	—	26.4	4.65
NSLP nonparticipants	345	642	37.6	366 ^	416	510	625	756	890	976 ^	—	12.0	9.92
9 to 13 Years, Male											445		
NSLP participants	336	628	26.7	281 ^	337	446	595	771	959	1,090 ^	445	24.9	5.55
NSLP nonparticipants	158	682	51.5	389 ^	442 ^	543	670	804	937 ^	1,023 ^	445	10.4 ^	8.86
9 to 13 Years, Female											420		
NSLP participants	258	579	43.6	238 ^	291	397	540	719	913	1,052 ^	420	28.8	6.71
NSLP nonparticipants	187	608	45.2	373 ^	416 ^	495	594	705	818 ^	896 ^	420	10.5 ^	14.99
14 to 18 Years ^b											—		
NSLP participants	401	624	32.9	270	324	429	579	769	981	1,131	—	47.6	3.98
NSLP nonparticipants	466	602	45.8	168	222	341	529	778	1,079	1,296	—	53.9	5.26
14 to 18 Years, Male ^b											630		
NSLP participants	230	721	49.0	296 ^	357	481	657	891	1,163	1,358 ^	630	46.3	6.49
NSLP nonparticipants	229	691	73.2	215 ^	280	412	611	884	1,206	1,442 ^	630	52.2	14.25
14 to 18 Years, Female ^b											485		
NSLP participants	171	504	28.7	306 ^	343 ^	407	492	587	686 ^	752 ^	485	48.0	40.96
NSLP nonparticipants	237	482	36.5	148 ^	195	296	440	619	825	974 ^	485	57.7	6.03
All Students											—		
NSLP participants	1,254	627	18.9	284	338	445	592	770	963	1,096	—	24.7	2.29
NSLP nonparticipants	911	633	21.5	276	332	444	598	782	979	1,112	—	26.2	4.51
All Students, Male											—		
NSLP participants	694	673	21.8	299	358	475	634	827	1,038	1,177	—	24.9	3.09
NSLP nonparticipants	431	698	28.9	344	402	516	670	846	1,030	1,160	—	22.6	6.93
All Students, Female											—		
NSLP participants	560	576	24.2	268	317	414	546	702	872	990	—	23.2	3.97
NSLP nonparticipants	480	562	32.0	236	286	391	533	696	878	993	—	27.9	5.07

	Vitamin A Intakes (mcg RAE)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mcg RAE)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	645	23.6	317	372	478	618	782	953	1,068	—	11.0	3.44
NSLP nonparticipants	208	598	41.9	310 ^	362	456	578	718	859	957 ^	—	11.2	6.78
Elementary School Students, Male											—		
NSLP participants	282	657	27.5	323 ^	380	491	631	796	967	1,077 ^	—	11.7	4.20
NSLP nonparticipants	94	731	69.0	351 ^	415 ^	534	701	889	1,089 ^	1,235 ^	—	7.0 ^	8.41
Elementary School Students, Female											—		
NSLP participants	258	633	34.9	312 ^	364	468	606	766	936	1,052 ^	—	10.2	5.49
NSLP nonparticipants	114	532	39.8	308 ^	350 ^	421	512	621	739 ^	817 ^	—	13.6 ^	5.78
Middle School Students											—		
NSLP participants	406	563	28.3	257	306	401	532	690	863	984	—	35.9	5.06
NSLP nonparticipants	308	578	30.7	220 ^	278	391	543	727	923	1,059 ^	—	36.4	7.75
Middle School Students, Male											—		
NSLP participants	239	635	41.8	287 ^	343	453	600	780	971	1,111 ^	—	30.3	7.64
NSLP nonparticipants	144	619	44.2	300 ^	355 ^	461	593	748	914 ^	1,039 ^	—	29.4	10.61
Middle School Students, Female											—		
NSLP participants	167	480	33.6	243 ^	285 ^	359	460	578	704 ^	787 ^	—	41.9	8.93
NSLP nonparticipants	164	534	46.9	151 ^	198 ^	311	476	690	943 ^	1,132 ^	—	43.8	7.69
High School Students											—		
NSLP participants	308	634	43.4	277 ^	331	438	590	777	992	1,149 ^	—	45.5	5.37
NSLP nonparticipants	395	633	48.5	195 ^	252	371	560	811	1,108	1,324 ^	—	50.4	5.43
High School Students, Male											—		
NSLP participants	173	742	56.0	310 ^	374 ^	498	679	916	1,194 ^	1,403 ^	—	42.8	11.45
NSLP nonparticipants	193	738	80.4	288 ^	354 ^	481	671	927	1,210 ^	1,428 ^	—	44.6	24.40
High School Students, Female											—		
NSLP participants	135	507	37.9	309 ^	343 ^	406	492	591	693 ^	764 ^	—	47.7	41.57
NSLP nonparticipants	202	511	37.5	159 ^	210	314	462	656	878	1,027 ^	—	53.7	6.12

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (625 mcg RAE and 500 mcg RAE, respectively).

Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; RAE = retinol activity equivalent; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.24. Usual Daily Vitamin C Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Vitamin C Intakes (mg)										EAR (mg) ^a % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^b											22		
NSLP participants	259	86	4.7	43 ^	51	64	82	103	126	141 ^	22	<3	0.57
NSLP nonparticipants	100	90	8.3	23 ^	30 ^	50	78	118	165 ^	198 ^	22	4.7 ^	2.78
9 to 13 Years											39		
NSLP participants	594	82	3.6	37	44	57	77	100	126	143	39	6.5	3.98
NSLP nonparticipants	345	78	7.4	16 ^	22	38	64	102	151	188 ^	39	25.9	6.31
9 to 13 Years, Male											39		
NSLP participants	336	80	4.8	36 ^	43	56	75	98	123	140 ^	39	7.2	4.98
NSLP nonparticipants	158	92	9.6	26 ^	34 ^	52	82	120	165 ^	198 ^	39	13.9	5.94
9 to 13 Years, Female											39		
NSLP participants	258	85	4.8	38 ^	45	60	80	104	130	148 ^	39	5.7 ^	5.74
NSLP nonparticipants	187	66	8.9	12 ^	17 ^	29	51	85	131 ^	169 ^	39	37.6	9.34
14 to 18 Years ^c											—		
NSLP participants	401	73	4.5	21	28	42	65	94	128	152	—	45.1	5.27
NSLP nonparticipants	466	84	6.4	16	23	40	68	110	164	204	—	43.2	5.12
14 to 18 Years, Male ^c											63		
NSLP participants	230	73	5.5	28 ^	34	48	67	91	119	138 ^	63	45.2	9.45
NSLP nonparticipants	229	90	9.1	17 ^	25	42	73	119	178	224 ^	63	42.8	7.46
14 to 18 Years, Female ^c											56		
NSLP participants	171	72	7.1	12 ^	19 ^	34	61	97	142 ^	175 ^	56	46.2	5.35
NSLP nonparticipants	237	75	9.3	16 ^	22	37	62	97	144	182 ^	56	45.3	8.28
All Students											—		
NSLP participants	1,254	81	2.7	35	42	56	76	99	125	142	—	11.9	3.88
NSLP nonparticipants	911	81	4.3	20	27	43	70	106	151	184	—	24.5	4.70
All Students, Male											—		
NSLP participants	694	78	3.4	34	41	55	74	97	123	140	—	15.1	4.65
NSLP nonparticipants	431	91	6.5	20	28	47	78	119	170	209	—	23.5	4.88
All Students, Female											—		
NSLP participants	560	83	3.5	36	44	58	78	102	127	145	—	8.9	4.98
NSLP nonparticipants	480	71	4.6	19	25	40	62	92	129	155	—	25.6	8.00

	Vitamin C Intakes (mg)										EAR (mg) ^a	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	87	3.0	49	56	68	84	103	121	133	—	<3	1.72
NSLP nonparticipants	208	87	8.5	25 ^	33	50	76	112	153	185 ^	—	9.2 ^	6.35
Elementary School Students, Male											—		
NSLP participants	282	82	4.4	36 ^	44	58	77	101	126	142 ^	—	4.5 ^	4.05
NSLP nonparticipants	94	98	13.1	24 ^	34 ^	54	85	128	178 ^	215 ^	—	8.8 ^	4.71
Elementary School Students, Female											—		
NSLP participants	258	94	4.0	44 ^	52	68	89	114	141	159 ^	—	<3	2.15
NSLP nonparticipants	114	82	9.8	25 ^	32 ^	47	70	103	146 ^	177 ^	—	9.9 ^	9.82
Middle School Students											—		
NSLP participants	406	73	3.3	33	39	52	69	90	113	130	—	14.6	14.40
NSLP nonparticipants	308	70	6.1	14 ^	21	36	59	93	132	162 ^	—	33.2	5.42
Middle School Students, Male											—		
NSLP participants	239	80	4.2	36 ^	43	56	75	98	122	139 ^	—	12.6	5.71
NSLP nonparticipants	144	84	9.6	25 ^	33 ^	50	75	107	145 ^	176 ^	—	19.2	9.54
Middle School Students, Female											—		
NSLP participants	167	66	5.3	13 ^	19 ^	31	53	86	129 ^	161 ^	—	36.7	6.44
NSLP nonparticipants	164	52	6.4	7 ^	11 ^	22	41	69	107 ^	138 ^	—	51.6	5.05
High School Students											—		
NSLP participants	308	71	5.1	17 ^	24	38	62	92	129	157 ^	—	48.3	4.57
NSLP nonparticipants	395	86	7.6	13 ^	20	37	68	114	176	224 ^	—	44.5	4.79
High School Students, Male											—		
NSLP participants	173	69	5.8	21 ^	28 ^	41	62	89	121 ^	145 ^	—	51.0	5.88
NSLP nonparticipants	193	86	10.1	11 ^	18 ^	33	64	115	182 ^	240 ^	—	49.5	6.97
High School Students, Female											—		
NSLP participants	135	73	8.4	13 ^	20 ^	35	60	97	141 ^	175 ^	—	45.9	7.17
NSLP nonparticipants	202	91	12.1	17 ^	24	42	73	120	182	228 ^	—	36.5	9.41

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (75 mg and 60 mg, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.25. Usual Daily Vitamin D Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

Vitamin D Intakes (mcg)											EAR (mcg) % Below EAR SE		
Percentiles													
N	Mean	SE	5	10	25	50	75	90	95				
By Age/Gender Groups													
6 to 8 Years ^a											10		
NSLP participants	259	10.6	0.95	3.8 ^	4.7	6.5	9.4	13.3	17.9	21.5 ^	10	54.6	6.62
NSLP nonparticipants	100	6.2	0.45	3.1 ^	3.7 ^	4.7	6.0	7.5	9.0 ^	9.9 ^	10	95.5^	6.15
9 to 13 Years											10		
NSLP participants	594	8.4	0.59	2.4	3.1	4.7	7.2	10.8	15.3	18.6	10	70.7	3.99
NSLP nonparticipants	345	5.7	0.46	1.4 ^	1.9	3.1	4.9	7.4	10.4	12.6 ^	10	88.4	4.25
9 to 13 Years, Male											10		
NSLP participants	336	8.6	0.41	2.8 ^	3.5	5.2	7.6	10.9	14.7	17.5 ^	10	69.5	3.50
NSLP nonparticipants	158	6.9	0.68	2.1 ^	2.6 ^	4.0	6.1	8.9	12.2 ^	14.6 ^	10	81.7	7.13
9 to 13 Years, Female											10		
NSLP participants	258	8.1	1.05	2.2 ^	2.9	4.4	6.8	10.4	14.9	18.6 ^	10	73.0	7.09
NSLP nonparticipants	187	4.6	0.44	1.0 ^	1.5 ^	2.5	4.0	6.0	8.3 ^	10.0 ^	10	95.0^	2.52
14 to 18 Years ^b											10		
NSLP participants	401	7.7	0.67	2.5	3.1	4.6	6.8	9.8	13.4	16.1	10	76.1	7.58
NSLP nonparticipants	466	6.9	0.93	1.2	1.7	3.0	5.4	9.1	13.9	17.7	10	79.3	5.57
14 to 18 Years, Male ^b											10		
NSLP participants	230	9.4	0.85	4.2 ^	4.9	6.5	8.7	11.5	14.5	16.8 ^	10	63.4	8.86
NSLP nonparticipants	229	8.7	1.57	0.7 ^	1.2	2.7	5.8	11.4	19.5	26.4 ^	10	70.6	5.88
14 to 18 Years, Female ^b											10		
NSLP participants	171	5.3	0.63	1.3 ^	1.7 ^	2.7	4.4	6.9	10.0 ^	12.5 ^	10	90.0 ^	4.24
NSLP nonparticipants	237	4.9	0.57	1.6 ^	2.0	3.0	4.4	6.2	8.4	10.1 ^	10	94.8 ^	4.24
All Students											—		
NSLP participants	1,254	8.7	0.48	2.8	3.6	5.1	7.6	10.9	15.1	18.2	—	69.4	3.46
NSLP nonparticipants	911	6.2	0.37	1.5	2.1	3.3	5.3	8.1	11.4	13.7	—	85.3	3.13
All Students, Male											—		
NSLP participants	694	9.5	0.52	4.1	4.9	6.5	8.7	11.7	15.1	17.4	—	62.4	5.15
NSLP nonparticipants	431	7.5	0.61	1.6	2.3	3.8	6.3	9.8	14.2	17.6	—	75.8	4.46
All Students, Female											—		
NSLP participants	560	7.7	0.57	1.8	2.4	3.9	6.3	9.8	14.5	18.2	—	75.9	3.50
NSLP nonparticipants	480	4.8	0.32	1.6	2.1	3.0	4.5	6.2	8.2	9.4	—	96.2^	2.02

	Vitamin D Intakes (mcg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mcg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	9.0	0.66	3.3	4.0	5.5	7.9	11.2	15.3	18.5	—	67.5	5.02
NSLP nonparticipants	208	5.2	0.34	1.9 ^	2.4	3.4	4.9	6.6	8.4	9.7 ^	—	95.7^	3.03
Elementary School Students, Male											—		
NSLP participants	282	9.3	0.74	4.3 ^	5.0	6.5	8.6	11.4	14.5	16.7 ^	—	64.1	10.65
NSLP nonparticipants	94	6.4	0.56	1.8 ^	2.5 ^	3.8	5.8	8.4	11.2 ^	13.2 ^	—	85.4 ^	7.33
Elementary School Students, Female											—		
NSLP participants	258	8.6	0.86	2.1 ^	2.7	4.2	6.8	10.7	16.3	21.1 ^	—	71.7	4.74
NSLP nonparticipants	114	4.5	0.34	2.3 ^	2.7 ^	3.4	4.3	5.4	6.5 ^	7.3 ^	—	>97	1.29
Middle School Students											—		
NSLP participants	406	8.5	0.62	3.1	3.8	5.4	7.7	10.7	14.2	16.7	—	70.4	5.83
NSLP nonparticipants	308	6.8	0.80	1.8 ^	2.4	3.8	5.9	8.8	12.2	14.8 ^	—	81.9	8.22
Middle School Students, Male											—		
NSLP participants	239	9.7	0.86	4.1 ^	4.9	6.6	9.0	12.0	15.4	17.9 ^	—	59.5	30.49
NSLP nonparticipants	144	8.0	1.28	2.3 ^	3.0 ^	4.5	6.9	10.2	14.4 ^	18.0 ^	—	73.9	12.65
Middle School Students, Female											—		
NSLP participants	167	7.1	0.73	2.3 ^	3.0 ^	4.3	6.3	9.0	12.2 ^	14.4 ^	—	81.0	9.44
NSLP nonparticipants	164	5.1	0.52	1.4 ^	1.9 ^	3.0	4.6	6.6	9.0 ^	10.7 ^	—	93.6 ^	4.27
High School Students											—		
NSLP participants	308	7.8	0.76	2.1 ^	2.8	4.3	6.7	10.0	14.2	17.4 ^	—	75.1	5.34
NSLP nonparticipants	395	6.5	0.74	1.5 ^	2.0	3.3	5.4	8.4	12.3	15.2 ^	—	82.7	5.19
High School Students, Male											—		
NSLP participants	173	9.6	1.05	4.1 ^	4.9 ^	6.5	8.8	11.8	15.3 ^	17.9 ^	—	60.7	9.51
NSLP nonparticipants	193	7.9	1.11	0.8 ^	1.3 ^	2.7	5.5	10.5	17.4 ^	23.6 ^	—	73.3	4.91
High School Students, Female											—		
NSLP participants	135	5.6	0.60	1.4 ^	1.8 ^	2.8	4.6	7.2	10.4 ^	13.0 ^	—	88.7 ^	4.05
NSLP nonparticipants	202	5.1	0.64	2.1 ^	2.6	3.5	4.7	6.3	8.2	9.4 ^	—	96.4 ^	4.70

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] = Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 97 and 100 percent are displayed as >97.

Table I.26. Usual Daily Vitamin E Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Vitamin E Intakes (mg AT)										EAR (mg)	% Below EAR	SE
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											6		
NSLP participants	259	6.8	0.30	4.1 ^	4.6	5.4	6.6	7.9	9.4	10.5 ^	6	37.3	6.17
NSLP nonparticipants	100	7.0	0.41	3.2 ^	3.8 ^	5.0	6.7	8.7	10.8 ^	12.2 ^	6	40.4	9.68
9 to 13 Years											9		
NSLP participants	594	6.7	0.19	4.1	4.5	5.3	6.4	7.8	9.2	10.1	9	88.7	3.25
NSLP nonparticipants	345	7.9	0.44	3.9 ^	4.6	5.8	7.4	9.5	11.7	13.2 ^	9	70.5	6.53
9 to 13 Years, Male											9		
NSLP participants	336	7.2	0.26	4.0 ^	4.5	5.5	6.8	8.4	10.2	11.4 ^	9	81.4	3.59
NSLP nonparticipants	158	8.4	0.52	5.8 ^	6.2 ^	7.1	8.2	9.5	10.8 ^	11.7 ^	9	66.6	24.98
9 to 13 Years, Female											9		
NSLP participants	258	6.2	0.26	4.2 ^	4.6	5.2	6.0	7.0	8.0	8.6 ^	9	96.7 ^	3.66
NSLP nonparticipants	187	7.4	0.73	3.1 ^	3.8 ^	5.1	6.9	9.1	11.6 ^	13.4 ^	9	74.1	9.43
14 to 18 Years ^b											12		
NSLP participants	401	8.1	0.46	3.6	4.2	5.5	7.3	9.8	12.8	15.0	12	87.0	5.27
NSLP nonparticipants	466	8.3	0.36	3.4	4.1	5.5	7.5	10.2	13.5	15.9	12	84.8	3.52
14 to 18 Years, Male ^b											12		
NSLP participants	230	8.9	0.63	4.6 ^	5.3	6.6	8.3	10.6	13.1	14.9 ^	12	84.8	9.03
NSLP nonparticipants	229	8.7	0.55	3.8 ^	4.5	5.9	7.9	10.6	13.8	16.2 ^	12	82.9	5.21
14 to 18 Years, Female ^b											12		
NSLP participants	171	7.0	0.57	2.5 ^	3.1 ^	4.2	6.1	8.8	12.2 ^	14.9 ^	12	89.5 ^	3.72
NSLP nonparticipants	237	7.8	0.47	3.1 ^	3.8	5.1	7.1	9.6	12.6	14.9 ^	12	88.0	4.38
All Students											—		
NSLP participants	1,254	7.0	0.19	4.2	4.6	5.5	6.8	8.2	9.8	10.9	—	73.6	2.35
NSLP nonparticipants	911	7.8	0.23	3.6	4.2	5.5	7.3	9.5	12.0	13.8	—	68.2	2.17
All Students, Male											—		
NSLP participants	694	7.5	0.27	4.3	4.8	5.8	7.2	8.9	10.7	12.0	—	69.2	2.79
NSLP nonparticipants	431	8.2	0.32	4.0	4.6	5.9	7.7	9.9	12.4	14.2	—	66.4	3.75
All Students, Female											—		
NSLP participants	560	6.5	0.24	4.2	4.6	5.4	6.3	7.4	8.6	9.4	—	79.6	3.38
NSLP nonparticipants	480	7.3	0.35	3.3	3.9	5.1	6.9	9.0	11.4	13.0	—	70.6	3.62

	Vitamin E Intakes (mg AT)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
NSLP participants	538	6.7	0.22	4.4	4.8	5.6	6.5	7.7	8.8	9.6	—	64.4	3.34
NSLP nonparticipants	208	7.2	0.53	2.9 ^	3.6	4.9	6.7	9.0	11.4	13.2 ^	—	57.7	5.85
Elementary School Students, Male											—		
NSLP participants	282	7.0	0.26	4.2 ^	4.6	5.5	6.7	8.1	9.6	10.7 ^	—	60.9	3.48
NSLP nonparticipants	94	7.4	0.79	2.5 ^	3.2 ^	4.6	6.6	9.4	12.6 ^	15.0 ^	—	56.9	8.48
Elementary School Students, Female											—		
NSLP participants	258	6.6	0.25	4.4 ^	4.8	5.5	6.5	7.6	8.7	9.5 ^	—	65.2	5.21
NSLP nonparticipants	114	7.2	0.66	3.3 ^	4.0 ^	5.2	6.8	8.8	11.0 ^	12.5 ^	—	57.0	8.41
Middle School Students											—		
NSLP participants	406	6.5	0.27	3.7	4.2	5.1	6.2	7.6	9.2	10.3	—	90.7	5.09
NSLP nonparticipants	308	7.3	0.23	3.3 ^	4.0	5.2	6.8	8.9	11.2	12.8 ^	—	79.4	3.53
Middle School Students, Male											—		
NSLP participants	239	6.9	0.33	4.0 ^	4.5	5.4	6.6	8.0	9.5	10.7 ^	—	88.0	4.59
NSLP nonparticipants	144	8.1	0.38	4.6 ^	5.2 ^	6.4	7.8	9.5	11.4 ^	12.8 ^	—	73.1	9.89
Middle School Students, Female											—		
NSLP participants	167	5.9	0.35	3.0 ^	3.4 ^	4.3	5.5	7.0	8.8 ^	10.1 ^	—	92.3 ^	3.56
NSLP nonparticipants	164	6.2	0.38	2.7 ^	3.2 ^	4.3	5.7	7.6	9.8 ^	11.5 ^	—	88.0 ^	4.72
High School Students											—		
NSLP participants	308	8.2	0.52	3.6 ^	4.2	5.5	7.5	10.0	13.1	15.4 ^	—	85.5	5.82
NSLP nonparticipants	395	8.6	0.51	3.3 ^	4.0	5.4	7.7	10.7	14.3	17.0 ^	—	81.9	4.60
High School Students, Male											—		
NSLP participants	173	9.3	0.74	4.9 ^	5.6 ^	6.9	8.8	11.2	13.9 ^	15.9 ^	—	80.4	10.47
NSLP nonparticipants	193	9.0	0.72	3.6 ^	4.3 ^	5.7	8.0	11.2	14.9 ^	17.9 ^	—	79.7	5.98
High School Students, Female											—		
NSLP participants	135	6.9	0.54	2.4 ^	3.0 ^	4.1	6.0	8.6	11.9 ^	14.6 ^	—	90.0 ^	3.65
NSLP nonparticipants	202	8.3	0.61	3.1 ^	3.8	5.3	7.4	10.3	13.8	16.3 ^	—	83.8	5.74

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.27. Usual Daily Vitamin B₆ Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Vitamin B ₆ Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											0.5		
NSLP participants	259	1.9	0.07	1.3 ^	1.4	1.6	1.8	2.1	2.5	2.7 ^	0.5	<3	0.00
NSLP nonparticipants	100	1.8	0.08	0.9 ^	1.1 ^	1.4	1.7	2.2	2.7 ^	3.0 ^	0.5	<3	0.17
9 to 13 Years											0.8		
NSLP participants	594	1.9	0.07	1.2	1.3	1.5	1.9	2.2	2.7	3.0	0.8	<3	0.33
NSLP nonparticipants	345	1.9	0.07	1.0 ^	1.2	1.5	1.8	2.3	2.7	3.0 ^	0.8	<3	1.25
9 to 13 Years, Male											0.8		
NSLP participants	336	2.0	0.09	1.4 ^	1.5	1.7	2.0	2.3	2.6	2.8 ^	0.8	<3	0.21
NSLP nonparticipants	158	2.0	0.11	1.0 ^	1.1 ^	1.5	1.9	2.5	3.1 ^	3.5 ^	0.8	<3	2.24
9 to 13 Years, Female											0.8		
NSLP participants	258	1.8	0.11	0.9 ^	1.1	1.3	1.7	2.2	2.7	3.0 ^	0.8	<3	2.16
NSLP nonparticipants	187	1.8	0.09	1.1 ^	1.3 ^	1.5	1.7	2.1	2.4 ^	2.6 ^	0.8	<3	0.52
14 to 18 Years ^b											—		
NSLP participants	401	2.0	0.11	1.3	1.4	1.7	2.0	2.3	2.7	3.0	—	<3	2.91
NSLP nonparticipants	466	2.1	0.14	0.8	1.0	1.3	1.9	2.6	3.5	4.1	—	13.7	3.47
14 to 18 Years, Male ^b											1.1		
NSLP participants	230	2.2	0.12	1.5 ^	1.6	1.9	2.2	2.5	2.9	3.1 ^	1.1	<3	0.60
NSLP nonparticipants	229	2.2	0.16	0.9 ^	1.1	1.5	2.1	2.8	3.6	4.2 ^	1.1	10.2	4.21
14 to 18 Years, Female ^b											1.0		
NSLP participants	171	1.7	0.10	1.0 ^	1.1 ^	1.3	1.6	2.0	2.4 ^	2.7 ^	1.0	5.6 ^	7.26
NSLP nonparticipants	237	1.8	0.20	0.8 ^	0.9	1.2	1.6	2.2	2.9	3.5 ^	1.0	14.8	6.30
All Students											—		
NSLP participants	1,254	1.9	0.05	1.3	1.4	1.6	1.9	2.2	2.5	2.7	—	<3	0.43
NSLP nonparticipants	911	1.9	0.06	1.0	1.1	1.4	1.8	2.3	2.8	3.2	—	3.3	1.28
All Students, Male											—		
NSLP participants	694	2.1	0.06	1.4	1.5	1.7	2.0	2.3	2.7	2.9	—	<3	0.32
NSLP nonparticipants	431	2.1	0.07	0.9	1.1	1.4	1.9	2.5	3.2	3.6	—	5.0	1.97
All Students, Female											—		
NSLP participants	560	1.8	0.07	1.1	1.2	1.4	1.7	2.0	2.4	2.6	—	<3	1.58
NSLP nonparticipants	480	1.8	0.08	1.1	1.2	1.4	1.7	2.0	2.4	2.6	—	<3	1.02

	Vitamin B ₆ Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	1.9	0.04	1.3	1.4	1.6	1.9	2.1	2.4	2.6	—	<3	0.16
NSLP nonparticipants	208	1.8	0.08	0.9 ^	1.0	1.3	1.7	2.1	2.6	2.9 ^	—	<3	0.95
Elementary School Students, Male											—		
NSLP participants	282	2.0	0.07	1.4 ^	1.5	1.7	1.9	2.2	2.5	2.7 ^	—	<3	0.11
NSLP nonparticipants	94	1.8	0.13	0.9 ^	1.1 ^	1.4	1.8	2.2	2.6 ^	2.9 ^	—	<3	2.24
Elementary School Students, Female											—		
NSLP participants	258	1.8	0.09	1.2 ^	1.3	1.5	1.8	2.1	2.4	2.6 ^	—	<3	0.46
NSLP nonparticipants	114	1.7	0.09	0.9 ^	1.0 ^	1.3	1.6	2.0	2.4 ^	2.7 ^	—	<3	1.09
Middle School Students											—		
NSLP participants	406	1.9	0.10	1.2	1.3	1.5	1.8	2.1	2.5	2.7	—	<3	1.41
NSLP nonparticipants	308	1.9	0.09	0.7 ^	0.9	1.2	1.7	2.4	3.1	3.7 ^	—	10.3	2.63
Middle School Students, Male											—		
NSLP participants	239	2.0	0.11	1.4 ^	1.5	1.7	2.0	2.3	2.6	2.8 ^	—	<3	0.24
NSLP nonparticipants	144	2.0	0.12	0.9 ^	1.0 ^	1.4	1.8	2.5	3.3 ^	4.0 ^	—	5.7^	2.74
Middle School Students, Female											—		
NSLP participants	167	1.6	0.10	0.9 ^	1.0 ^	1.2	1.5	1.9	2.2 ^	2.5 ^	—	3.2 ^	3.73
NSLP nonparticipants	164	1.7	0.14	0.6 ^	0.8 ^	1.1	1.5	2.1	2.8 ^	3.3 ^	—	13.0	6.60
High School Students											—		
NSLP participants	308	2.1	0.13	1.4 ^	1.5	1.7	2.0	2.4	2.7	3.0 ^	—	<3	3.10
NSLP nonparticipants	395	2.2	0.18	0.8 ^	1.0	1.3	1.9	2.7	3.6	4.4 ^	—	12.8	3.95
High School Students, Male											—		
NSLP participants	173	2.2	0.16	1.5 ^	1.6 ^	1.9	2.2	2.5	2.9 ^	3.1 ^	—	<3	0.59
NSLP nonparticipants	193	2.3	0.18	0.9 ^	1.1 ^	1.5	2.0	2.8	3.7 ^	4.4 ^	—	11.5	4.32
High School Students, Female											—		
NSLP participants	135	1.8	0.12	1.0 ^	1.1 ^	1.3	1.7	2.1	2.5 ^	2.9 ^	—	5.7 ^	6.97
NSLP nonparticipants	202	2.0	0.30	0.8 ^	1.0	1.3	1.8	2.5	3.4	4.0 ^	—	11.2	6.06

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (1.1 mg for both groups).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.28. Usual Daily Vitamin B₁₂ Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Vitamin B ₁₂ Intakes (mcg)										EAR (mcg)	% Below EAR	SE
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											1.0		
NSLP participants	259	5.5	0.17	3.0 ^	3.4	4.2	5.2	6.5	7.8	8.8 ^	1.0	<3	0.00
NSLP nonparticipants	100	4.7	0.25	2.4 ^	2.8 ^	3.6	4.5	5.7	6.8 ^	7.5 ^	1.0	<3	0.22
9 to 13 Years											1.5		
NSLP participants	594	5.3	0.24	2.7	3.1	3.9	5.0	6.3	7.8	8.9	1.5	<3	0.22
NSLP nonparticipants	345	4.9	0.30	2.0 ^	2.4	3.4	4.6	6.1	7.7	8.8 ^	1.5	<3	2.09
9 to 13 Years, Male											1.5		
NSLP participants	336	5.5	0.27	2.8 ^	3.2	4.0	5.2	6.6	8.1	9.2 ^	1.5	<3	0.36
NSLP nonparticipants	158	5.4	0.39	2.8 ^	3.2 ^	4.1	5.2	6.5	7.8 ^	8.7 ^	1.5	<3	1.98
9 to 13 Years, Female											1.5		
NSLP participants	258	5.0	0.34	2.4 ^	2.8	3.6	4.7	6.1	7.6	8.7 ^	1.5	<3	0.58
NSLP nonparticipants	187	4.5	0.48	1.5 ^	1.9 ^	2.8	4.1	5.7	7.4 ^	8.7 ^	1.5	5.0 ^	3.68
14 to 18 Years ^b											2.0		
NSLP participants	401	5.5	0.34	2.6	3.0	3.8	5.1	6.7	8.6	9.9	2.0	<3	2.83
NSLP nonparticipants	466	5.1	0.44	1.1	1.6	2.6	4.2	6.6	9.6	11.9	2.0	16.3	3.33
14 to 18 Years, Male ^b											2.0		
NSLP participants	230	6.1	0.34	3.8 ^	4.2	5.0	6.0	7.1	8.2	9.0 ^	2.0	<3	0.15
NSLP nonparticipants	229	5.6	0.53	1.2 ^	1.7	2.8	4.7	7.3	10.6	13.1 ^	2.0	13.5	5.37
14 to 18 Years, Female ^b											2.0		
NSLP participants	171	4.4	0.37	1.8 ^	2.1 ^	2.8	3.9	5.4	7.2 ^	8.6 ^	2.0	8.1 ^	7.48
NSLP nonparticipants	237	4.4	0.56	1.2 ^	1.5	2.4	3.7	5.6	8.0	9.9 ^	2.0	17.9	3.91
All Students											—		
NSLP participants	1,254	5.3	0.15	2.9	3.3	4.0	5.1	6.3	7.6	8.5	—	<3	0.26
NSLP nonparticipants	911	4.9	0.19	1.7	2.1	3.1	4.5	6.2	8.2	9.5	—	4.4	1.75
All Students, Male											—		
NSLP participants	694	5.7	0.18	3.5	3.9	4.6	5.5	6.6	7.8	8.5	—	<3	0.15
NSLP nonparticipants	431	5.5	0.24	2.1	2.6	3.6	5.1	6.9	8.9	10.3	—	<3	2.34
All Students, Female											—		
NSLP participants	560	4.8	0.18	2.3	2.7	3.5	4.5	5.8	7.3	8.3	—	<3	0.78
NSLP nonparticipants	480	4.3	0.29	1.5	1.9	2.7	3.9	5.4	7.1	8.3	—	5.9	2.35

	Vitamin B ₁₂ Intakes (mcg)										EAR (mcg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	5.2	0.19	3.1	3.5	4.1	5.1	6.1	7.3	8.0	—	<3	0.07
NSLP nonparticipants	208	4.2	0.21	2.1 ^	2.5	3.2	4.1	5.1	6.1	6.8 ^	—	<3	1.12
Elementary School Students, Male											—		
NSLP participants	282	5.4	0.19	3.3 ^	3.6	4.3	5.2	6.2	7.3	8.0 ^	—	<3	0.09
NSLP nonparticipants	94	5.1	0.32	2.3 ^	2.8 ^	3.7	4.9	6.3	7.8 ^	8.8 ^	—	<3	2.11
Elementary School Students, Female											—		
NSLP participants	258	5.1	0.27	2.8 ^	3.2	3.9	4.9	6.0	7.3	8.2 ^	—	<3	0.09
NSLP nonparticipants	114	3.7	0.23	2.2 ^	2.5 ^	3.0	3.6	4.2	4.9 ^	5.3 ^	—	<3	0.96
Middle School Students											—		
NSLP participants	406	5.0	0.23	2.8	3.2	3.9	4.8	5.9	7.0	7.8	—	<3	0.80
NSLP nonparticipants	308	4.9	0.42	1.6 ^	2.1	3.1	4.5	6.3	8.3	9.7 ^	—	5.2 ^	3.39
Middle School Students, Male											—		
NSLP participants	239	5.5	0.33	3.4 ^	3.8	4.5	5.4	6.5	7.5	8.3 ^	—	<3	0.39
NSLP nonparticipants	144	5.2	0.41	2.3 ^	2.8 ^	3.7	4.9	6.3	7.9 ^	9.0 ^	—	<3	2.03
Middle School Students, Female											—		
NSLP participants	167	4.3	0.28	2.6 ^	2.9 ^	3.4	4.1	5.0	5.8 ^	6.4 ^	—	<3	1.89
NSLP nonparticipants	164	4.7	0.93	0.9 ^	1.2 ^	2.2	3.7	6.1	9.3 ^	12.0 ^	—	16.1	4.76
High School Students											—		
NSLP participants	308	5.7	0.39	2.6 ^	3.0	3.9	5.3	7.0	9.0	10.5 ^	—	<3	2.59
NSLP nonparticipants	395	5.3	0.51	1.2 ^	1.6	2.6	4.3	6.9	10.2	12.8 ^	—	15.6	2.86
High School Students, Male											—		
NSLP participants	173	6.4	0.40	4.0 ^	4.4 ^	5.2	6.3	7.5	8.7 ^	9.5 ^	—	<3	0.10
NSLP nonparticipants	193	5.8	0.53	1.3 ^	1.8 ^	2.9	4.8	7.6	10.9 ^	13.6 ^	—	12.5	5.63
High School Students, Female											—		
NSLP participants	135	4.5	0.40	1.6 ^	1.9 ^	2.7	3.9	5.7	7.9 ^	9.7 ^	—	11.3 ^	5.80
NSLP nonparticipants	202	4.9	0.89	1.2 ^	1.6	2.5	4.0	6.3	9.3	11.7 ^	—	16.2	4.00

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.29. Usual Daily Folate Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Folate Intakes (mcg DFE)										EAR (mcg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											160		
NSLP participants	259	537	18.4	316 ^	353	426	518	627	746	824 ^	160	<3	0.07
NSLP nonparticipants	100	521	36.1	328 ^	364 ^	426	508	601	696 ^	755 ^	160	<3	0.29
9 to 13 Years											250		
NSLP participants	594	533	21.7	316	352	421	513	622	742	823	250	<3	1.62
NSLP nonparticipants	345	646	37.2	254 ^	305	414	574	796	1,070	1,275 ^	250	4.6 ^	2.12
9 to 13 Years, Male											250		
NSLP participants	336	556	24.3	338 ^	375	444	537	645	760	842 ^	250	<3	1.77
NSLP nonparticipants	158	668	50.8	297 ^	347 ^	453	613	815	1,059 ^	1,240 ^	250	<3	2.30
9 to 13 Years, Female											250		
NSLP participants	258	508	33.0	293 ^	328	396	485	595	714	800 ^	250	<3	2.58
NSLP nonparticipants	187	633	62.5	232 ^	283 ^	390	554	783	1,071 ^	1,303 ^	250	6.5 ^	3.49
14 to 18 Years ^b											330		
NSLP participants	401	554	28.1	283	325	406	520	664	827	944	330	10.7	6.09
NSLP nonparticipants	466	563	44.6	153	198	301	472	717	1,041	1,292	330	29.5	4.11
14 to 18 Years, Male ^b											330		
NSLP participants	230	629	39.5	333 ^	380	471	593	748	924	1,047 ^	330	4.7 ^	4.77
NSLP nonparticipants	229	670	83.3	185 ^	238	354	546	843	1,245	1,573 ^	330	22.0	5.98
14 to 18 Years, Female ^b											330		
NSLP participants	171	446	27.0	264 ^	293 ^	350	430	521	621 ^	691 ^	330	19.3	9.38
NSLP nonparticipants	237	428	24.9	147 ^	187	271	391	541	717	847 ^	330	37.1	5.01
All Students											—		
NSLP participants	1,254	540	14.2	308	345	417	515	635	768	860	—	2.7	1.45
NSLP nonparticipants	911	591	22.6	213	261	365	524	740	1,001	1,195	—	10.7	2.53
All Students, Male											—		
NSLP participants	694	578	18.7	333	373	450	553	678	816	909	—	<3	1.44
NSLP nonparticipants	431	650	39.7	240	292	404	578	810	1,092	1,314	—	8.0	2.84
All Students, Female											—		
NSLP participants	560	497	22.0	289	323	388	477	581	695	777	—	3.7	2.50
NSLP nonparticipants	480	527	33.8	190	234	331	476	661	889	1,043	—	13.4	3.73

	Folate Intakes (mcg DFE)										EAR (mcg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	535	14.3	327	362	429	518	621	730	805	—	<3	0.60
NSLP nonparticipants	208	571	52.9	229 ^	277	374	518	707	927	1,096 ^	—	3.9 ^	2.74
Elementary School Students, Male											—		
NSLP participants	282	551	21.8	339 ^	377	448	536	638	744	813 ^	—	<3	0.73
NSLP nonparticipants	94	614	48.5	386 ^	432 ^	506	599	708	814 ^	888 ^	—	<3	2.97
Elementary School Students, Female											—		
NSLP participants	258	517	23.2	308 ^	342	408	498	602	716	796 ^	—	<3	0.95
NSLP nonparticipants	114	548	74.8	222 ^	267 ^	356	486	670	904 ^	1,079 ^	—	4.1 ^	2.98
Middle School Students											—		
NSLP participants	406	510	18.4	267	304	378	481	609	755	862	—	5.4	4.03
NSLP nonparticipants	308	567	47.4	206 ^	253	350	499	704	959	1,159 ^	—	12.4	3.29
Middle School Students, Male											—		
NSLP participants	239	563	26.2	291 ^	333	416	529	672	832	955 ^	—	3.4 ^	4.11
NSLP nonparticipants	144	617	78.6	215 ^	263 ^	370	530	761	1,066 ^	1,339 ^	—	10.6 ^	4.06
Middle School Students, Female											—		
NSLP participants	167	454	22.5	260 ^	293 ^	352	433	532	642 ^	718 ^	—	5.9 ^	4.98
NSLP nonparticipants	164	503	38.2	253 ^	289 ^	366	472	602	754 ^	869 ^	—	6.9 ^	6.86
High School Students											—		
NSLP participants	308	572	34.8	304 ^	346	429	542	680	836	950 ^	—	7.7	6.89
NSLP nonparticipants	395	564	50.8	156 ^	201	298	466	715	1,045	1,308 ^	—	30.0	4.05
High School Students, Male											—		
NSLP participants	173	649	47.9	349 ^	398 ^	488	614	770	946 ^	1,074 ^	—	3.6 ^	5.55
NSLP nonparticipants	193	659	91.8	180 ^	231 ^	341	531	834	1,234 ^	1,584 ^	—	23.6	6.09
High School Students, Female											—		
NSLP participants	135	463	32.3	280 ^	310 ^	366	447	539	640 ^	708 ^	—	14.5 ^	9.59
NSLP nonparticipants	202	465	30.4	149 ^	192	281	412	590	808	960 ^	—	34.0	4.48

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (320 mcg for both groups).

DFE = dietary folate equivalents; DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.30. Usual Daily Niacin Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Niacin Intakes (mg)										EAR (mg)	% Below EAR ^a	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^b											6		
NSLP participants	259	21	0.6	15 ^	16	18	21	24	27	29 ^	6	<3	0.00
NSLP nonparticipants	100	22	0.9	12 ^	13 ^	17	21	26	31 ^	34 ^	6	<3	0.16
9 to 13 Years											9		
NSLP participants	593	23	0.7	16	17	19	22	25	29	31	9	<3	0.02
NSLP nonparticipants	345	24	1.1	12 ^	14	18	23	29	35	39 ^	9	<3	0.87
9 to 13 Years, Male											9		
NSLP participants	335	24	0.8	17 ^	18	21	23	26	29	32 ^	9	<3	0.00
NSLP nonparticipants	158	25	1.2	14 ^	16 ^	19	24	30	36 ^	41 ^	9	<3	0.37
9 to 13 Years, Female											9		
NSLP participants	258	21	1.1	16 ^	17	19	21	24	26	28 ^	9	<3	0.19
NSLP nonparticipants	187	24	1.7	12 ^	14 ^	18	23	28	34 ^	38 ^	9	<3	1.91
14 to 18 Years ^c											—		
NSLP participants	401	25	1.1	17	19	21	25	28	32	34	—	<3	0.44
NSLP nonparticipants	466	26	1.4	11	13	18	24	31	40	46	—	5.6	6.53
14 to 18 Years, Male ^c											12		
NSLP participants	228	27	1.2	20 ^	21	24	27	30	34	36 ^	12	<3	0.03
NSLP nonparticipants	229	28	1.7	12 ^	15	20	26	34	41	47 ^	12	4.3 ^	3.14
14 to 18 Years, Female ^c											11		
NSLP participants	171	21	0.8	15 ^	16 ^	18	21	24	26 ^	28 ^	11	<3	0.30
NSLP nonparticipants	237	23	2.0	10 ^	12	16	21	28	36	42 ^	11	6.9	3.78
All Students											—		
NSLP participants	1,251	23	0.5	16	17	19	22	26	29	31	—	<3	0.05
NSLP nonparticipants	911	24	0.6	13	15	18	23	29	34	38	—	<3	0.84
All Students, Male											—		
NSLP participants	691	24	0.6	17	19	21	24	27	30	33	—	<3	0.02
NSLP nonparticipants	431	25	0.6	13	15	19	24	31	37	42	—	<3	1.01
All Students, Female											—		
NSLP participants	560	21	0.6	15	16	18	21	24	27	28	—	<3	0.05
NSLP nonparticipants	480	23	1.0	14	15	18	22	26	31	34	—	<3	0.85

	Niacin Intakes (mg)										EAR (mg)	% Below EAR ^a	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	22	0.5	15	17	19	22	25	28	30	—	<3	0.02
NSLP nonparticipants	208	22	1.2	15 ^	17	19	21	24	27	29 ^	—	<3	0.37
Elementary School Students, Male											—		
NSLP participants	279	23	0.6	15 ^	17	19	23	27	31	33 ^	—	<3	0.08
NSLP nonparticipants	94	22	1.4	12 ^	14 ^	17	21	26	32 ^	36 ^	—	<3	0.79
Elementary School Students, Female											—		
NSLP participants	255	21	0.7	14 ^	15	17	20	23	27	29 ^	—	<3	0.19
NSLP nonparticipants	114	21	1.8	15 ^	17 ^	19	21	24	27 ^	29 ^	—	<3	0.70
Middle School Students											—		
NSLP participants	405	23	0.8	16	17	19	22	25	29	31	—	<3	0.04
NSLP nonparticipants	308	23	0.9	12 ^	13	17	22	28	35	40 ^	—	<3	1.31
Middle School Students, Male											—		
NSLP participants	234	24	0.8	16 ^	17	20	23	27	31	34 ^	—	<3	0.19
NSLP nonparticipants	144	25	1.4	13 ^	15 ^	18	24	30	37 ^	43 ^	—	<3	0.58
Middle School Students, Female											—		
NSLP participants	166	21	0.8	14 ^	15 ^	17	21	24	27 ^	30 ^	—	<3	0.39
NSLP nonparticipants	164	21	1.2	13 ^	14 ^	17	20	24	29 ^	32 ^	—	<3	1.94
High School Students											—		
NSLP participants	306	25	1.0	18 ^	19	21	24	28	32	34 ^	—	<3	0.04
NSLP nonparticipants	395	26	1.8	11 ^	13	17	24	33	42	50 ^	—	6.8	2.68
High School Students, Male											—		
NSLP participants	164	25	0.7	17 ^	18 ^	21	25	29	33 ^	36 ^	—	<3	0.53
NSLP nonparticipants	193	27	2.0	12 ^	14 ^	19	26	34	42 ^	48 ^	—	5.3 ^	3.16
High School Students, Female											—		
NSLP participants	133	22	0.7	15 ^	16 ^	18	22	25	29 ^	32 ^	—	<3	0.90
NSLP nonparticipants	202	25	3.1	9 ^	11	16	22	31	42	51 ^	—	8.9	4.22

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.31. Usual Daily Riboflavin Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Riboflavin Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											0.5		
NSLP participants	259	2.2	0.05	1.5 ^	1.6	1.9	2.2	2.5	2.9	3.1 ^	0.5	<3	0.00
NSLP nonparticipants	100	2.0	0.08	1.5 ^	1.6 ^	1.8	2.0	2.2	2.5 ^	2.6 ^	0.5	<3	0.00
9 to 13 Years											0.8		
NSLP participants	594	2.1	0.07	1.3	1.5	1.7	2.0	2.4	2.8	3.1	0.8	<3	0.09
NSLP nonparticipants	345	2.1	0.11	1.1 ^	1.2	1.6	2.0	2.5	3.0	3.4 ^	0.8	<3	0.83
9 to 13 Years, Male											0.8		
NSLP participants	336	2.2	0.06	1.4 ^	1.5	1.8	2.1	2.5	2.9	3.2 ^	0.8	<3	0.11
NSLP nonparticipants	158	2.3	0.13	1.2 ^	1.4 ^	1.7	2.2	2.7	3.2 ^	3.6 ^	0.8	<3	0.57
9 to 13 Years, Female											0.8		
NSLP participants	258	2.0	0.12	1.3 ^	1.4	1.6	1.9	2.3	2.7	2.9 ^	0.8	<3	0.39
NSLP nonparticipants	187	1.9	0.14	1.0 ^	1.1 ^	1.4	1.8	2.3	2.7 ^	3.1 ^	0.8	<3	1.72
14 to 18 Years ^b											—		
NSLP participants	401	2.2	0.13	1.2	1.4	1.7	2.1	2.7	3.3	3.7	—	<3	1.69
NSLP nonparticipants	466	2.1	0.17	0.8	0.9	1.3	1.9	2.6	3.6	4.3	—	12.8	2.99
14 to 18 Years, Male ^b											1.1		
NSLP participants	230	2.6	0.20	1.6 ^	1.7	2.1	2.5	3.1	3.7	4.1 ^	1.1	<3	1.12
NSLP nonparticipants	229	2.4	0.20	0.8 ^	1.1	1.5	2.2	3.0	4.0	4.7 ^	1.1	11.1	4.84
14 to 18 Years, Female ^b											0.9		
NSLP participants	171	1.7	0.09	1.1 ^	1.2 ^	1.4	1.7	2.0	2.3 ^	2.5 ^	0.9	<3	1.85
NSLP nonparticipants	237	1.7	0.21	0.8 ^	0.9	1.2	1.6	2.1	2.7	3.2 ^	0.9	9.2	3.07
All Students											—		
NSLP participants	1,254	2.1	0.05	1.4	1.6	1.8	2.1	2.4	2.8	3.0	—	<3	0.10
NSLP nonparticipants	911	2.1	0.06	1.0	1.2	1.5	2.0	2.5	3.1	3.6	—	2.7	0.94
All Students, Male											—		
NSLP participants	694	2.3	0.07	1.6	1.7	2.0	2.3	2.6	3.0	3.2	—	<3	0.07
NSLP nonparticipants	431	2.3	0.08	1.1	1.3	1.7	2.2	2.8	3.4	3.8	—	<3	1.47
All Students, Female											—		
NSLP participants	560	1.9	0.06	1.3	1.4	1.6	1.9	2.2	2.5	2.7	—	<3	0.17
NSLP nonparticipants	480	1.9	0.09	0.9	1.1	1.4	1.8	2.2	2.8	3.1	—	<3	1.53

	Riboflavin Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	2.2	0.05	1.5	1.6	1.8	2.1	2.5	2.8	3.1	—	<3	0.01
NSLP nonparticipants	208	1.9	0.10	1.2 ^	1.3	1.6	1.9	2.3	2.6	2.9 ^	—	<3	0.35
Elementary School Students, Male											—		
NSLP participants	282	2.3	0.05	1.6 ^	1.7	1.9	2.2	2.5	2.9	3.1 ^	—	<3	0.02
NSLP nonparticipants	94	2.1	0.12	1.3 ^	1.5 ^	1.7	2.1	2.5	2.9 ^	3.1 ^	—	<3	0.73
Elementary School Students, Female											—		
NSLP participants	258	2.1	0.08	1.5 ^	1.6	1.8	2.0	2.3	2.6	2.8 ^	—	<3	0.01
NSLP nonparticipants	114	1.8	0.14	1.2 ^	1.3 ^	1.5	1.8	2.1	2.5 ^	2.7 ^	—	<3	0.41
Middle School Students											—		
NSLP participants	406	2.0	0.07	1.2	1.3	1.6	1.9	2.4	2.8	3.1	—	<3	0.43
NSLP nonparticipants	308	1.9	0.08	0.9 ^	1.1	1.4	1.8	2.4	3.0	3.4 ^	—	4.5 ^	2.41
Middle School Students, Male											—		
NSLP participants	239	2.3	0.09	1.5 ^	1.7	1.9	2.2	2.6	2.9	3.1 ^	—	<3	0.25
NSLP nonparticipants	144	2.2	0.13	1.1 ^	1.3 ^	1.6	2.1	2.6	3.2 ^	3.7 ^	—	<3	2.11
Middle School Students, Female											—		
NSLP participants	167	1.7	0.09	1.1 ^	1.2 ^	1.4	1.7	2.0	2.3 ^	2.6 ^	—	<3	0.71
NSLP nonparticipants	164	1.7	0.09	0.8 ^	0.9 ^	1.2	1.5	2.0	2.6 ^	3.0 ^	—	6.6 ^	3.58
High School Students											—		
NSLP participants	308	2.3	0.15	1.2 ^	1.3	1.7	2.2	2.8	3.5	4.0 ^	—	<3	1.92
NSLP nonparticipants	395	2.2	0.21	0.8 ^	1.0	1.3	1.9	2.8	3.8	4.6 ^	—	12.4	2.94
High School Students, Male											—		
NSLP participants	173	2.8	0.24	1.5 ^	1.7 ^	2.1	2.6	3.3	4.0 ^	4.5 ^	—	<3	1.52
NSLP nonparticipants	193	2.4	0.21	0.9 ^	1.1 ^	1.5	2.2	3.0	4.0 ^	4.8 ^	—	10.2 ^	5.71
High School Students, Female											—		
NSLP participants	135	1.8	0.09	1.1 ^	1.2 ^	1.4	1.7	2.1	2.4 ^	2.7 ^	—	<3	1.51
NSLP nonparticipants	202	2.0	0.34	0.7 ^	0.9	1.2	1.7	2.4	3.4	4.0 ^	—	10.4	2.82

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.32. Usual Daily Thiamin Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Thiamin Intakes (mg)										EAR (mg)	% Below EAR	SE
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											0.5		
NSLP participants	259	1.7	0.04	1.1 ^	1.2	1.4	1.6	1.9	2.1	2.3 ^	0.5	<3	0.00
NSLP nonparticipants	100	1.6	0.06	0.8 ^	0.9 ^	1.2	1.5	1.9	2.3 ^	2.6 ^	0.5	<3	0.31
9 to 13 Years											0.7		
NSLP participants	594	1.6	0.05	1.0	1.1	1.3	1.6	1.8	2.1	2.3	0.7	<3	0.16
NSLP nonparticipants	345	1.8	0.09	1.0 ^	1.1	1.4	1.7	2.1	2.5	2.8 ^	0.7	<3	0.82
9 to 13 Years, Male											0.7		
NSLP participants	336	1.7	0.05	1.1 ^	1.2	1.4	1.6	1.9	2.2	2.4 ^	0.7	<3	0.28
NSLP nonparticipants	158	1.9	0.10	1.1 ^	1.2 ^	1.5	1.8	2.2	2.7 ^	2.9 ^	0.7	<3	1.02
9 to 13 Years, Female											0.7		
NSLP participants	258	1.5	0.08	1.0 ^	1.1	1.3	1.5	1.7	2.0	2.2 ^	0.7	<3	0.50
NSLP nonparticipants	187	1.7	0.16	0.9 ^	1.0 ^	1.3	1.6	2.0	2.4 ^	2.7 ^	0.7	<3	1.63
14 to 18 Years ^b											—		
NSLP participants	401	1.8	0.09	1.1	1.2	1.4	1.7	2.1	2.5	2.7	—	<3	3.08
NSLP nonparticipants	466	1.6	0.08	0.6	0.8	1.1	1.5	2.0	2.6	3.1	—	19.3	4.48
14 to 18 Years, Male ^b											1.0		
NSLP participants	230	2.1	0.15	1.3 ^	1.4	1.7	2.0	2.4	2.8	3.1 ^	1.0	<3	1.96
NSLP nonparticipants	229	1.9	0.13	0.7 ^	0.9	1.3	1.8	2.3	2.9	3.4 ^	1.0	12.5	4.96
14 to 18 Years, Female ^b											0.9		
NSLP participants	171	1.4	0.05	1.0 ^	1.1 ^	1.2	1.4	1.6	1.8 ^	2.0 ^	0.9	<3	5.25
NSLP nonparticipants	237	1.3	0.07	0.6 ^	0.7	0.9	1.2	1.6	2.1	2.5 ^	0.9	27.3	7.01
All Students											—		
NSLP participants	1,254	1.7	0.04	1.1	1.2	1.4	1.6	1.9	2.2	2.3	—	<3	0.33
NSLP nonparticipants	911	1.7	0.04	0.9	1.0	1.2	1.6	2.0	2.4	2.7	—	3.9	1.51
All Students, Male											—		
NSLP participants	694	1.8	0.05	1.2	1.3	1.5	1.7	2.1	2.4	2.6	—	<3	0.52
NSLP nonparticipants	431	1.8	0.06	0.9	1.1	1.4	1.8	2.2	2.6	2.9	—	3.0 ^	1.75
All Students, Female											—		
NSLP participants	558	1.5	0.04	1.1	1.2	1.3	1.5	1.7	1.8	2.0	—	<3	0.42
NSLP nonparticipants	480	1.5	0.08	0.8	0.9	1.1	1.4	1.8	2.2	2.4	—	3.9 ^	2.57

	Thiamin Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	536	1.6	0.03	1.2	1.2	1.4	1.6	1.8	2.0	2.1	—	<3	0.05
NSLP nonparticipants	208	1.6	0.10	0.9 ^	1.0	1.2	1.5	1.9	2.2	2.5 ^	—	<3	1.16
Elementary School Students, Male											—		
NSLP participants	282	1.7	0.04	1.2 ^	1.3	1.4	1.7	1.9	2.1	2.2 ^	—	<3	0.09
NSLP nonparticipants	94	1.7	0.09	1.0 ^	1.1 ^	1.4	1.7	2.0	2.3 ^	2.6 ^	—	<3	1.09
Elementary School Students, Female											—		
NSLP participants	257	1.5	0.04	1.1 ^	1.2	1.3	1.5	1.7	1.9	2.0 ^	—	<3	0.06
NSLP nonparticipants	114	1.5	0.16	0.8 ^	0.9 ^	1.1	1.4	1.7	2.1 ^	2.4 ^	—	<3	1.72
Middle School Students											—		
NSLP participants	406	1.6	0.05	0.9	1.0	1.2	1.5	1.8	2.2	2.5	—	<3	1.68
NSLP nonparticipants	308	1.6	0.06	0.9 ^	1.0	1.2	1.6	1.9	2.3	2.6 ^	—	3.3 ^	2.47
Middle School Students, Male											—		
NSLP participants	239	1.7	0.08	1.1 ^	1.2	1.4	1.7	2.0	2.3	2.5 ^	—	<3	1.62
NSLP nonparticipants	144	1.8	0.09	0.9 ^	1.1 ^	1.3	1.7	2.1	2.6 ^	3.0 ^	—	<3	2.67
Middle School Students, Female											—		
NSLP participants	167	1.4	0.05	0.8 ^	0.9 ^	1.1	1.3	1.6	2.0 ^	2.2 ^	—	<3	1.98
NSLP nonparticipants	164	1.4	0.06	1.0 ^	1.0 ^	1.2	1.4	1.6	1.8 ^	1.9 ^	—	<3	2.16
High School Students											—		
NSLP participants	308	1.8	0.11	1.1 ^	1.3	1.5	1.8	2.1	2.5	2.8 ^	—	<3	2.86
NSLP nonparticipants	395	1.6	0.10	0.6 ^	0.8	1.1	1.5	2.0	2.7	3.1 ^	—	19.2	4.68
High School Students, Male											—		
NSLP participants	173	2.1	0.17	1.4 ^	1.5 ^	1.8	2.1	2.5	2.9 ^	3.1 ^	—	<3	1.76
NSLP nonparticipants	193	1.8	0.15	0.7 ^	0.9 ^	1.2	1.7	2.3	3.0 ^	3.4 ^	—	14.6	6.24
High School Students, Female											—		
NSLP participants	135	1.5	0.06	1.1 ^	1.2 ^	1.3	1.5	1.6	1.8 ^	1.9 ^	—	<3	1.50
NSLP nonparticipants	202	1.4	0.08	0.6 ^	0.7	0.9	1.2	1.7	2.2	2.6 ^	—	23.7	5.75

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.33. Usual Daily Calcium Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Calcium Intakes (mg)										EAR (mg)	% Below EAR	SE
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											800		
NSLP participants	259	1,188	29.7	705 ^	792	952	1,156	1,386	1,620	1,781 ^	800	10.6	3.93
NSLP nonparticipants	100	1,051	44.6	685 ^	754 ^	872	1,027	1,204	1,385 ^	1,499 ^	800	15.2 ^	10.86
9 to 13 Years											1100		
NSLP participants	594	1,095	36.4	636	718	872	1,067	1,285	1,509	1,653	1100	54.5	5.07
NSLP nonparticipants	345	1,071	55.2	601 ^	687	847	1,043	1,265	1,489	1,632 ^	1100	57.4	7.73
9 to 13 Years, Male											1100		
NSLP participants	336	1,147	35.2	715 ^	798	946	1,129	1,326	1,518	1,644 ^	1100	45.7	6.01
NSLP nonparticipants	158	1,176	47.9	642 ^	734 ^	913	1,139	1,394	1,668 ^	1,859 ^	1100	45.9	6.27
9 to 13 Years, Female											1100		
NSLP participants	258	1,031	59.4	527 ^	610	772	983	1,239	1,511	1,705 ^	1100	63.0	6.71
NSLP nonparticipants	187	985	86.3	419 ^	521 ^	711	950	1,220	1,491 ^	1,675 ^	1100	65.5	10.87
14 to 18 Years ^b											1100		
NSLP participants	401	1,222	51.3	603	700	888	1,150	1,476	1,837	2,091	1100	44.9	2.99
NSLP nonparticipants	466	1,089	63.3	362	458	666	979	1,384	1,865	2,207	1100	58.1	4.15
14 to 18 Years, Male ^b											1100		
NSLP participants	230	1,447	80.3	793 ^	900	1,107	1,378	1,713	2,081	2,333 ^	1100	24.2	7.57
NSLP nonparticipants	229	1,261	109.1	369 ^	495	749	1,127	1,629	2,203	2,613 ^	1100	47.9	6.07
14 to 18 Years, Female ^b											1100		
NSLP participants	171	935	35.9	496 ^	580 ^	724	912	1,119	1,327 ^	1,463 ^	1100	72.9	6.78
NSLP nonparticipants	237	870	61.6	372 ^	448	600	811	1,070	1,367	1,585 ^	1100	75.3	5.75
All Students											—		
NSLP participants	1,254	1,146	25.7	669	753	910	1,114	1,345	1,583	1,741	—	38.5	3.06
NSLP nonparticipants	911	1,071	26.9	514	604	783	1,022	1,304	1,601	1,799	—	50.4	2.37
All Students, Male											—		
NSLP participants	694	1,258	32.6	770	858	1,022	1,228	1,461	1,698	1,849	—	26.4	3.63
NSLP nonparticipants	431	1,183	41.3	651	743	920	1,149	1,405	1,666	1,847	—	38.6	5.16
All Students, Female											—		
NSLP participants	560	1,016	28.8	567	646	795	987	1,202	1,424	1,573	—	52.8	3.97
NSLP nonparticipants	480	950	47.3	421	507	681	911	1,168	1,446	1,618	—	60.6	5.47

	Calcium Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	1,123	29.7	771	839	962	1,110	1,269	1,422	1,520	—	27.5	5.79
NSLP nonparticipants	208	1,002	52.2	530 ^	614	767	967	1,198	1,433	1,596 ^	—	46.4	5.75
Elementary School Students, Male											—		
NSLP participants	282	1,175	29.1	819 ^	892	1,021	1,167	1,321	1,468	1,556 ^	—	21.6	8.16
NSLP nonparticipants	94	1,102	62.5	595 ^	685 ^	849	1,071	1,312	1,563 ^	1,743 ^	—	36.7	8.34
Elementary School Students, Female											—		
NSLP participants	258	1,060	48.5	615 ^	692	841	1,032	1,243	1,461	1,607 ^	—	39.6	8.31
NSLP nonparticipants	114	968	72.9	488 ^	573 ^	723	920	1,161	1,427 ^	1,604 ^	—	51.9	8.15
Middle School Students											—		
NSLP participants	406	1,060	29.2	560	647	809	1,023	1,268	1,527	1,703	—	58.8	3.50
NSLP nonparticipants	308	1,039	45.5	650 ^	724	855	1,018	1,199	1,381	1,503 ^	—	63.2	21.14
Middle School Students, Male											—		
NSLP participants	239	1,173	45.1	669 ^	762	933	1,144	1,382	1,618	1,783 ^	—	44.7	7.14
NSLP nonparticipants	144	1,135	66.5	612 ^	702 ^	876	1,093	1,347	1,624 ^	1,793 ^	—	50.7	7.99
Middle School Students, Female											—		
NSLP participants	167	931	52.8	484 ^	560 ^	698	887	1,114	1,363 ^	1,530 ^	—	73.8	10.16
NSLP nonparticipants	164	876	48.9	565 ^	621 ^	729	860	1,003	1,149 ^	1,249 ^	—	86.2	11.66
High School Students											—		
NSLP participants	308	1,274	65.8	632 ^	733	929	1,201	1,531	1,907	2,181 ^	—	40.4	3.69
NSLP nonparticipants	395	1,095	60.0	378 ^	479	682	993	1,391	1,848	2,172 ^	—	57.1	4.25
High School Students, Male											—		
NSLP participants	173	1,516	90.6	811 ^	925 ^	1,139	1,434	1,801	2,214 ^	2,514 ^	—	21.9	7.31
NSLP nonparticipants	193	1,251	98.0	412 ^	537 ^	779	1,137	1,611	2,118 ^	2,496 ^	—	46.6	6.82
High School Students, Female											—		
NSLP participants	135	983	40.4	567 ^	646 ^	785	966	1,160	1,349 ^	1,474 ^	—	67.9	7.85
NSLP nonparticipants	202	928	71.9	380 ^	464	627	855	1,149	1,491	1,723 ^	—	70.4	6.47

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (800 mg for both groups).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.34. Usual Daily Iron Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Iron Intakes (mg)										EAR (mg) % Below EAR ^a SE ^b		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^c											4.1		
NSLP participants	259	15.5	0.47	10.6 ^	11.5	13.1	15.2	17.6	20.0	21.7 ^	4.1	<3	n.a.
NSLP nonparticipants	100	13.9	0.69	10.3 ^	11.0 ^	12.2	13.7	15.4	17.0 ^	18.0 ^	4.1	<3	n.a.
9 to 13 Years											—		
NSLP participants	594	14.7	0.52	9.3	10.2	12.0	14.3	17.0	19.8	21.7	—	<3	n.a.
NSLP nonparticipants	345	16.5	0.62	7.8 ^	9.1	11.7	15.3	20.0	25.3	29.1 ^	—	<3	n.a.
9 to 13 Years, Male											5.9		
NSLP participants	336	15.3	0.58	9.6 ^	10.5	12.4	14.8	17.6	20.6	22.7 ^	5.9	<3	n.a.
NSLP nonparticipants	158	17.3	1.05	8.8 ^	10.0 ^	12.6	16.2	20.6	25.8 ^	29.6 ^	5.9	<3	n.a.
9 to 13 Years, Female											5.7		
NSLP participants	258	14.1	0.80	9.2 ^	10.0	11.7	13.7	16.1	18.6	20.3 ^	5.7	<3	n.a.
NSLP nonparticipants	187	16.0	0.79	7.2 ^	8.5 ^	11.1	14.8	19.5	24.9 ^	29.0 ^	5.7	<3	n.a.
14 to 18 Years ^d											—		
NSLP participants	401	15.4	0.71	8.8	9.9	11.9	14.7	18.1	21.8	24.4	—	<3	n.a.
NSLP nonparticipants	466	14.8	0.80	5.5	6.7	9.4	13.3	18.4	24.7	29.2	—	8.7	n.a.
14 to 18 Years, Male ^d											7.7		
NSLP participants	230	17.4	1.06	10.6 ^	11.8	14.0	16.8	20.2	23.8	26.3 ^	7.7	<3	n.a.
NSLP nonparticipants	229	16.8	1.26	6.5 ^	7.9	10.8	15.1	21.0	27.8	32.9 ^	7.7	9.0	n.a.
14 to 18 Years, Female ^d											7.9		
NSLP participants	171	12.9	0.61	7.2 ^	8.1 ^	9.9	12.3	15.2	18.5 ^	20.8 ^	7.9	<3	n.a.
NSLP nonparticipants	237	12.1	0.63	5.1 ^	6.1	8.3	11.3	14.9	19.1	22.1 ^	7.9	<3	n.a.
All Students											—		
NSLP participants	1,254	15.0	0.37	10.2	11.1	12.6	14.7	17.0	19.5	21.1	—	<3	n.a.
NSLP nonparticipants	911	15.4	0.39	7.2	8.4	10.9	14.4	18.7	23.7	27.1	—	<3	n.a.
All Students, Male											—		
NSLP participants	694	16.0	0.48	10.3	11.3	13.1	15.5	18.3	21.3	23.3	—	<3	n.a.
NSLP nonparticipants	431	16.8	0.65	8.0	9.3	11.9	15.7	20.3	25.5	29.4	—	<3	n.a.
All Students, Female											—		
NSLP participants	560	14.0	0.46	9.7	10.5	11.9	13.7	15.8	18.0	19.4	—	<3	n.a.
NSLP nonparticipants	480	13.9	0.50	6.6	7.7	9.9	13.1	16.8	21.3	24.2	—	<3	n.a.

	Iron Intakes (mg)										EAR (mg) % Below EAR ^a SE ^b		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	15.0	0.41	10.6	11.4	12.8	14.7	16.8	19.0	20.4	—	<3	n.a.
NSLP nonparticipants	208	14.6	0.93	8.1 ^	9.2	11.3	14.1	17.4	20.7	23.1 ^	—	<3	n.a.
Elementary School Students, Male											—		
NSLP participants	282	15.4	0.56	10.0 ^	11.0	12.8	15.0	17.6	20.3	22.1 ^	—	<3	n.a.
NSLP nonparticipants	94	16.5	1.05	7.4 ^	8.7 ^	11.4	15.3	20.1	25.6 ^	29.9 ^	—	<3	n.a.
Elementary School Students, Female											—		
NSLP participants	258	14.6	0.64	10.2 ^	11.0	12.4	14.3	16.4	18.6	20.0 ^	—	<3	n.a.
NSLP nonparticipants	114	13.9	1.25	7.4 ^	8.5 ^	10.5	13.2	16.5	20.2 ^	22.7 ^	—	<3	n.a.
Middle School Students											—		
NSLP participants	401	14.0	0.38	9.5	10.4	11.8	13.7	15.8	18.0	19.5	—	<3	n.a.
NSLP nonparticipants	308	14.6	0.84	6.3 ^	7.5	9.9	13.3	17.8	23.1	27.1 ^	—	<3	n.a.
Middle School Students, Male											—		
NSLP participants	239	15.0	0.54	9.8 ^	10.7	12.4	14.6	17.1	19.8	21.7 ^	—	<3	n.a.
NSLP nonparticipants	144	15.7	1.15	7.1 ^	8.3 ^	10.8	14.3	19.0	24.7 ^	29.6 ^	—	3.1 ^	n.a.
Middle School Students, Female											—		
NSLP participants	167	12.9	0.37	9.0 ^	9.7 ^	11.0	12.6	14.5	16.4 ^	17.6 ^	—	<3	n.a.
NSLP nonparticipants	164	13.0	1.00	7.8 ^	8.6 ^	10.4	12.6	15.2	18.0 ^	20.1 ^	—	<3	n.a.
High School Students											—		
NSLP participants	308	15.8	0.82	9.2 ^	10.3	12.4	15.2	18.4	21.9	24.4 ^	—	<3	n.a.
NSLP nonparticipants	395	15.0	0.98	5.3 ^	6.5	9.1	13.2	18.8	25.8	31.1 ^	—	<3	n.a.
High School Students, Male											—		
NSLP participants	173	17.9	1.27	12.1 ^	13.1 ^	15.0	17.5	20.3	23.2 ^	25.2 ^	—	<3	n.a.
NSLP nonparticipants	193	17.2	1.52	6.1 ^	7.5 ^	10.4	15.0	21.7	29.6 ^	36.1 ^	—	10.7	n.a.
High School Students, Female											—		
NSLP participants	135	13.3	0.65	7.4 ^	8.3 ^	10.1	12.6	15.7	19.0 ^	21.5 ^	—	<3	n.a.
NSLP nonparticipants	202	12.7	0.69	4.9 ^	6.0	8.3	11.6	15.8	20.8	24.3 ^	—	<3	n.a.

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aComparisons to the EAR for iron were done using the probability approach.

^bStandard errors could not be produced using the probability approach.

^cThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^dIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (6.0 mg and 8.1 mg, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); n.a. = not applicable; NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.35. Usual Daily Magnesium Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Magnesium Intakes (mg)										EAR (mg)	% Below EAR	SE
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											110		
NSLP participants	259	272	6.9	188 ^	204	231	267	306	347	375 ^	110	<3	0.00
NSLP nonparticipants	100	244	10.9	172 ^	186 ^	210	240	274	306 ^	327 ^	110	<3	0.29
9 to 13 Years											200		
NSLP participants	594	261	7.1	178	193	221	256	295	335	361	200	13.0	3.70
NSLP nonparticipants	345	266	9.4	167 ^	185	219	260	306	353	384 ^	200	15.5	7.02
9 to 13 Years, Male											200		
NSLP participants	336	274	7.2	192 ^	207	236	271	308	345	369 ^	200	7.3	5.59
NSLP nonparticipants	158	295	14.3	175 ^	195 ^	234	284	343	408 ^	455 ^	200	11.5 ^	7.69
9 to 13 Years, Female											200		
NSLP participants	258	245	10.7	162 ^	177	204	239	279	320	349 ^	200	22.3	5.45
NSLP nonparticipants	187	244	13.5	134 ^	156 ^	194	239	289	337 ^	369 ^	200	28.1	6.07
14 to 18 Years ^b											—		
NSLP participants	401	293	14.1	170	191	229	281	343	412	459	—	67.5	6.55
NSLP nonparticipants	466	277	13.4	130	152	196	259	336	424	486	—	70.9	4.80
14 to 18 Years, Male ^b											340		
NSLP participants	230	334	23.1	184 ^	208	255	316	394	481	541 ^	340	59.0	8.45
NSLP nonparticipants	229	316	23.1	140 ^	168	220	294	388	494	570 ^	340	64.0	6.78
14 to 18 Years, Female ^c											300		
NSLP participants	171	244	7.5	178 ^	191 ^	213	241	271	300 ^	319 ^	300	89.7 ^	5.39
NSLP nonparticipants	237	225	10.5	129 ^	146	178	219	264	313	347 ^	300	86.1	4.81
All Students											—		
NSLP participants	1,254	271	5.5	186	201	229	265	306	349	377	—	27.6	2.36
NSLP nonparticipants	911	264	5.7	149	168	205	254	312	372	413	—	35.4	2.83
All Students, Male											—		
NSLP participants	694	289	7.4	193	210	241	282	328	377	409	—	27.6	2.64
NSLP nonparticipants	431	289	10.2	169	189	227	279	339	402	448	—	33.5	3.90
All Students, Female											—		
NSLP participants	560	251	6.0	183	196	219	248	279	310	330	—	28.2	3.05
NSLP nonparticipants	480	237	8.1	138	156	190	233	278	325	353	—	37.8	4.04

	Magnesium Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	266	5.2	208	219	240	264	290	315	331	—	4.7	1.88
NSLP nonparticipants	208	248	12.4	145 ^	164	199	242	291	339	372 ^	—	13.1	5.35
Elementary School Students, Male											—		
NSLP participants	280	269	5.9	213 ^	225	245	268	292	316	330 ^	—	4.8 ^	2.53
NSLP nonparticipants	94	261	19.5	146 ^	166 ^	201	248	308	372 ^	419 ^	—	12.6 ^	12.44
Elementary School Students, Female											—		
NSLP participants	258	262	6.8	200 ^	212	234	260	288	315	333 ^	—	5.0 ^	2.60
NSLP nonparticipants	114	243	13.6	149 ^	169 ^	201	239	281	322 ^	348 ^	—	13.0 ^	5.56
Middle School Students											—		
NSLP participants	406	250	5.5	182	195	218	247	278	311	332	—	26.7	5.87
NSLP nonparticipants	308	255	7.7	148 ^	167	202	247	299	352	389 ^	—	35.5	5.05
Middle School Students, Male											—		
NSLP participants	239	274	8.4	186 ^	202	231	268	310	352	383 ^	—	25.3	3.44
NSLP nonparticipants	144	282	10.9	197 ^	213 ^	243	277	317	357 ^	388 ^	—	22.1	7.71
Middle School Students, Female											—		
NSLP participants	167	219	5.9	155 ^	167 ^	188	215	246	278 ^	299 ^	—	43.8	6.28
NSLP nonparticipants	164	217	9.7	119 ^	134 ^	166	208	257	312 ^	351 ^	—	53.8	6.05
High School Students											—		
NSLP participants	308	299	17.5	161 ^	183	226	284	355	434	492 ^	—	63.6	6.37
NSLP nonparticipants	395	280	15.5	132 ^	154	196	260	340	432	499 ^	—	69.5	5.25
High School Students, Male											—		
NSLP participants	173	345	28.1	172 ^	199 ^	250	322	414	520 ^	599 ^	—	54.7	7.99
NSLP nonparticipants	193	318	26.2	136 ^	163 ^	213	289	393	512 ^	604 ^	—	64.4	6.58
High School Students, Female											—		
NSLP participants	135	247	8.8	185 ^	197 ^	218	245	274	301 ^	320 ^	—	88.0 ^	7.33
NSLP nonparticipants	202	238	11.0	135 ^	153	187	230	280	333	368 ^	—	80.7	6.31

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (330 mg and 255 mg, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.36. Usual Daily Phosphorus Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Phosphorus Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											405		
NSLP participants	259	1,403	28.5	944 ^	1,026	1,176	1,370	1,590	1,818	1,977 ^	405	<3	0.00
NSLP nonparticipants	100	1,293	49.7	724 ^	820 ^	1,018	1,255	1,529	1,807 ^	1,989 ^	405	<3	0.20
9 to 13 Years											1055		
NSLP participants	594	1,372	37.6	945	1,024	1,169	1,350	1,549	1,752	1,882	1055	12.6	3.67
NSLP nonparticipants	345	1,339	56.7	836 ^	934	1,110	1,317	1,546	1,771	1,913 ^	1055	19.3	6.47
9 to 13 Years, Male											1055		
NSLP participants	336	1,451	33.1	1,052 ^	1,132	1,271	1,439	1,616	1,785	1,896 ^	1055	5.1 ^	5.63
NSLP nonparticipants	158	1,427	49.4	910 ^	1,004 ^	1,180	1,397	1,636	1,890 ^	2,065 ^	1055	13.4	7.36
9 to 13 Years, Female											1055		
NSLP participants	258	1,280	60.2	830 ^	908	1,057	1,243	1,463	1,694	1,856 ^	1055	24.8	5.68
NSLP nonparticipants	187	1,286	101.8	653 ^	775 ^	993	1,258	1,548	1,831 ^	2,019 ^	1055	30.6	6.04
14 to 18 Years ^b											1055		
NSLP participants	401	1,526	76.3	820	932	1,146	1,443	1,815	2,227	2,520	1055	17.8	3.22
NSLP nonparticipants	466	1,398	62.8	594	713	955	1,300	1,726	2,213	2,552	1055	30.9	3.10
14 to 18 Years, Male ^b											1055		
NSLP participants	230	1,795	124.7	978 ^	1,108	1,362	1,699	2,125	2,602	2,933 ^	1055	7.6 ^	2.88
NSLP nonparticipants	229	1,617	112.1	709 ^	861	1,142	1,525	1,994	2,497	2,842 ^	1055	19.5	5.29
14 to 18 Years, Female ^b											1055		
NSLP participants	171	1,194	35.3	765 ^	844 ^	981	1,164	1,373	1,590 ^	1,738 ^	1055	34.7	6.72
NSLP nonparticipants	237	1,112	54.4	551 ^	641	818	1,055	1,338	1,658	1,888 ^	1055	46.7	4.05
All Students											—		
NSLP participants	1,254	1,411	32.4	948	1,029	1,181	1,377	1,602	1,838	1,997	—	8.8	2.19
NSLP nonparticipants	911	1,339	28.0	759	858	1,050	1,297	1,580	1,871	2,063	—	19.4	2.68
All Students, Male											—		
NSLP participants	694	1,538	45.7	1,037	1,126	1,291	1,501	1,743	1,997	2,163	—	4.3	2.42
NSLP nonparticipants	431	1,445	43.2	921	1,014	1,191	1,415	1,662	1,912	2,084	—	10.2	5.10
All Students, Female											—		
NSLP participants	560	1,267	28.5	870	942	1,075	1,244	1,430	1,622	1,751	—	15.6	3.10
NSLP nonparticipants	480	1,223	51.2	662	761	952	1,194	1,454	1,729	1,895	—	25.7	3.68

	Phosphorus Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	540	1,374	28.9	1,060	1,121	1,231	1,363	1,505	1,642	1,729	—	<3	1.96
NSLP nonparticipants	208	1,248	64.0	762 ^	858	1,024	1,228	1,448	1,661	1,804 ^	—	13.7	4.45
Elementary School Students, Male											—		
NSLP participants	282	1,423	28.6	1,099 ^	1,165	1,281	1,414	1,556	1,694	1,777 ^	—	<3	2.00
NSLP nonparticipants	94	1,261	69.3	936 ^	1,008 ^	1,118	1,250	1,396	1,530 ^	1,620 ^	—	8.0 ^	8.45
Elementary School Students, Female											—		
NSLP participants	258	1,319	40.5	924 ^	995	1,129	1,297	1,481	1,670	1,797 ^	—	7.7 ^	3.74
NSLP nonparticipants	114	1,255	87.4	742 ^	844 ^	1,015	1,224	1,462	1,706 ^	1,860 ^	—	14.6 ^	5.69
Middle School Students											—		
NSLP participants	406	1,311	25.8	933	1,006	1,134	1,294	1,467	1,641	1,756	—	14.9	7.06
NSLP nonparticipants	308	1,297	41.5	829 ^	917	1,074	1,270	1,490	1,713	1,864 ^	—	22.9	6.05
Middle School Students, Male											—		
NSLP participants	239	1,445	41.9	1,064 ^	1,141	1,276	1,434	1,601	1,761	1,869 ^	—	4.5 ^	7.84
NSLP nonparticipants	144	1,419	59.5	1,008 ^	1,085 ^	1,226	1,393	1,584	1,784 ^	1,933 ^	—	7.6 ^	9.28
Middle School Students, Female											—		
NSLP participants	167	1,156	33.1	841 ^	902 ^	1,006	1,138	1,284	1,435 ^	1,532 ^	—	33.6	13.45
NSLP nonparticipants	164	1,127	56.1	705 ^	777 ^	922	1,101	1,300	1,509 ^	1,653 ^	—	43.5	14.22
High School Students											—		
NSLP participants	308	1,585	93.7	816 ^	936	1,169	1,494	1,890	2,344	2,679 ^	—	16.6	2.97
NSLP nonparticipants	395	1,397	66.7	601 ^	722	956	1,300	1,725	2,203	2,536 ^	—	31.1	3.46
High School Students, Male											—		
NSLP participants	173	1,882	144.0	987 ^	1,130 ^	1,398	1,773	2,242	2,777 ^	3,169 ^	—	7.0 ^	2.61
NSLP nonparticipants	193	1,613	113.1	716 ^	863 ^	1,133	1,513	1,996	2,499 ^	2,867 ^	—	20.0	5.87
High School Students, Female											—		
NSLP participants	135	1,236	40.8	765 ^	847 ^	998	1,202	1,435	1,675 ^	1,839 ^	—	31.6	6.98
NSLP nonparticipants	202	1,154	56.9	563 ^	659	843	1,088	1,394	1,740	1,969 ^	—	44.8	4.39

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (580 mg for both groups).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.37. Usual Daily Zinc Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Zinc Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By Age/Gender Groups													
6 to 8 Years ^a											4.0		
NSLP participants	259	10.9	0.25	7.8 ^	8.3	9.4	10.7	12.2	13.7	14.7 ^	4.0	<3	0.00
NSLP nonparticipants	100	10.1	0.38	6.4 ^	7.1 ^	8.4	9.9	11.6	13.3 ^	14.3 ^	4.0	<3	0.19
9 to 13 Years											7.0		
NSLP participants	594	10.8	0.38	7.6	8.2	9.3	10.6	12.1	13.7	14.7	7.0	<3	2.91
NSLP nonparticipants	345	10.7	0.61	5.5 ^	6.3	8.0	10.2	12.8	15.6	17.5 ^	7.0	15.1	5.24
9 to 13 Years, Male											7.0		
NSLP participants	331	11.1	0.32	7.6 ^	8.2	9.3	10.8	12.5	14.2	15.4 ^	7.0	<3	1.52
NSLP nonparticipants	158	11.5	0.56	8.1 ^	8.7 ^	9.8	11.3	12.9	14.6 ^	15.7 ^	7.0	<3	5.31
9 to 13 Years, Female											7.0		
NSLP participants	258	10.3	0.60	6.6 ^	7.2	8.4	10.0	11.8	13.7	15.1 ^	7.0	8.1	6.04
NSLP nonparticipants	187	9.9	0.95	4.3 ^	5.2 ^	6.9	9.3	12.2	15.4 ^	17.7 ^	7.0	26.0	5.01
14 to 18 Years ^b											—		
NSLP participants	401	12.0	0.56	7.3	8.1	9.6	11.6	13.9	16.4	18.2	—	9.8	7.76
NSLP nonparticipants	466	11.0	0.62	4.2	5.2	7.1	10.0	13.7	18.0	21.1	—	32.6	3.51
14 to 18 Years, Male ^b											8.5		
NSLP participants	226	12.8	0.49	8.8 ^	9.5	10.9	12.6	14.5	16.5	18.0 ^	8.5	3.7 ^	2.02
NSLP nonparticipants	229	12.9	1.04	4.9 ^	6.2	8.5	11.9	16.2	21.0	24.4 ^	8.5	25.0	6.87
14 to 18 Years, Female ^b											7.3		
NSLP participants	171	9.7	0.49	5.0 ^	5.7 ^	7.1	9.1	11.6	14.4 ^	16.4 ^	7.3	27.5	4.62
NSLP nonparticipants	237	8.5	0.41	4.1 ^	4.8	6.2	8.0	10.2	12.7	14.5 ^	7.3	39.8	4.39
All Students											—		
NSLP participants	1,254	11.0	0.27	7.8	8.4	9.5	10.8	12.4	13.9	15.0	—	2.7	1.93
NSLP nonparticipants	911	10.6	0.28	5.2	6.0	7.7	10.1	12.9	15.9	18.0	—	17.4	2.63
All Students, Male											—		
NSLP participants	694	11.8	0.28	8.5	9.1	10.2	11.6	13.2	14.8	15.8	—	<3	1.48
NSLP nonparticipants	431	11.9	0.38	6.2	7.1	8.9	11.4	14.2	17.2	19.3	—	12.0	5.02
All Students, Female											—		
NSLP participants	560	10.1	0.38	6.3	7.0	8.2	9.8	11.6	13.6	15.0	—	8.0	3.93
NSLP nonparticipants	480	9.3	0.48	4.6	5.4	6.9	8.9	11.3	13.8	15.5	—	21.0	2.97

	Zinc Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
NSLP participants	536	10.6	0.30	7.8	8.3	9.3	10.4	11.7	13.0	13.9	—	<3	0.87
NSLP nonparticipants	208	9.9	0.54	5.8 ^	6.5	7.9	9.7	11.7	13.7	15.1 ^	—	7.1 ^	3.21
Elementary School Students, Male											—		
NSLP participants	280	11.1	0.26	7.6 ^	8.2	9.4	10.8	12.5	14.3	15.4 ^	—	<3	0.80
NSLP nonparticipants	94	10.6	0.65	5.0 ^	5.9 ^	7.6	10.0	12.8	15.9 ^	18.2 ^	—	9.8 ^	4.82
Elementary School Students, Female											—		
NSLP participants	258	10.4	0.51	6.9 ^	7.5	8.7	10.2	11.9	13.6	14.9 ^	—	3.0 ^	2.74
NSLP nonparticipants	114	9.7	0.73	5.6 ^	6.4 ^	7.7	9.4	11.4	13.5 ^	14.9 ^	—	8.1 ^	3.84
Middle School Students											—		
NSLP participants	406	11.0	0.39	7.6	8.2	9.3	10.7	12.3	14.0	15.2	—	3.6 ^	6.17
NSLP nonparticipants	308	10.1	0.48	4.2 ^	5.1	6.9	9.4	12.5	15.9	18.3 ^	—	28.0	3.85
Middle School Students, Male											—		
NSLP participants	235	11.7	0.36	8.0 ^	8.7	9.9	11.5	13.2	15.0	16.3 ^	—	<3	1.76
NSLP nonparticipants	144	11.5	0.64	5.7 ^	6.7 ^	8.5	10.9	13.8	16.9 ^	19.3 ^	—	14.9	5.38
Middle School Students, Female											—		
NSLP participants	167	9.5	0.48	6.6 ^	7.1 ^	8.1	9.3	10.7	12.2 ^	13.1 ^	—	8.8 ^	11.70
NSLP nonparticipants	164	8.2	0.60	3.6 ^	4.2 ^	5.6	7.5	10.0	13.1 ^	15.4 ^	—	44.0	6.24
High School Students											—		
NSLP participants	308	12.1	0.70	7.4 ^	8.2	9.7	11.7	14.0	16.6	18.3 ^	—	8.9	7.92
NSLP nonparticipants	395	11.1	0.72	4.2 ^	5.1	7.0	9.9	13.8	18.4	21.8 ^	—	33.4	3.70
High School Students, Male											—		
NSLP participants	169	12.9	0.58	8.8 ^	9.5 ^	10.9	12.6	14.6	16.6 ^	18.0 ^	—	3.5 ^	2.06
NSLP nonparticipants	193	13.0	1.11	5.1 ^	6.2 ^	8.5	11.8	16.4	21.4 ^	25.3 ^	—	25.4	7.41
High School Students, Female											—		
NSLP participants	135	9.8	0.55	4.9 ^	5.6 ^	7.1	9.2	11.8	14.9 ^	17.2 ^	—	28.0	5.32
NSLP nonparticipants	202	8.8	0.53	4.0 ^	4.7	6.2	8.2	10.8	13.8	15.9 ^	—	38.5	3.96

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (9.4 mg and 6.8 mg, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.38. Usual Daily Potassium Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Potassium Intakes (mg)										AI (mg)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By Age/Gender Groups											
6 to 8 Years ^a											3800
NSLP participants	259	2,458	49.8	1,673 ^	1,818	2,081	2,412	2,779	3,149	3,403 ^	3800
NSLP nonparticipants	100	2,328	91.5	1,383 ^	1,546 ^	1,880	2,273	2,721	3,170 ^	3,462 ^	3800
9 to 13 Years											4500
NSLP participants	594	2,407	69.4	1,652	1,792	2,049	2,369	2,720	3,073	3,299	4500
NSLP nonparticipants	345	2,345	91.2	1,412 ^	1,596	1,924	2,308	2,729	3,139	3,396 ^	4500
9 to 13 Years, Male											4500
NSLP participants	336	2,525	71.4	1,794 ^	1,931	2,181	2,486	2,825	3,171	3,397 ^	4500
NSLP nonparticipants	157	2,516	104.9	1,948 ^	2,062 ^	2,263	2,512	2,751	2,980 ^	3,121 ^	4500
9 to 13 Years, Female											4500
NSLP participants	258	2,276	114.3	1,410 ^	1,562	1,851	2,211	2,632	3,068	3,371 ^	4500
NSLP nonparticipants	187	2,190	134.6	1,095 ^	1,300 ^	1,672	2,131	2,643	3,153 ^	3,497 ^	4500
14 to 18 Years ^b											4700
NSLP participants	401	2,563	102.8	1,469	1,650	1,988	2,449	3,012	3,625	4,052	4700
NSLP nonparticipants	466	2,476	100.3	1,231	1,425	1,809	2,343	2,982	3,702	4,197	4700
14 to 18 Years, Male ^b											4700
NSLP participants	230	2,870	148.9	1,727 ^	1,920	2,287	2,759	3,336	3,959	4,384 ^	4700
NSLP nonparticipants	229	2,824	185.5	1,528 ^	1,756	2,165	2,707	3,358	4,050	4,522 ^	4700
14 to 18 Years, Female ^b											4700
NSLP participants	171	2,166	67.7	1,196 ^	1,384 ^	1,705	2,120	2,573	3,026 ^	3,321 ^	4700
NSLP nonparticipants	237	2,020	93.8	1,108 ^	1,267	1,569	1,954	2,391	2,860	3,186 ^	4700
All Students											—
NSLP participants	1,254	2,449	49.4	1,663	1,806	2,070	2,402	2,774	3,155	3,404	—
NSLP nonparticipants	911	2,375	48.9	1,424	1,591	1,910	2,315	2,771	3,236	3,540	—
All Students, Male											—
NSLP participants	694	2,598	58.5	1,837	1,979	2,237	2,556	2,912	3,273	3,502	—
NSLP nonparticipants	431	2,575	71.6	1,589	1,763	2,092	2,515	2,983	3,461	3,792	—
All Students, Female											—
NSLP participants	560	2,275	60.3	1,472	1,620	1,894	2,235	2,605	2,979	3,228	—
NSLP nonparticipants	480	2,162	77.6	1,321	1,478	1,772	2,132	2,507	2,891	3,120	—

Potassium Intakes (mg)											AI (mg)
N	Mean	SE	Percentiles								
			5	10	25	50	75	90	95		
By School Type and Gender											
Elementary School Students											—
NSLP participants	540	2,450	51.2	1,895	2,007	2,202	2,435	2,680	2,914	3,062	—
NSLP nonparticipants	208	2,250	94.4	1,371 ^	1,524	1,823	2,196	2,610	3,039	3,325 ^	—
Elementary School Students, Male											—
NSLP participants	282	2,544	55.4	1,814 ^	1,955	2,202	2,503	2,844	3,192	3,407 ^	—
NSLP nonparticipants	94	2,296	125.5	1,571 ^	1,726 ^	1,969	2,265	2,597	2,910 ^	3,121 ^	—
Elementary School Students, Female											—
NSLP participants	258	2,401	77.8	1,729 ^	1,855	2,089	2,374	2,678	2,981	3,179 ^	—
NSLP nonparticipants	114	2,188	110.4	1,474 ^	1,603 ^	1,855	2,169	2,480	2,805 ^	2,998 ^	—
Middle School Students											—
NSLP participants	406	2,241	52.0	1,597	1,720	1,938	2,210	2,507	2,809	3,009	—
NSLP nonparticipants	308	2,284	88.4	1,106 ^	1,305	1,682	2,179	2,768	3,395	3,831 ^	—
Middle School Students, Male											—
NSLP participants	239	2,448	71.3	1,748 ^	1,876	2,117	2,415	2,735	3,051	3,272 ^	—
NSLP nonparticipants	144	2,532	102.0	1,415 ^	1,614 ^	1,986	2,446	2,982	3,553 ^	3,984 ^	—
Middle School Students, Female											—
NSLP participants	167	1,965	73.1	1,218 ^	1,358 ^	1,599	1,913	2,272	2,648 ^	2,892 ^	—
NSLP nonparticipants	164	1,962	103.3	894 ^	1,043 ^	1,369	1,820	2,386	3,053 ^	3,556 ^	—
High School Students											—
NSLP participants	308	2,608	124.4	1,410 ^	1,602	1,971	2,478	3,086	3,773	4,274 ^	—
NSLP nonparticipants	395	2,482	110.3	1,246 ^	1,444	1,818	2,349	2,992	3,698	4,187 ^	—
High School Students, Male											—
NSLP participants	173	2,936	177.2	1,623 ^	1,840 ^	2,240	2,790	3,468	4,227 ^	4,777 ^	—
NSLP nonparticipants	193	2,804	190.7	1,424 ^	1,653 ^	2,068	2,650	3,388	4,164 ^	4,738 ^	—
High School Students, Female											—
NSLP participants	135	2,212	89.5	1,286 ^	1,456 ^	1,760	2,162	2,605	3,042 ^	3,334 ^	—
NSLP nonparticipants	202	2,120	92.5	1,164 ^	1,338	1,652	2,048	2,512	3,003	3,315 ^	—

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The AI for these students is the same as the AI for students 14 to 18 years.

AI = Adequate Intake; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.39. Usual Daily Sodium Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Sodium (mg)													DGA = < 2,300 mg	
	Percentiles														
	N	Mean	SE	5	10	25	50	75	90	95	UL	% Above	SE	% Above	SE
By Age/Gender Groups															
6 to 8 Years ^a											1900				
NSLP participants	259	2,967	61.5	2,158 ^	2,309	2,580	2,921	3,297	3,677	3,938 ^	1900	>97	1.23	90.4	4.35
NSLP nonparticipants	100	2,825	102.6	1,597 ^	1,799 ^	2,221	2,732	3,334	3,955 ^	4,369 ^	1900	87.6	5.28^	71.6	6.14
9 to 13 Years											2200				
NSLP participants	594	2,989	85.1	2,220	2,364	2,627	2,952	3,307	3,666	3,895	2200	95.6	4.95	92.5	6.30
NSLP nonparticipants	345	3,253	175.8	1,658 ^	1,920	2,429	3,093	3,904	4,783	5,377 ^	2200	82.7	4.39	79.6	4.57
9 to 13 Years, Male											2200				
NSLP participants	336	3,155	91.4	2,347 ^	2,504	2,782	3,122	3,487	3,845	4,080 ^	2200	>97	4.95	96.0 ^	6.33
NSLP nonparticipants	158	3,320	135.3	2,240 ^	2,420 ^	2,774	3,242	3,765	4,323 ^	4,703 ^	2200	95.7	5.38 ^	93.7 ^	6.76
9 to 13 Years, Female											2200				
NSLP participants	258	2,799	110.9	2,062 ^	2,200	2,453	2,758	3,102	3,447	3,683 ^	2200	90.0	8.80	84.9	11.16
NSLP nonparticipants	187	3,204	326.9	1,317 ^	1,629 ^	2,233	3,033	3,986	4,990 ^	5,696 ^	2200	75.8	5.55	73.0	5.74
14 to 18 Years ^b											2300				
NSLP participants	401	3,411	132.4	1,980	2,218	2,661	3,265	3,998	4,794	5,347	2300	87.6	2.66	87.6	2.66
NSLP nonparticipants	466	3,346	124.4	1,925	2,170	2,636	3,245	3,932	4,661	5,140	2300	86.5	8.15	86.5	8.15
14 to 18 Years, Male ^b											2300				
NSLP participants	230	3,860	197.5	2,153 ^	2,429	2,963	3,668	4,550	5,529	6,207 ^	2300	92.6	2.72 ^	92.6 ^	2.72
NSLP nonparticipants	229	3,762	170.6	2,507 ^	2,760	3,186	3,706	4,281	4,845	5,208 ^	2300	>97	3.81	>97	3.81
14 to 18 Years, Female ^b											2300				
NSLP participants	171	2,858	103.0	2,004 ^	2,171 ^	2,453	2,815	3,214	3,616 ^	3,882 ^	2300	83.6	13.03	83.6	13.03
NSLP nonparticipants	237	2,804	155.4	1,678 ^	1,872	2,240	2,714	3,258	3,852	4,272 ^	2300	71.8	19.72	71.8	19.72
All Students											—				
NSLP participants	1,254	3,084	62.6	2,216	2,374	2,664	3,031	3,442	3,864	4,141	—	95.6	2.53	92.7	3.68
NSLP nonparticipants	911	3,175	91.7	1,813	2,039	2,482	3,063	3,739	4,453	4,930	—	85.9	4.35	81.9	4.63
All Students, Male											—				
NSLP participants	694	3,320	86.8	2,308	2,490	2,828	3,252	3,736	4,239	4,563	—	97.0	2.37	95.2	3.37
NSLP nonparticipants	431	3,348	83.9	2,092	2,307	2,719	3,258	3,866	4,499	4,946	—	92.7	4.53	90.2	5.34
All Students, Female											—				
NSLP participants	560	2,810	58.6	2,130	2,259	2,493	2,781	3,090	3,400	3,606	—	93.3	5.64	88.0	8.35
NSLP nonparticipants	480	2,983	162.2	1,615	1,843	2,293	2,884	3,542	4,263	4,712	—	79.8	8.28	74.7	8.45

Sodium (mg)											UL			DGA = < 2,300 mg	
Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	UL	% Above	SE	% Above	SE
By School Type and Gender															
Elementary School Students															
NSLP participants	540	3,009	62.7	2,187	2,339	2,615	2,963	3,346	3,740	3,999	—	96.7	2.19 ^	91.6	4.21
NSLP nonparticipants	208	2,970	192.4	1,616 ^	1,856	2,295	2,867	3,530	4,208	4,681 ^	—	84.0	8.65	74.8	9.94
Elementary School Students, Male															
NSLP participants	282	3,180	71.1	2,266 ^	2,438	2,742	3,119	3,554	4,005	4,287 ^	—	>97	2.25	94.2 ^	4.37
NSLP nonparticipants	94	2,875	175.6	1,588 ^	1,809 ^	2,191	2,718	3,400	4,138 ^	4,690 ^	—	80.7	7.40^	70.1	9.29
Elementary School Students, Female															
NSLP participants	258	2,810	79.7	2,127 ^	2,257	2,494	2,779	3,087	3,395	3,600 ^	—	95.8	3.91 ^	88.0	7.49
NSLP nonparticipants	114	3,071	284.8	1,617 ^	1,887 ^	2,355	2,952	3,658	4,413 ^	4,903 ^	—	85.2	10.24 ^	77.2	12.99
Middle School Students															
NSLP participants	405	2,873	79.6	2,158	2,295	2,538	2,839	3,166	3,497	3,716	—	93.0	7.15	89.7	9.10
NSLP nonparticipants	308	3,036	120.2	1,757 ^	1,986	2,405	2,942	3,560	4,204	4,646 ^	—	82.2	7.04	79.2	7.40
Middle School Students, Male															
NSLP participants	239	3,062	115.8	2,189 ^	2,345	2,641	3,014	3,419	3,827	4,117 ^	—	94.1	4.37 ^	91.8 ^	5.20
NSLP nonparticipants	144	3,358	168.2	1,882 ^	2,137 ^	2,619	3,226	3,949	4,736 ^	5,341 ^	—	87.7	6.69 ^	85.5	7.10
Middle School Students, Female															
NSLP participants	167	2,616	73.0	2,006 ^	2,130 ^	2,335	2,589	2,865	3,142 ^	3,317 ^	—	84.8	9.12	77.8	10.70
NSLP nonparticipants	164	2,624	126.9	1,834 ^	1,976 ^	2,254	2,587	2,946	3,316 ^	3,568 ^	—	77.0	19.00	71.8	21.31
High School Students															
NSLP participants	308	3,526	155.8	1,980 ^	2,233	2,716	3,370	4,146	5,012	5,638 ^	—	88.2	2.74	88.2	2.75
NSLP nonparticipants	395	3,368	156.7	2,093 ^	2,325	2,739	3,286	3,899	4,527	4,940 ^	—	90.7	8.66	90.6	8.67
High School Students, Male															
NSLP participants	173	4,013	220.8	2,220 ^	2,516 ^	3,062	3,814	4,739	5,776 ^	6,527 ^	—	93.8	2.96 ^	93.8 ^	2.98
NSLP nonparticipants	193	3,757	213.8	2,499 ^	2,747 ^	3,163	3,690	4,293	4,869 ^	5,265 ^	—	>97	3.67	>97	3.67

	Sodium (mg)														DGA = < 2,300 mg	
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	UL	% Above	SE	% Above	SE	
High School Students, Female											—					
NSLP participants	135	2,961	122.9	1,892 ^	2,075 ^	2,411	2,874	3,410	3,970 ^	4,361 ^	—	80.2	8.87	80.1	8.90	
NSLP nonparticipants	202	2,908	173.0	2,009 ^	2,181	2,483	2,852	3,276	3,717	3,995 ^	—	85.0	19.63	85.0	19.66	

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans*; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

^ = Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 97 and 100 percent are displayed as >97.

Table I.40. Usual Daily Dietary Fiber Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Dietary Fiber Intakes (g)										AI (g)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By Age/Gender Groups											
6 to 8 Years ^a											25
NSLP participants	259	18	0.6	11 ^	13	15	18	21	24	26 ^	25
NSLP nonparticipants	100	16	0.7	11 ^	12 ^	13	15	18	20 ^	21 ^	25
9 to 13 Years											—
NSLP participants	594	16	0.5	11	12	14	16	19	22	24	—
NSLP nonparticipants	345	17	0.6	11 ^	12	14	17	20	23	25 ^	—
9 to 13 Years, Male											31
NSLP participants	336	17	0.6	11 ^	12	14	17	20	24	26 ^	31
NSLP nonparticipants	158	18	1.0	13 ^	14 ^	16	18	21	23 ^	24 ^	31
9 to 13 Years, Female											26
NSLP participants	258	15	0.7	11 ^	12	13	15	17	20	21 ^	26
NSLP nonparticipants	187	16	0.9	9 ^	11 ^	13	16	19	22 ^	25 ^	26
14 to 18 Years ^b											—
NSLP participants	401	18	0.8	9	10	13	17	21	27	31	—
NSLP nonparticipants	466	16	0.9	7	8	11	15	20	25	29	—
14 to 18 Years, Male ^b											38
NSLP participants	230	20	1.2	9 ^	11	14	18	24	30	35 ^	38
NSLP nonparticipants	229	18	1.3	10 ^	12	14	18	22	26	29 ^	38
14 to 18 Years, Female ^b											26
NSLP participants	171	15	0.6	9 ^	10 ^	12	15	18	21 ^	23 ^	26
NSLP nonparticipants	237	13	0.8	6 ^	7	9	13	16	21	24 ^	26
All Students											—
NSLP participants	1,254	17	0.4	11	12	14	17	20	23	25	—
NSLP nonparticipants	911	17	0.4	9	10	13	16	20	23	26	—
All Students, Male											—
NSLP participants	694	18	0.5	10	12	14	17	21	26	28	—
NSLP nonparticipants	431	18	0.7	11	12	15	18	21	24	26	—
All Students, Female											—
NSLP participants	560	16	0.4	11	12	14	16	18	20	21	—
NSLP nonparticipants	480	15	0.6	8	9	12	15	18	22	24	—

	Dietary Fiber Intakes (g)										AI (g)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By School Type and Gender											
Elementary School Students											—
NSLP participants	540	17	0.4	12	13	15	17	19	21	23	—
NSLP nonparticipants	208	16	0.9	10 ^	11	13	16	19	22	24 ^	—
Elementary School Students, Male											—
NSLP participants	282	18	0.5	12 ^	13	15	17	20	23	25 ^	—
NSLP nonparticipants	94	17	1.5	9 ^	10 ^	13	16	20	24 ^	27 ^	—
Elementary School Students, Female											—
NSLP participants	258	17	0.6	12 ^	13	15	17	19	21	22 ^	—
NSLP nonparticipants	114	16	1.0	11 ^	12 ^	14	16	18	21 ^	22 ^	—
Middle School Students											—
NSLP participants	406	16	0.4	11	12	14	16	18	21	22	—
NSLP nonparticipants	308	15	0.4	8 ^	10	12	15	18	21	23 ^	—
Middle School Students, Male											—
NSLP participants	239	17	0.6	12 ^	13	15	17	19	22	23 ^	—
NSLP nonparticipants	144	17	0.7	10 ^	11 ^	14	16	19	22 ^	25 ^	—
Middle School Students, Female											—
NSLP participants	167	15	0.4	9 ^	10 ^	12	14	17	19 ^	21 ^	—
NSLP nonparticipants	164	13	0.6	7 ^	8 ^	10	13	16	19 ^	22 ^	—
High School Students											—
NSLP participants	308	18	1.0	8 ^	10	12	17	22	28	32 ^	—
NSLP nonparticipants	395	16	0.9	7 ^	9	12	16	20	26	29 ^	—
High School Students, Male											—
NSLP participants	173	20	1.3	9 ^	10 ^	14	18	24	31 ^	37 ^	—
NSLP nonparticipants	193	18	1.3	10 ^	11 ^	14	18	22	26 ^	29 ^	—
High School Students, Female											—
NSLP participants	135	15	0.7	9 ^	10 ^	12	15	18	21 ^	23 ^	—
NSLP nonparticipants	202	14	0.9	6 ^	7	10	13	18	23	26 ^	—

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing usual daily intakes relative to the AI, the AI for males and females was used for these students (38 g and 25 g, respectively)

AI = Adequate Intake; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.41. Usual Daily Dietary Fiber Intakes, Per 1,000 Calories: NSLP Participants and Matched Comparison Group of Nonparticipants

	Dietary Fiber Intakes (g per 1,000 kcal)										AI (g)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By Age/Gender Groups											
6 to 8 Years ^a											14
NSLP participants	259	10	0.2	7 ^	8	9	10	11	12	13 ^	14
NSLP nonparticipants	100	9	0.5	6 ^	6 ^	7	9	10	12 ^	13 ^	14
9 to 13 Years											14
NSLP participants	594	9	0.2	6	6	7	9	10	11	12	14
NSLP nonparticipants	345	9	0.3	6 ^	7	8	9	10	11	12 ^	14
9 to 13 Years, Male											14
NSLP participants	336	9	0.3	6 ^	6	7	9	10	11	12 ^	14
NSLP nonparticipants	158	9	0.3	7 ^	7 ^	8	9	10	11 ^	11 ^	14
9 to 13 Years, Female											14
NSLP participants	258	9	0.3	6 ^	6	7	9	10	11	12 ^	14
NSLP nonparticipants	187	9	0.5	6 ^	6 ^	7	9	10	12 ^	13 ^	14
14 to 18 Years ^b											14
NSLP participants	401	9	0.2	6	6	7	9	10	11	12	14
NSLP nonparticipants	466	8	0.3	6	6	7	8	9	10	11	14
14 to 18 Years, Male ^b											14
NSLP participants	230	9	0.3	6 ^	6	7	8	10	11	12 ^	14
NSLP nonparticipants	229	8	0.4	6 ^	6	7	8	9	10	11 ^	14
14 to 18 Years, Female ^b											14
NSLP participants	171	9	0.4	6 ^	7 ^	8	9	10	12 ^	12 ^	14
NSLP nonparticipants	237	8	0.4	5 ^	6	7	8	9	10	11 ^	14
All Students											—
NSLP participants	1,254	9	0.1	6	7	8	9	10	12	13	—
NSLP nonparticipants	911	9	0.2	6	6	7	8	10	11	12	—
All Students, Male											—
NSLP participants	694	9	0.2	6	7	8	9	10	12	13	—
NSLP nonparticipants	431	9	0.3	6	7	7	9	10	11	12	—
All Students, Female											—
NSLP participants	560	9	0.2	6	7	8	9	10	12	13	—
NSLP nonparticipants	480	9	0.3	6	6	7	8	10	11	12	—

Dietary Fiber Intakes (g per 1,000 kcal)											AI (g)
N	Mean	SE	Percentiles								
			5	10	25	50	75	90	95		
By School Type and Gender											
Elementary School Students											—
NSLP participants	540	9	0.2	6	7	8	9	11	12	13	—
NSLP nonparticipants	208	9	0.4	6 ^	7	8	9	11	12	13 ^	—
Elementary School Students, Male											—
NSLP participants	282	9	0.2	6 ^	7	8	9	11	12	13 ^	—
NSLP nonparticipants	94	9	0.7	5 ^	6 ^	7	9	11	13 ^	15 ^	—
Elementary School Students, Female											—
NSLP participants	258	9	0.2	6 ^	7	8	9	10	12	13 ^	—
NSLP nonparticipants	114	10	0.6	6 ^	7 ^	8	9	11	13 ^	14 ^	—
Middle School Students											—
NSLP participants	406	9	0.2	7	7	8	9	10	11	12	—
NSLP nonparticipants	308	8	0.2	6 ^	6	7	8	9	11	11 ^	—
Middle School Students, Male											—
NSLP participants	239	9	0.3	6 ^	7	8	9	10	11	12 ^	—
NSLP nonparticipants	144	8	0.3	6 ^	7 ^	8	8	9	10 ^	11 ^	—
Middle School Students, Female											—
NSLP participants	167	9	0.2	6 ^	7 ^	8	9	10	12 ^	12 ^	—
NSLP nonparticipants	164	8	0.4	5 ^	6 ^	7	8	10	11 ^	12 ^	—
High School Students											—
NSLP participants	308	8	0.2	6 ^	6	7	8	10	11	12 ^	—
NSLP nonparticipants	395	8	0.3	6 ^	6	7	8	9	11	11 ^	—
High School Students, Male											—
NSLP participants	173	8	0.3	6 ^	6 ^	7	8	9	11 ^	11 ^	—
NSLP nonparticipants	193	8	0.4	6 ^	6 ^	7	8	9	10 ^	11 ^	—
High School Students, Female											—
NSLP participants	135	9	0.3	6 ^	6 ^	7	9	10	11 ^	12 ^	—
NSLP nonparticipants	202	8	0.4	5 ^	6	7	8	10	11	12 ^	—

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The AI for these students is the same as the AI for students 14 to 18 years.

AI = Adequate Intake; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table I.42. Usual Daily Cholesterol Intakes: NSLP Participants and Matched Comparison Group of Nonparticipants

	Cholesterol Intakes (mg)										DGA = < 300 mg	
	Percentiles											
	N	Mean	SE	5	10	25	50	75	90	95	% Above DGA	SE
By Age/Gender Groups												
6 to 8 Years ^a												
NSLP participants	258	169	9.1	99 ^	111	133	162	196	235	261 ^	<3	2.12
NSLP nonparticipants	100	189	18.8	85 ^	101 ^	134	178	232	291 ^	331 ^	8.6 ^	4.95
9 to 13 Years												
NSLP participants	593	205	7.5	122	135	161	197	239	285	318	7.4	4.11
NSLP nonparticipants	345	190	15.6	80 ^	96	130	176	235	301	346 ^	10.1	6.51
9 to 13 Years, Male												
NSLP participants	335	221	6.6	137 ^	151	178	214	256	300	332 ^	10.1	5.79
NSLP nonparticipants	158	184	16.4	89 ^	104 ^	133	174	223	278 ^	316 ^	6.7 ^	5.67
9 to 13 Years, Female												
NSLP participants	258	186	11.5	114 ^	126	149	179	215	252	278 ^	<3	2.74
NSLP nonparticipants	187	199	32.1	74 ^	92 ^	129	182	250	326 ^	382 ^	14.1	11.84
14 to 18 Years ^b												
NSLP participants	401	226	13.5	106	125	161	211	276	347	398	18.6	7.84
NSLP nonparticipants	466	226	11.0	110	129	166	216	273	336	378	17.2	7.23
14 to 18 Years, Male ^b												
NSLP participants	230	269	19.2	129 ^	152	196	254	327	406	461 ^	32.4	15.16
NSLP nonparticipants	229	257	17.8	155 ^	175	208	251	300	350	383 ^	24.9	13.08
14 to 18 Years, Female ^b												
NSLP participants	171	171	11.7	94 ^	107 ^	131	164	203	246 ^	276 ^	<3	3.80
NSLP nonparticipants	237	184	12.0	90 ^	105	136	175	222	273	310 ^	6.1 ^	6.80
All Students												
NSLP participants	1,250	198	7.0	114	128	154	189	233	280	314	6.7	3.66
NSLP nonparticipants	911	203	9.3	94	110	144	191	248	311	355	11.8	4.91
All Students, Male												
NSLP participants	692	217	7.8	129	143	171	209	253	303	337	10.5	5.11
NSLP nonparticipants	431	209	13.2	88	105	141	193	258	331	385	15.0	4.54
All Students, Female												
NSLP participants	558	176	8.5	104	116	139	169	206	245	273	<3	2.14
NSLP nonparticipants	480	197	16.9	95	111	143	187	238	296	334	9.4	8.16

	Cholesterol Intakes (mg)										DGA = < 300 mg	
	Percentiles											
	N	Mean	SE	5	10	25	50	75	90	95	% Above DGA	SE
By School Type and Gender												
Elementary School Students												
NSLP participants	539	189	8.0	108	121	147	180	221	266	298	4.8	3.20
NSLP nonparticipants	208	198	21.9	82 ^	99	132	181	245	318	375 ^	12.7	8.16
Elementary School Students, Male												
NSLP participants	281	198	6.5	118 ^	132	157	190	229	273	303 ^	5.4 ^	3.53
NSLP nonparticipants	94	186	35.3	44 ^	60 ^	92	147	237	357 ^	462 ^	15.1 ^	6.98
Elementary School Students, Female												
NSLP participants	258	176	12.0	105 ^	117	140	170	205	243	270 ^	<3	2.31
NSLP nonparticipants	114	210	28.5	109 ^	126 ^	156	197	250	310 ^	353 ^	12.2 ^	12.31
Middle School Students												
NSLP participants	404	201	8.3	116	130	156	192	236	282	316	7.0	3.73
NSLP nonparticipants	308	180	9.0	88 ^	103	131	170	218	271	309 ^	5.9 ^	4.27
Middle School Students, Male												
NSLP participants	238	217	14.0	131 ^	145	172	209	252	298	332 ^	9.6	6.52
NSLP nonparticipants	144	191	13.0	84 ^	100 ^	132	176	233	302 ^	348 ^	10.2 ^	4.38
Middle School Students, Female												
NSLP participants	166	180	11.1	108 ^	119 ^	142	173	209	247 ^	274 ^	<3	2.00
NSLP nonparticipants	164	152	13.1	82 ^	93 ^	115	145	181	222 ^	252 ^	<3	2.95
High School Students												
NSLP participants	308	229	15.5	101 ^	120	157	210	279	360	421 ^	19.9	9.34
NSLP nonparticipants	395	225	10.1	128 ^	145	176	218	266	315	348 ^	13.3	10.29
High School Students, Male												
NSLP participants	173	278	21.9	126 ^	150 ^	196	260	340	430 ^	494 ^	36.2	18.65
NSLP nonparticipants	193	273	19.3	129 ^	149 ^	191	254	333	419 ^	484 ^	33.6	6.98
High School Students, Female												
NSLP participants	135	166	12.1	93 ^	104 ^	126	158	197	239 ^	270 ^	<3	3.42
NSLP nonparticipants	202	174	11.3	93 ^	108	133	166	206	250	279 ^	<3	4.21

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

This analysis made comparisons to the 2010 *Dietary Guidelines for Americans* recommended limit on cholesterol because these recommendations were in effect when data for this study were collected. The 2015–2020 *Dietary Guidelines for Americans* do not place a limit on cholesterol.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DGA = 2010 *Dietary Guidelines for Americans*; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NSLP = National School Lunch Program; SE = standard error.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table I.43. Percentage of NSLP Participants and Matched Comparison Group of Nonparticipants with Acceptable, Inadequate, or Excessive Usual Daily Nutrient Intakes

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Macronutrients								
Total Fat								
% within AMDR	88.8	78.6	80.3	91.0	59.0	79.7	83.9	78.4
% > AMDR	7.9	14.6	18.1	6.6	28.8	19.2	12.9	17.0
% < AMDR	3.3 ^	6.8 ^	<3	<3	12.3	<3**	3.3	4.6
Saturated Fat								
% > DGA	59.4	61.9	70.5	42.4	62.6	63.5	62.4	60.6
Linoleic Acid								
% within AMDR	94.9	71.6**	95.3 ^	85.7	88.3	95.9 ^	93.9	85.2
% > AMDR	<3	6.8**^	<3	5.1 ^	3.1 ^	<3	<3	3.5
% < AMDR	4.9	21.7*	<3	9.2	8.6	3.1 ^	5.3	11.3
Alpha-Linolenic Acid								
% within AMDR	59.5	56.7	73.8	57.9	66.1	52.4	62.4	56.8
% > AMDR	<3	<3	<3	<3	<3	<3	<3	<3
% < AMDR	40.5	42.5	26.1	42.1	33.9	47.3	37.6	43.0
Carbohydrate								
% < EAR	<3	<3	<3	<3	<3	<3	<3	<3
% within AMDR	>97	>97	>97	>97	84.4	95.3 ^	98.1	96.7
% > AMDR	<3	<3	<3	<3	<3	<3	<3	<3
% < AMDR	<3	<3	<3	<3	12.9	4.1 ^	<3	<3
Protein								
% < EAR	<3	8.2 ^	7.7	10.3	20.6	24.6	9.1	16.6
% within AMDR	>97	>97	>97	>97	>97	>97	>97	97.7
% > AMDR	<3	<3	<3	<3	<3	<3	<3	<3
% < AMDR	<3	<3	<3	<3	<3	<3	<3	2.3
Vitamins and Minerals with EARs (Percentage < EAR)								
Vitamin A	11.0	11.2	35.9	36.4	45.5	50.4	24.7	26.2
Vitamin C ^a	<3	9.2 ^	14.6	33.2	48.3	44.5	11.9	24.5*
Vitamin D	67.5	95.7***^	70.4	81.9	75.1	82.7	69.4	85.3***
Vitamin E	64.4	57.7	90.7	79.4	85.5	81.9	73.6	68.2
Vitamin B ₆	<3	<3	<3	10.3***	<3	12.8*	<3	3.3*
Vitamin B ₁₂	<3	<3	<3	5.2 ^	<3	15.6***	<3	4.4*
Folate	<3	3.9 ^	5.4	12.4	7.7	30.0**	2.7	10.7**
Niacin ^b	<3	<3	<3	<3	<3	6.8**	<3	<3
Riboflavin	<3	<3	<3	4.5 ^	<3	12.4**	<3	2.7**

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Thiamin	<3	<3	<3	3.3 ^	<3	19.2**	<3	3.9*
Calcium	27.5	46.4*	58.8	63.2	40.4	57.1**	38.5	50.4**
Iron ^c	<3	<3	<3	<3	<3	<3	<3	<3
Magnesium	4.7	13.1	26.7	35.5	63.6	69.5	27.6	35.4*
Phosphorus	<3	13.7*	14.9	22.9	16.6	31.1**	8.8	19.4**
Zinc	<3	7.1 ^	3.6 ^	28.0***	8.9	33.4**	2.7	17.4***
Sodium and Cholesterol (% > UL or DGA)								
Sodium (% > UL)	96.7 ^	84.0	93.0	82.2	88.2	90.7	95.6	85.9
Sodium (% > DGA)	91.6	74.8	89.7	79.2	88.2	90.6	92.7	81.9
Cholesterol (% > DGA) ^d	4.8	12.7	7.0	5.9 ^	19.9	13.3	6.7	11.8
Potassium and Dietary Fiber (mean % of AI)^e								
Potassium	59.3	54.3*	49.4	50.3	55.5	52.8	56.6	54.1
Dietary Fiber	64.6	61.6	54.6	51.4	55.5	51.0	60.6	57.5
Dietary Fiber Density (g/1,000 calories)	66.2	66.7	64.7	60.0*	60.5	59.5	64.6	61.9
Number of Students	540	208	406	308	308	395	1,254	911

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Actual sample sizes for some nutrients and subgroups of students differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by student subgroup basis, in order to estimate usual nutrient intake distributions.

^aThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^bNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^cComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^dThis analysis made comparisons to the 2010 *Dietary Guidelines for Americans* recommended limit on cholesterol because these recommendations were in effect when data for this study were collected. The 2015–2020 *Dietary Guidelines for Americans* do not place a limit on cholesterol.

^eThe AI cannot be used to estimate the prevalence of inadequate intakes of potassium and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = *2010 Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; NCI = National Cancer Institute; NSLP = National School Lunch Program; UL = Tolerable Upper Intake Level.

^Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

Table I.44. Mean Proportion of 24-Hour Nutrient Intakes Contributed by Lunch: NSLP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Calories	26.4	31.3**	29.8	32.0*	27.8	31.7***
Macronutrients						
Total Fat	25.5	32.1**	28.5	32.0**	26.7	32.0***
Saturated Fat	24.2	30.3**	26.2	29.9**	25.0	30.1***
Monounsaturated Fat	25.2	31.7**	28.6	32.5**	26.5	32.2***
Polyunsaturated Fat	29.8	35.3*	34.3	35.7	31.6	35.5*
Linoleic acid	30.0	35.6*	34.5	36.1	31.8	35.9*
Alpha-linolenic acid	30.5	34.1	35.0	31.2*	32.3	32.6
Carbohydrate	26.4	30.9*	31.0	32.6	28.2	31.8**
Protein	31.7	32.0	33.2	30.7	32.3	31.3
Vitamins						
Vitamin A	30.3	25.6	28.6	19.5***	29.6	22.4***
Vitamin C	28.0	30.8	31.5	32.2	29.4	31.6
Vitamin D	40.8	32.1*	38.3	22.1***	39.8	26.8***
Vitamin E	27.1	34.3**	30.8	35.8**	28.6	35.1***
Vitamin B ₆	26.0	25.8	28.3	26.7	26.9	26.3
Vitamin B ₁₂	29.0	24.6	28.2	20.0***	28.7	22.1***
Folate	19.8	24.4	25.7	27.5	22.1	26.0*
Niacin	25.9	30.3	29.3	32.6*	27.2	31.5**
Riboflavin	29.4	28.7	30.0	25.5***	29.6	27.0*
Thiamin	25.5	28.4	29.8	30.9	27.2	29.7*
Minerals						
Calcium	32.9	31.4	34.4	30.6*	33.5	31.0
Iron	23.6	27.7	27.3	28.8	25.1	28.3*
Magnesium	32.6	32.4	35.0	31.5**	33.5	31.9
Phosphorus	32.4	31.3	33.3	29.4**	32.8	30.3*
Potassium	32.3	30.7	33.5	30.7*	32.8	30.7*
Sodium	26.9	30.8	30.5	33.5*	28.4	32.3**
Zinc	29.5	28.2	31.5	27.9*	30.3	28.1

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Other Dietary Components						
Dietary Fiber	34.9	36.2	38.8	34.5**	36.4	35.3
Cholesterol	27.4	26.1	26.2	25.0	26.9	25.6
Number of Students	757	210	475	614	1,232	824

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls, Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level and students who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

Lunch intakes for both NSLP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at lunch. For NSLP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable lunch, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

NSLP = National School Lunch Program.

Table I.45. Percentage of NSLP Participants and Matched Comparison Group of Nonparticipants with Acceptable, Inadequate, or Excessive Usual Daily Nutrient Intakes, by Household Poverty Level

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Macronutrients						
Total Fat						
% within AMDR	91.0	78.2	73.0	77.3	83.6	78.4
% > AMDR	6.1	16.3	23.8	18.7	13.0	17.1
% < AMDR	2.9	5.5 ^	3.2 ^	4.0	3.3	4.5
Saturated Fat						
% > DGA	55.3	54.0	66.6	66.6	62.3	60.9
Linoleic Acid						
% within AMDR	95.5	90.5	90.7	82.5	93.9	85.4
% > AMDR	<3	<3	<3	3.4	<3	3.5
% < AMDR	4.3	6.5 ^	6.5	14.1	5.3	11.1
Alpha-Linolenic Acid						
% within AMDR	63.4	66.0	62.8	51.9	62.3	60.4
% > AMDR	<3	<3	<3	<3	<3	<3
% < AMDR	36.6	33.9	37.2	48.1	37.7	39.5
Carbohydrate						
% < EAR	<3	<3	<3	<3	<3	<3
% within AMDR	>97	>97	96.1 ^	94.8	98.1	96.9
% > AMDR	<3	<3	<3	<3	<3	<3
% < AMDR	<3	<3	3.6 ^	3.3	<3	<3
Protein						
% < EAR	8.6	23.3*	10.0	10.9	9.1	16.7
% within AMDR	>97	>97	>97	>97	>97	>97
% > AMDR	<3	<3	<3	<3	<3	<3
% < AMDR	<3	<3	<3	<3	<3	<3
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	19.1	33.2*	29.7	16.8	24.0	25.9
Vitamin C ^a	5.7	22.7	21.4	24.0	11.3	24.5*
Vitamin D	67.1	84.5*	71.9	85.7**	69.4	85.1***
Vitamin E	75.6	74.1	71.1	61.9	73.3	67.8
Vitamin B ₆	<3	<3	<3	<3	<3	3.1*
Vitamin B ₁₂	<3	3.9 ^	<3	3.9	<3	4.3*

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Folate	<3	16.5***	4.0 ^	4.0	2.6	10.6**
Niacin ^b	<3	<3	<3	<3	<3	<3
Riboflavin	<3	3.4 ^	<3	<3	<3	2.5**
Thiamin	<3	6.2 ^	<3	<3	<3	3.6*
Calcium	35.0	56.6**	41.0	43.3	38.2	49.6**
Iron ^c	<3	4.6 ^	<3	<3	<3	<3
Magnesium	23.0	37.8*	33.9	31.5	26.9	35.1*
Phosphorus	3.8	23.7**	14.3	13.9	8.7	19.6**
Zinc	<3	23.4***	3.8 ^	10.8	2.7	17.4***
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	95.8	77.5*	89.8	94.9	95.6	85.9
Sodium (% > DGA)	92.2	72.2*	85.9	92.7	92.5	81.8
Cholesterol (% > DGA) ^d	5.5	13.3	7.5	12.3	6.5	11.8
Potassium and Dietary Fiber (Mean % of AI)^e						
Potassium	57.5	51.7**	56.2	56.5	56.7	54.1
Dietary Fiber (mean % of AI)	61.7	54.1**	59.1	61.1	60.9	57.6
Dietary Fiber Density (g/1,000 calories)	66.3	59.4**	62.3	63.7	64.8	61.7
Number of Students	757	247	475	644	1,232	891

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a lunch, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Actual sample sizes for some nutrients and subgroups of students differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by student subgroup basis, in order to estimate usual nutrient intake distributions.

^aThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^bNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^cComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^dThis analysis made comparisons to the 2010 *Dietary Guidelines for Americans* recommended limit on cholesterol because these recommendations were in effect when data for this study were collected. The 2015–2020 *Dietary Guidelines for Americans* do not place a limit on cholesterol.

^eThe AI cannot be used to estimate the prevalence of inadequate intakes of potassium and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; NCI = National Cancer Institute; NSLP = National School Lunch Program; UL = Tolerable Upper Intake Level.

[^]Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

This page has been left blank for double-sided copying.

APPENDIX J

CHAPTER 9 SUPPLEMENTAL TABLES

This page has been left blank for double-sided copying.

TABLES

J.1	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Lunches Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants: All Students.....	J.5
J.2	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Lunches Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants: Elementary School Students	J.6
J.3	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Lunches Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants: Middle School Students	J.7
J.4	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Lunches Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants: High School Students	J.8
J.5	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants: All Students	J.9
J.6	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants: Elementary School Students.....	J.10
J.7	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants: Middle School Students	J.11
J.8	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants: High School Students.....	J.12
J.9	Mean Healthy Eating Index-2010 Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level.....	J.13
J.10	Mean Healthy Eating Index-2010 Scores, as a Percentage of Maximum Scores, for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level	J.15

This page has been left blank for double-sided copying.

Table J.1. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Lunches Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants: All Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	5.0	4.9	100.0	97.1
Whole Fruit	5	5.0	5.0	100.0	100.0
Total Vegetables	5	2.6	1.9**	52.4	37.5**
Greens and Beans	5	1.3	1.4	26.7	27.4
Whole Grains	10	10.0	6.3***	100.0	62.6***
Dairy	10	10.0	6.9***	100.0	68.9***
Total Protein Foods	5	5.0	5.0	99.2	99.9
Seafood and Plant Proteins	5	2.7	4.6**	53.7	91.2**
Fatty Acids	10	6.4	6.2	64.5	62.5
Moderation (higher score indicates lower consumption)					
Refined Grains	10	8.8	3.6***	87.6	36.0***
Sodium	10	4.2	4.0	42.4	39.6
Empty Calories	20	19.0	15.4***	95.2	77.2***
Total Score	100	80.1	65.1***	80.1	65.1***
Number of Students		1,254	843	1,254	843

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Lunch intakes for both NSLP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at lunch. For NSLP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable lunch, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school. HEI scores are based on lunch intakes. Higher HEI scores reflect higher diet quality. Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level or ** 0.01 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

Table J.2. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Lunches Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants: Elementary School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	5.0	4.9	100.0	98.3
Whole Fruit	5	5.0	5.0	100.0	100.0
Total Vegetables	5	2.7	1.1***	54.1	21.9**
Greens and Beans	5	1.7	0.8 ^	33.5	16.9 ^
Whole Grains	10	10.0	6.3**	99.9	63.0**
Dairy	10	10.0	7.3**	100.0	73.2**
Total Protein Foods	5	4.8	5.0	95.7	99.3
Seafood and Plant Proteins	5	2.5	4.7**	50.4	94.8**
Fatty Acids	10	5.9	6.4	58.5	63.6
Moderation (higher score indicates lower consumption)					
Refined Grains	10	8.9	3.3****^	89.5	32.9****^
Sodium	10	4.7	5.0	47.1	49.9
Empty Calories	20	18.7	15.0**	93.6	75.2**
Total Score	100	79.9	64.9***	79.9	64.9***
Number of Students		540	204	540	204

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Lunch intakes for both NSLP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at lunch. For NSLP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable lunch, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school. HEI scores are based on lunch intakes. Higher HEI scores reflect higher diet quality. Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level or ** 0.01 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table J.3. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Lunches Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants: Middle School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	5.0	4.8	100.0	95.0
Whole Fruit	5	5.0	5.0	100.0	100.0
Total Vegetables	5	2.2	2.0	44.7	39.4
Greens and Beans	5	0.9 ^	1.0 ^	18.0 ^	19.5 ^
Whole Grains	10	10.0	7.5*	100.0	75.3*
Dairy	10	10.0	6.6***	100.0	66.5***
Total Protein Foods	5	5.0	5.0	100.0	99.4
Seafood and Plant Proteins	5	2.5	4.6*	50.1	91.4*
Fatty Acids	10	7.9	9.3	79.5	93.4
Moderation (higher score indicates lower consumption)					
Refined Grains	10	8.8	3.9***	87.7	38.9***
Sodium	10	4.6	3.9	45.9	38.6
Empty Calories	20	19.9	17.4***	99.6	87.2***
Total Score	100	81.8	70.9***	81.8	70.9***
Number of Students		406	277	406	277

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Lunch intakes for both NSLP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at lunch. For NSLP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable lunch, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school. HEI scores are based on lunch intakes. Higher HEI scores reflect higher diet quality. Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level or * 0.05 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table J.4. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Lunches Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants: High School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.9	3.8*	97.3	75.7*
Whole Fruit	5	5.0	5.0	100.0	99.4
Total Vegetables	5	2.7	2.9	53.6	58.2
Greens and Beans	5	0.7 ^	2.4**	14.8 ^	48.2**
Whole Grains	10	10.0	6.4***	100.0	63.7***
Dairy	10	10.0	7.0***	100.0	69.7***
Total Protein Foods	5	5.0	5.0	99.9	100.0
Seafood and Plant Proteins	5	3.4	3.5	67.1	69.5
Fatty Acids	10	6.6	5.3	66.1	52.7
Moderation (higher score indicates lower consumption)					
Refined Grains	10	8.3	5.1**	83.5	51.2**
Sodium	10	3.0	2.5 ^	30.5	25.5 ^
Empty Calories	20	18.8	14.5***	94.2	72.4***
Total Score	100	78.5	63.3***	78.5	63.3***
Number of Students		308	362	308	362

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lunch intakes for both NSLP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at lunch. For NSLP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable lunch, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

HEI scores are based on lunch intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table J.5. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants: All Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.5	4.2	89.6	84.8
Whole Fruit	5	5.0	5.0	100.0	100.0
Total Vegetables	5	2.2	2.2	44.2	44.0
Greens and Beans	5	0.7	1.4	15.0	28.0
Whole Grains	10	5.8	4.1***	57.6	40.6***
Dairy	10	9.8	8.3***	98.4	82.8***
Total Protein Foods	5	4.9	4.9	97.5	98.6
Seafood and Plant Proteins	5	3.2	3.6	64.1	72.4
Fatty Acids	10	4.0	3.9	39.6	39.5
Moderation (higher score indicates lower consumption)					
Refined Grains	10	6.0	4.6***	59.5	46.3***
Sodium	10	4.7	4.5	46.7	44.5
Empty Calories	20	14.4	13.8	72.2	69.1
Total Score	100	65.2	60.6**	65.2	60.6**
Number of Students		1,254	911	1,254	911

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level or ** 0.01 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

Table J.6. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants: Elementary School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.8	4.4	95.1	88.2
Whole Fruit	5	5.0	5.0	100.0	99.6
Total Vegetables	5	2.3	2.2	46.0	44.8
Greens and Beans	5	0.8	1.7 ^	16.5	34.1 ^
Whole Grains	10	5.6	4.2	56.4	42.0
Dairy	10	9.9	8.4**	99.1	83.8**
Total Protein Foods	5	4.6	4.8	91.1	96.8
Seafood and Plant Proteins	5	3.2	3.9	64.9	77.2
Fatty Acids	10	4.0	3.6	39.7	36.0
Moderation (higher score indicates lower consumption)					
Refined Grains	10	5.9	4.0**	59.3	39.6**
Sodium	10	4.9	4.6	49.2	46.0
Empty Calories	20	14.1	14.0	70.3	70.0
Total Score	100	65.1	60.8	65.1	60.8
Number of Students		540	208	540	208

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the ** 0.01 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table J.7. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants: Middle School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.6	4.3	93.0	86.3
Whole Fruit	5	5.0	5.0	100.0	99.5
Total Vegetables	5	2.1	2.0	41.6	40.1
Greens and Beans	5	0.9 ^	0.8 ^	18.0 ^	16.0 ^
Whole Grains	10	6.3	4.9*	63.4	49.1*
Dairy	10	9.3	9.1	93.0	90.6
Total Protein Foods	5	5.0	4.8	99.2	95.8
Seafood and Plant Proteins	5	2.4	3.7*	48.2	73.0*
Fatty Acids	10	4.2	4.9	41.8	49.3
Moderation (higher score indicates lower consumption)					
Refined Grains	10	6.3	5.0*	63.2	50.2*
Sodium	10	5.1	3.7*	50.9	37.2*
Empty Calories	20	14.6	14.7	73.2	73.4
Total Score	100	65.9	62.9	65.9	62.9
Number of Students		406	308	406	308

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the * 0.05 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table J.8. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants: High School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	3.7	3.9	73.7	77.5
Whole Fruit	5	4.6	4.9	91.7	98.3
Total Vegetables	5	2.2	2.6	44.6	51.0
Greens and Beans	5	1.1	2.0*	21.7	39.2*
Whole Grains	10	5.6	3.8***	56.3	38.1***
Dairy	10	9.8	7.6***	98.2	75.8***
Total Protein Foods	5	5.0	5.0	99.8	100.0
Seafood and Plant Proteins	5	3.1	3.0	61.3	59.2
Fatty Acids	10	3.8	4.2	38.1	41.8
Moderation (higher score indicates lower consumption)					
Refined Grains	10	5.7	5.5	57.5	55.1
Sodium	10	3.8	3.9	38.5	39.1
Empty Calories	20	15.1	13.5	75.5	67.3
Total Score	100	63.6	59.7	63.6	59.7
Number of Students		308	395	308	395

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level or * 0.05 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

Table J.9. Mean Healthy Eating Index-2010 Scores for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level

HEI-2010 Component	Maximum Score	Students from Lower Income Households		Students from Higher Income Households		All Students	
		Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)							
Total Fruit	5	4.8	3.8*	4.0	4.7	4.5	4.2
Whole Fruit	5	5.0	4.7	5.0	5.0	5.0	5.0
Total Vegetables	5	2.3	2.2	2.1	2.1	2.2	2.2
Greens and Beans	5	0.9	1.0 ^	0.7 ^	1.8*	0.7	1.4
Whole Grains	10	5.7	3.8***	5.8	4.3***	5.8	4.0***
Dairy	10	9.9	8.2***	9.8	8.4**	9.9	8.3***
Total Protein Foods	5	4.8	4.9	4.9	4.9	4.9	4.9
Seafood and Plant Proteins	5	3.0	3.5	3.5	3.8	3.3	3.7
Fatty Acids	10	4.1	4.1	3.7	3.8	4.0	3.9
Moderation (higher score indicates lower consumption)							
Refined Grains	10	5.8	4.9	6.2	4.3***	6.0	4.6***
Sodium	10	4.5	4.9	4.9	4.1	4.7	4.5
Empty Calories	20	14.5	13.1*	14.4	14.4	14.5	13.8
Total Score	100	65.3	59.1**	65.0	61.4*	65.2	60.5**
Number of Students		757	247	475	644	1,232	891

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a lunch, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality. Mean component scores may not sum to the total score due to rounding.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table J.10. Mean Healthy Eating Index-2010 Scores, as a Percentage of Maximum Scores, for 24-Hour Intakes for NSLP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level

HEI-2010 Component	Maximum Score	Students from Lower Income Households		Students from Higher Income Households		All Students	
		Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)							
Total Fruit	5	95.9	75.7*	80.4	93.2	90.0	84.8
Whole Fruit	5	100.0	93.1	99.5	100.0	100.0	100.0
Total Vegetables	5	46.2	44.2	42.2	42.7	44.4	43.2
Greens and Beans	5	17.1	20.8 ^	13.1 ^	35.8*	14.6	27.4
Whole Grains	10	57.4	38.3***	58.0	42.5***	57.6	40.5***
Dairy	10	98.5	82.1***	97.7	83.7**	98.5	82.9***
Total Protein Foods	5	96.1	97.1	97.7	98.4	97.1	98.3
Seafood and Plant Proteins	5	59.6	69.4	71.0	75.3	65.2	73.5
Fatty Acids	10	41.2	41.1	37.3	37.7	39.5	39.3
Moderation (higher score indicates lower consumption)							
Refined Grains	10	57.9	49.4	62.1	42.9***	59.6	46.0***
Sodium	10	45.4	48.9	48.8	41.0	46.8	44.8
Empty Calories	20	72.5	65.7*	72.0	71.8	72.3	68.8
Total Score	100	65.3	59.1**	65.0	61.4*	65.2	60.5**
Number of Students		757	247	475	644	1,232	891

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a lunch, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

APPENDIX K

CHAPTER 10 SUPPLEMENTAL TABLES

Detailed usual intake tables for dark green vegetables, starchy vegetables, and legumes are not included in this appendix. Usual intake distributions for these vegetable subgroups could not be reliably estimated because so few students consumed these foods.

This page has been left blank for double-sided copying.

TABLES

K.1	Foods Most Commonly Consumed at Breakfast by SBP Participants and Matched Comparison Group of Nonparticipants Who Obtained More Than Half of Their Breakfast Foods From Home	K.5
K.2	Mean Amounts of USDA Food Pattern Food Groups Consumed over 24 Hours by SBP Participants and Matched Comparison Group of Nonparticipants	K.7
K.3	Mean Proportion of 24-Hour Intakes of USDA Food Pattern Food Groups Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants	K.8
K.4	Usual Daily Intakes of USDA Food Pattern Food Groups: Mean Proportion of Daily Recommended Amounts of USDA Food Pattern Food Groups Consumed by SBP Participants and Matched Comparison Group of Nonparticipants	K.9
K.5	Usual Daily Vegetables Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.10
K.6	Usual Daily Red and Orange Vegetables Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.13
K.7	Usual Daily Other Vegetables Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.16
K.8	Usual Daily Fruit Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.19
K.9	Usual Daily Grains Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.22
K.10	Usual Daily Whole Grains Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.25
K.11	Usual Daily Dairy Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.28
K.12	Usual Daily Protein Foods Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.31
K.13	Usual Daily Oils Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.34
K.14	Usual Daily Empty Calories Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	K.37
K.15	Mean Proportion of 24-Hour Intakes of USDA Food Pattern Food Groups Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level	K.40
K.16	Usual Daily Intakes of USDA Food Pattern Food Groups: Mean Proportion of Daily Recommended Amounts of USDA Food Pattern Food Groups Consumed by SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level	K.42

This page has been left blank for double-sided copying.

Table K.1. Foods Most Commonly Consumed at Breakfast by SBP Participants and Matched Comparison Group of Nonparticipants Who Obtained More Than Half of Their Breakfast Foods From Home

	Percent of Students Consuming Food at Breakfast	
	Participants	Nonparticipants Who Obtained More Than Half of Breakfast Foods from Home
Milk	59.0	56.5
Low-fat (1%)	29.0	22.1
Unflavored	28.5	22.0
Fat-free	22.7	5.3
Flavored	17.4	<3
Unflavored	5.9	<3
2%	5.6	13.8
Unflavored	5.3	13.6
Whole	4.4	14.3
Unflavored	3.8 ^	14.1
Vegetables	<3	2.5
Starchy vegetables	<3	<3
French fries and similar potato products	<3	<3
Fruits and 100% Fruit Juices	60.0	30.7
100% juice	47.5	18.4
Orange juice	20.2	14.0
Apple juice	22.3	2.3
Grape juice	3.5 ^	<3
Fresh fruit	17.6	14.9
Apples	7.0	4.4
Bananas	4.3	6.2
Oranges	4.3	3.1
Fruit mixtures (includes citrus)	<3	<3
Canned fruit	4.8	<3
Applesauce	<3	<3
Combination Entrées	22.4	9.8
Breakfast sandwiches	6.8	2.7
Pizza	6.6	<3
Sandwiches with breaded meat or poultry	<3	<3
Breakfast burrito	<3	<3
Sandwiches with plain meat or poultry	<3	<3
Sausage with pancake, corn dog, and similar products	<3	<3
Grains/Breads	70.0	80.8
Cold cereal	30.9	42.8
Sweetened	26.4	33.3
Unsweetened	4.8	9.5
Sweet rolls, toaster pastries, donuts, fruit turnovers, Danishes	11.0	10.2
Pancakes, waffles, and French toast	11.6	8.7
Granola bars and breakfast bars	6.1	4.9
Breads, rolls, bagels, and other plain breads	6.3	11.7
Muffins and sweet/quick breads	5.4	<3
Hot cereal	<3	3.8
Crackers, croutons, and pretzels	6.3	5.7
Buttered toast	<3	<3

	Percent of Students Consuming Food at Breakfast	
	Participants	Nonparticipants Who Obtained More Than Half of Breakfast Foods from Home
Meats/Meat Alternates	14.1	16.9
Eggs	4.8	6.9
Yogurt	3.7 ^	2.5
Desserts, Snacks, and Other Beverages	45.6	48.8
Beverages other than milk and 100% juice	40.5	45.7
Water ^a	32.0	30.8
Coffee and tea	3.9 ^	7.3
Juice drinks (not 100% juice)	<3	8.1
Snack chips and popcorn	3.2 ^	2.4
Candy	3.7 ^	3.1
Cookies, cakes, and brownies	3.5 ^	3.9
Dairy-based desserts ^b	<3	<3
Number of Students	511	1,176

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school. Sample sizes were too small to produce reliable estimates for matched nonparticipants who obtained more than half of their breakfast foods outside of school (n=59), at school (n=61), or from other sources (n=64). Table is limited to food groups consumed by at least 5 percent of participants or matched nonparticipants. Differences between participants and matched nonparticipants were not tested for statistical significance.

^aIncludes bottled and tap water.

^bIncludes pudding, ice cream, ice cream cones and bars, and frozen yogurt.

SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table K.2. Mean Amounts of USDA Food Pattern Food Groups Consumed over 24 Hours by SBP Participants and Matched Comparison Group of Nonparticipants

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Vegetables (cups)	1.1	1.0	1.0	0.9	1.1	1.1	1.1	1.0
Dark green (cups)	0.1	0.1	0.1 ^	0.0	0.1 ^	0.1	0.1	0.1
Red and orange (cups)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Legumes (cups)	0.1	0.1	0.1 ^	0.1	0.1	0.1 ^	0.1	0.1
Starchy (cups)	0.3	0.3	0.4	0.3	0.3	0.3	0.4	0.3
Other (cups)	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3
Fruits (cups) ^a	1.7	1.4	1.5	1.4	1.5	1.2	1.6	1.3*
Grains (oz)	7.4	7.0	7.6	6.4*	8.1	7.7	7.6	7.1*
Whole grains (oz)	1.9	1.4**	1.9	1.4	1.8	1.4	1.8	1.4***
Dairy (cups)	2.5	2.5	2.4	2.1*	2.7	2.2	2.6	2.3*
Protein Foods (oz)	3.9	4.0	5.0	4.3	5.8	5.8	4.6	4.7
Oils (tsp)	4.8	4.1*	4.9	4.7	5.6	5.7	5.0	4.6
Empty Calories (kcal)	544	526	589	465**	617	601	569	542
Calories from solid fats (kcal)	280	273	296	238**	311	305	290	279
Calories from added sugars (kcal)	264	253	294	226*	306	296	279	263
Number of Students	228	520	144	570	139	564	511	1,654

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning SBP breakfasts, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

^aIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

cups = cup equivalents; oz = ounce equivalent; SBP = School Breakfast Program; tsp = teaspoon.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.3. Mean Proportion of 24-Hour Intakes of USDA Food Pattern Food Groups Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Vegetables	<3	<3	<3	<3	6.1 ^	<3	<3	2.6
Dark green	<3	<3	<3	<3	<3	<3	<3	<3
Red and orange	<3	<3	<3	<3	11.3 ^	3.1 ^	4.8	2.0
Legumes	<3	<3	<3	<3	<3	<3	<3	<3
Starchy	<3	<3	<3	<3	<3	<3	<3	1.9
Other	<3	<3	<3	3.3 ^	<3	<3	<3	1.8
Fruits ^a	31.3	17.7***	29.4	20.0*	38.9	23.1**	32.7	19.7***
Grains	20.2	21.1	22.3	18.0	23.9	21.5	21.4	20.8
Whole grains	28.2	28.1	37.7	21.4**	40.5	21.7*	32.7	25.2
Dairy	27.7	25.7	27.6	32.7	39.0	31.4	30.3	27.5
Protein Foods	6.7 ^	7.3	9.6 ^	8.0	10.3 ^	8.7	8.0	7.8
Oils	13.1	13.5	12.4 ^	8.3	13.8 ^	14.6	13.1	13.1
Empty Calories	20.3	23.5	22.7	24.3	24.7	25.1	21.7	23.9
Calories from solid fats	15.9	23.0**	21.9	22.9	23.6	24.0	18.8	23.1*
Calories from added sugars	27.2	25.6	26.8	26.6	26.8	27.8	27.0	25.9
Number of Students	228	466	144	459	139	435	511	1,360

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school. The USDA Food Pattern food groups are largely consistent with the meal components used in planning SBP breakfasts, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

^aIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table K.4. Usual Daily Intakes of USDA Food Pattern Food Groups: Mean Proportion of Daily Recommended Amounts of USDA Food Pattern Food Groups Consumed by SBP Participants and Matched Comparison Group of Nonparticipants

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Vegetables ^a	41.3	40.7	40.2	35.1	36.5	33.0	39.9	39.5
Red and orange	38.7	32.5	31.9	33.1	34.8	34.5	36.6	31.6
Other	43.3	40.6	49.1	38.1	51.3	38.0	44.3	40.3
Fruits ^b	106.3	95.9	73.5	68.1	71.0	56.5	91.4	80.7
Grains	120.2	120.7	126.9	109.9*	99.2	94.7	116.0	112.5
Whole grains	59.2	NR	NR	NR	NR	34.3	53.8	43.4**
Dairy	82.5	81.5	81.6	70.4*	86.3	75.0	81.3	77.0
Protein Foods	74.5	80.4	83.1	77.5	75.4	86.3	76.4	83.5
Oils	95.8	88.0	79.5	78.2	77.5	80.4	88.1	84.9
Empty Calories	325.7	332.3	230.0	180.3**	187.3	180.4	275.7	272.7
Number of Students	228	520	144	570	139	564	511	1,654

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

USDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010). The USDA Food Patterns provide weekly recommendations for vegetable subgroups. For this analysis, weekly recommendations were divided by 7 (days per week) to reflect daily recommendations.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning SBP breakfasts, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

Actual sample sizes for some food groups and subgroups of students differ from the reported total sample sizes because outliers had to be omitted, on a food group by student subgroup basis, in order to estimate usual intake distributions.

^aUsual intake distributions for dark green vegetables, starchy vegetables, and legumes could not be reliably estimated because so few students consumed these foods. Intakes of dark green vegetables, starchy vegetables, and legumes are, however, included in the vegetables group. All legumes were counted as vegetables in this analysis.

^bIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the ** 0.01 level or * 0.05 level.

NCI = National Cancer Institute; NR = Not reported because usual intake distribution could not be reliably estimated; SBP = School Breakfast Program.

Table K.5. Usual Daily Vegetables Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Vegetables Intakes (cups)										Recommended Daily Amount of Vegetables (cups), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^b											—	—	—
SBP participants	119	1.1	0.09	0.5 ^	0.6 ^	0.8	1.0	1.3	1.6 ^	1.8 ^	—	—	—
SBP nonparticipants	240	1.0	0.06	0.5 ^	0.6	0.8	1.0	1.2	1.5	1.7 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	220	1.0	0.08	0.3 ^	0.4	0.6	0.9	1.2	1.6	1.9 ^	—	—	—
SBP nonparticipants	718	1.0	0.07	0.5	0.6	0.8	1.0	1.2	1.5	1.6	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	129	1.0	0.12	0.4 ^	0.5 ^	0.7	0.9	1.2	1.5 ^	1.7 ^	—	—	—
SBP nonparticipants	365	1.0	0.09	0.5 ^	0.6	0.8	1.0	1.3	1.6	1.7 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	1.0	0.12	0.3 ^	0.4 ^	0.6	0.9	1.3	1.8 ^	2.2 ^	—	—	—
SBP nonparticipants	354	1.0	0.09	0.5 ^	0.6	0.8	1.0	1.2	1.4	1.6 ^	—	—	—
14 to 18 Years ^c											—	—	—
SBP participants	172	1.1	0.11	0.2 ^	0.4 ^	0.6	1.0	1.5	2.1 ^	2.5 ^	—	—	—
SBP nonparticipants	694	1.1	0.05	0.5	0.6	0.8	1.0	1.3	1.6	1.7	—	—	—
14 to 18 Years, Male ^c											—	—	—
SBP participants	105	1.2	0.17	0.2 ^	0.3 ^	0.6	1.0	1.6	2.4 ^	3.0 ^	—	—	—
SBP nonparticipants	353	1.1	0.08	0.5 ^	0.6	0.8	1.0	1.3	1.5	1.7 ^	—	—	—
14 to 18 Years, Female ^c											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	341	1.1	0.06	0.3 ^	0.5	0.7	1.0	1.4	1.8	2.0 ^	—	—	—
All Students											—	—	—
SBP participants	511	1.0	0.05	0.3	0.4	0.6	0.9	1.3	1.8	2.1	—	—	—
SBP nonparticipants	1,653	1.0	0.05	0.5	0.6	0.8	1.0	1.2	1.5	1.7	—	—	—
All Students, Male											—	—	—
SBP participants	293	1.1	0.07	0.4 ^	0.5	0.7	1.0	1.4	1.8	2.1 ^	—	—	—
SBP nonparticipants	831	1.0	0.06	0.5	0.6	0.8	1.0	1.2	1.5	1.6	—	—	—
All Students, Female											—	—	—
SBP participants	218	1.0	0.07	0.3 ^	0.4	0.6	0.9	1.3	1.7	2.1 ^	—	—	—
SBP nonparticipants	822	1.0	0.07	0.6	0.6	0.8	1.0	1.2	1.5	1.6	—	—	—

	Vegetables Intakes (cups)										Recommended Daily Amount of Vegetables (cups), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											2.5	—	—
SBP participants	228	1.0	0.07	0.4 ^	0.5	0.7	1.0	1.3	1.7	1.9 ^	2.5	—	—
SBP nonparticipants	517	1.0	0.05	0.4	0.5	0.7	1.0	1.3	1.6	1.8	2.5	—	—
Elementary School Students, Male											2.5	—	—
SBP participants	118	1.1	0.12	0.5 ^	0.6 ^	0.7	1.0	1.3	1.7 ^	1.9 ^	2.5	—	—
SBP nonparticipants	256	1.0	0.06	0.4 ^	0.5	0.7	0.9	1.2	1.6	1.8 ^	2.5	—	—
Elementary School Students, Female											2.5	—	—
SBP participants	110	1.0	0.12	0.3 ^	0.4 ^	0.6	0.9	1.3	1.7 ^	2.0 ^	2.5	—	—
SBP nonparticipants	261	1.1	0.05	0.5 ^	0.5	0.7	1.0	1.3	1.7	1.9 ^	2.5	—	—
Middle School Students											—	2.5	—
SBP participants	144	1.0	0.09	0.3 ^	0.4 ^	0.6	0.9	1.3	1.7 ^	1.9 ^	—	2.5	—
SBP nonparticipants	570	0.9	0.05	0.3	0.3	0.5	0.8	1.1	1.5	1.8	—	2.5	—
Middle School Students, Male											—	2.5	—
SBP participants	92	1.0	0.11	0.4 ^	0.5 ^	0.7	0.9	1.2	1.5 ^	1.7 ^	—	2.5	—
SBP nonparticipants	291	0.9	0.07	0.3 ^	0.4	0.6	0.8	1.2	1.6	1.8 ^	—	2.5	—
Middle School Students, Female											—	2.5	—
SBP participants	52	--	--	--	--	--	--	--	--	--	—	2.5	—
SBP nonparticipants	279	0.8	0.07	0.2 ^	0.3	0.5	0.7	1.1	1.5	1.7 ^	—	2.5	—
High School Students											—	—	3.0
SBP participants	139	1.1	0.10	0.3 ^	0.4 ^	0.6	1.0	1.4	2.0 ^	2.4 ^	—	—	3.0
SBP nonparticipants	554	1.0	0.05	0.4	0.5	0.7	0.9	1.2	1.5	1.7	—	—	3.0
High School Students, Male											—	—	3.0
SBP participants	83	1.2	0.16	0.2 ^	0.3 ^	0.5	0.9	1.5	2.3 ^	2.8 ^	—	—	3.0
SBP nonparticipants	276	0.9	0.06	0.4 ^	0.5	0.6	0.9	1.2	1.5	1.7 ^	—	—	3.0
High School Students, Female											—	—	3.0
SBP participants	56	--	--	--	--	--	--	--	--	--	—	—	3.0
SBP nonparticipants	281	1.0	0.07	0.4 ^	0.5	0.7	1.0	1.3	1.6	1.9 ^	—	—	3.0

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

cups = cup equivalents; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.6. Usual Daily Red and Orange Vegetables Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Red and Orange Vegetables Intakes (cups)										Recommended Daily Amount of Red and Orange Vegetables (cups), by Calorie Level ^{a,b}		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^c											—	—	—
SBP participants	119	0.3	0.05	0.1 ^	0.1 ^	0.2	0.3	0.4	0.6 ^	0.7 ^	—	—	—
SBP nonparticipants	239	0.3	0.03	0.1 ^	0.1	0.2	0.2	0.4	0.5	0.5 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	220	0.3	0.03	0.1 ^	0.1	0.1	0.2	0.3	0.5	0.6 ^	—	—	—
SBP nonparticipants	719	0.2	0.02	0.1	0.1	0.1	0.2	0.3	0.4	0.5	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	129	0.2	0.03	0.0 ^	0.1 ^	0.1	0.2	0.3	0.4 ^	0.6 ^	—	—	—
SBP nonparticipants	365	0.3	0.02	0.0 ^	0.0	0.1	0.2	0.4	0.5	0.6 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	0.3	0.04	0.1 ^	0.1 ^	0.2	0.3	0.4	0.6 ^	0.7 ^	—	—	—
SBP nonparticipants	354	0.2	0.02	0.1 ^	0.1	0.2	0.2	0.3	0.4	0.4 ^	—	—	—
14 to 18 Years ^d											—	—	—
SBP participants	172	0.3	0.03	0.0 ^	0.1 ^	0.1	0.2	0.4	0.6 ^	0.8 ^	—	—	—
SBP nonparticipants	695	0.3	0.02	0.1	0.1	0.2	0.3	0.4	0.5	0.6	—	—	—
14 to 18 Years, Male ^d											—	—	—
SBP participants	105	0.3	0.04	0.0 ^	0.1 ^	0.1	0.2	0.4	0.7 ^	1.0 ^	—	—	—
SBP nonparticipants	354	0.3	0.03	0.1 ^	0.1	0.2	0.3	0.4	0.5	0.6 ^	—	—	—
14 to 18 Years, Female ^d											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	341	0.3	0.02	0.1 ^	0.1	0.2	0.2	0.3	0.4	0.5 ^	—	—	—
All Students											—	—	—
SBP participants	511	0.3	0.02	0.1	0.1	0.1	0.2	0.4	0.6	0.7	—	—	—
SBP nonparticipants	1,632	0.3	0.02	0.1	0.1	0.2	0.2	0.3	0.4	0.5	—	—	—
All Students, Male											—	—	—
SBP participants	293	0.3	0.03	0.1 ^	0.1	0.1	0.2	0.4	0.6	0.7 ^	—	—	—
SBP nonparticipants	816	0.3	0.02	0.1	0.1	0.2	0.2	0.3	0.5	0.5	—	—	—
All Students, Female											—	—	—
SBP participants	218	0.3	0.02	0.1 ^	0.1	0.2	0.3	0.4	0.6	0.7 ^	—	—	—
SBP nonparticipants	816	0.2	0.02	0.1	0.1	0.1	0.2	0.3	0.4	0.5	—	—	—

	Red and Orange Vegetables Intakes (cups)										Recommended Daily Amount of Red and Orange Vegetables (cups), by Calorie Level ^{a,b}		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											0.79	—	—
SBP participants	228	0.3	0.03	0.1 ^	0.1	0.2	0.3	0.4	0.6	0.7 ^	0.79	—	—
SBP nonparticipants	517	0.3	0.03	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.79	—	—
Elementary School Students, Male											0.79	—	—
SBP participants	118	0.3	0.05	0.1 ^	0.1 ^	0.2	0.3	0.4	0.6 ^	0.7 ^	0.79	—	—
SBP nonparticipants	255	0.3	0.03	0.1 ^	0.1	0.2	0.2	0.4	0.5	0.6 ^	0.79	—	—
Elementary School Students, Female											0.79	—	—
SBP participants	110	0.3	0.04	0.1 ^	0.1 ^	0.2	0.3	0.4	0.6 ^	0.7 ^	0.79	—	—
SBP nonparticipants	262	0.2	0.03	0.1 ^	0.1	0.1	0.2	0.3	0.4	0.5 ^	0.79	—	—
Middle School Students											—	0.79	—
SBP participants	144	0.3	0.03	0.1 ^	0.1 ^	0.2	0.2	0.3	0.4 ^	0.5 ^	—	0.79	—
SBP nonparticipants	570	0.3	0.02	0.1	0.1	0.2	0.2	0.3	0.5	0.5	—	0.79	—
Middle School Students, Male											—	0.79	—
SBP participants	92	0.2	0.03	0.0 ^	0.1 ^	0.1	0.2	0.3	0.5 ^	0.6 ^	—	0.79	—
SBP nonparticipants	291	0.3	0.03	0.1 ^	0.1	0.2	0.2	0.4	0.5	0.6 ^	—	0.79	—
Middle School Students, Female											—	0.79	—
SBP participants	52	--	--	--	--	--	--	--	--	--	—	0.79	—
SBP nonparticipants	277	0.2	0.02	0.0 ^	0.1	0.1	0.2	0.3	0.4	0.5 ^	—	0.79	—
High School Students											—	—	0.86
SBP participants	139	0.3	0.04	0.0 ^	0.0 ^	0.1	0.2	0.4	0.7 ^	0.9 ^	—	—	0.86
SBP nonparticipants	564	0.3	0.02	0.1	0.1	0.2	0.3	0.4	0.5	0.6	—	—	0.86
High School Students, Male											—	—	0.86
SBP participants	83	0.3	0.05	0.0 ^	0.0 ^	0.1	0.2	0.4	0.7 ^	0.9 ^	—	—	0.86
SBP nonparticipants	275	0.3	0.02	0.1 ^	0.1	0.2	0.2	0.4	0.5	0.6 ^	—	—	0.86
High School Students, Female											—	—	0.86
SBP participants	56	--	--	--	--	--	--	--	--	--	—	—	0.86
SBP nonparticipants	281	0.3	0.03	0.1 ^	0.1	0.2	0.2	0.3	0.5	0.5 ^	—	—	0.86

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe USDA Food Patterns provide weekly recommendations for vegetable subgroups. For this analysis, weekly recommendations were divided by 7 (days per week) to reflect daily recommendations.

^cThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^dIncludes 13 students (9 males and 4 females) that were 19 years old.

cups = cup equivalents; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.7. Usual Daily Other Vegetables Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Other Vegetables Intakes (cups)										Recommended Daily Amount of Other Vegetables (cups), by Calorie Level ^{a,b}		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^c											—	—	—
SBP participants	119	0.2	0.03	0.1 ^	0.1 ^	0.1	0.2	0.3	0.4 ^	0.6 ^	—	—	—
SBP nonparticipants	238	0.2	0.01	0.1 ^	0.1	0.1	0.2	0.3	0.4	0.4 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	220	0.2	0.03	0.1 ^	0.1	0.1	0.2	0.3	0.4	0.4 ^	—	—	—
SBP nonparticipants	719	0.3	0.03	0.0	0.1	0.1	0.2	0.4	0.5	0.6	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	129	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	—	—
SBP nonparticipants	365	0.3	0.04	0.0 ^	0.1	0.1	0.2	0.4	0.6	0.7 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	—	—
SBP nonparticipants	351	0.2	0.02	0.1 ^	0.1	0.2	0.2	0.3	0.4	0.4 ^	—	—	—
14 to 18 Years ^d											—	—	—
SBP participants	172	0.4	0.05	0.1 ^	0.2 ^	0.2	0.3	0.5	0.6 ^	0.7 ^	—	—	—
SBP nonparticipants	688	0.3	0.03	0.1	0.1	0.2	0.3	0.4	0.5	0.6	—	—	—
14 to 18 Years, Male ^d											—	—	—
SBP participants	105	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	—	—
SBP nonparticipants	352	0.3	0.03	0.1 ^	0.1	0.2	0.3	0.4	0.5	0.5 ^	—	—	—
14 to 18 Years, Female ^d											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	336	0.3	0.04	0.1 ^	0.1	0.2	0.3	0.4	0.5	0.6 ^	—	—	—
All Students											—	—	—
SBP participants	511	0.3	0.02	0.1	0.1	0.1	0.2	0.3	0.5	0.6	—	—	—
SBP nonparticipants	1,640	0.2	0.01	0.1	0.1	0.1	0.2	0.3	0.4	0.5	—	—	—
All Students, Male											—	—	—
SBP participants	293	0.3	0.03	0.1 ^	0.1	0.1	0.2	0.3	0.5	0.6 ^	—	—	—
SBP nonparticipants	826	0.2	0.02	0.1	0.1	0.1	0.2	0.3	0.4	0.5	—	—	—
All Students, Female											—	—	—
SBP participants	218	0.3	0.04	0.1 ^	0.1	0.1	0.2	0.4	0.5	0.6 ^	—	—	—
SBP nonparticipants	814	0.3	0.02	0.1	0.1	0.2	0.2	0.3	0.5	0.5	—	—	—

	Other Vegetables Intakes (cups)										Recommended Daily Amount of Other Vegetables (cups), by Calorie Level ^{a,b}		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											0.57	–	–
SBP participants	228	0.2	0.03	0.1 ^	0.1	0.1	0.2	0.3	0.5	0.6 ^	0.57	–	–
SBP nonparticipants	516	0.2	0.02	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.57	–	–
Elementary School Students, Male											0.57	–	–
SBP participants	118	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.57	–	–
SBP nonparticipants	255	0.2	0.02	0.1 ^	0.1	0.1	0.2	0.3	0.3	0.4 ^	0.57	–	–
Elementary School Students, Female											0.57	–	–
SBP participants	110	0.2	0.05	0.1 ^	0.1 ^	0.1	0.2	0.3	0.4 ^	0.5 ^	0.57	–	–
SBP nonparticipants	261	0.3	0.02	0.1 ^	0.1	0.2	0.3	0.3	0.4	0.4 ^	0.57	–	–
Middle School Students											–	0.57	–
SBP participants	144	0.3	0.05	0.1 ^	0.1 ^	0.2	0.3	0.4	0.5 ^	0.6 ^	–	0.57	–
SBP nonparticipants	566	0.2	0.02	0.1	0.1	0.1	0.2	0.3	0.4	0.4	–	0.57	–
Middle School Students, Male											–	0.57	–
SBP participants	92	NR	NR	NR	NR	NR	NR	NR	NR	NR	–	0.57	–
SBP nonparticipants	290	0.2	0.02	0.1 ^	0.1	0.1	0.2	0.3	0.3	0.4 ^	–	0.57	–
Middle School Students, Female											–	0.57	–
SBP participants	51	NR	NR	NR	NR	NR	NR	NR	NR	NR	–	0.57	–
SBP nonparticipants	279	0.2	0.02	0.0 ^	0.0	0.0	0.1	0.2	0.4	0.5 ^	–	0.57	–
High School Students											–	–	0.71
SBP participants	139	0.4	0.04	0.1 ^	0.2 ^	0.2	0.3	0.5	0.6 ^	0.7 ^	–	–	0.71
SBP nonparticipants	558	0.3	0.03	0.1	0.1	0.2	0.2	0.3	0.4	0.5	–	–	0.71
High School Students, Male											–	–	0.71
SBP participants	82	NR	NR	NR	NR	NR	NR	NR	NR	NR	–	–	0.71
SBP nonparticipants	281	0.2	0.03	0.1 ^	0.1	0.2	0.2	0.3	0.4	0.5 ^	–	–	0.71
High School Students, Female											–	–	0.71
SBP participants	56	NR	NR	NR	NR	NR	NR	NR	NR	NR	–	–	0.71
SBP nonparticipants	277	0.3	0.04	0.1 ^	0.1	0.2	0.3	0.4	0.5	0.5 ^	–	–	0.71

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe USDA Food Patterns provide weekly recommendations for vegetable subgroups. For this analysis, weekly recommendations were divided by 7 (days per week) to reflect daily recommendations.

^cThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^dIncludes 13 students (9 males and 4 females) that were 19 years old.

cups = cup equivalents; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NR = Not reported because usual intake distribution could not be reliably estimated; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.8. Usual Daily Fruit Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Fruit Intakes (cups)										Recommended Daily Amount of Fruit (cups), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^b											—	—	—
SBP participants	119	1.7	0.12	0.9 ^	1.0 ^	1.3	1.7	2.1	2.5 ^	2.7 ^	—	—	—
SBP nonparticipants	240	1.4	0.11	0.3 ^	0.4	0.7	1.2	1.8	2.5	3.0 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	220	1.5	0.08	0.4 ^	0.5	0.8	1.3	1.9	2.6	3.1 ^	—	—	—
SBP nonparticipants	719	1.4	0.10	0.5	0.7	0.9	1.3	1.8	2.3	2.6	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	129	1.5	0.13	0.7 ^	0.9 ^	1.1	1.4	1.8	2.2 ^	2.4 ^	—	—	—
SBP nonparticipants	365	1.5	0.11	0.4 ^	0.5	0.9	1.3	2.0	2.7	3.1 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	1.5	0.14	0.2 ^	0.3 ^	0.6	1.2	1.9	3.0 ^	3.7 ^	—	—	—
SBP nonparticipants	354	1.3	0.17	0.1 ^	0.4	0.8	1.2	1.7	2.3	2.7 ^	—	—	—
14 to 18 Years ^c											—	—	—
SBP participants	172	1.4	0.15	0.8 ^	0.9 ^	1.1	1.4	1.7	2.1 ^	2.3 ^	—	—	—
SBP nonparticipants	695	1.2	0.10	0.3	0.4	0.7	1.1	1.6	2.2	2.7	—	—	—
14 to 18 Years, Male ^c											—	—	—
SBP participants	105	1.5	0.15	0.8 ^	1.0 ^	1.2	1.5	1.8	2.2 ^	2.4 ^	—	—	—
SBP nonparticipants	354	1.4	0.16	0.2 ^	0.4	0.7	1.2	1.9	2.8	3.4 ^	—	—	—
14 to 18 Years, Female ^c											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	341	0.9	0.09	0.4 ^	0.5	0.6	0.9	1.1	1.5	1.7 ^	—	—	—
All Students											—	—	—
SBP participants	511	1.5	0.07	0.8	0.9	1.1	1.5	1.8	2.2	2.5	—	—	—
SBP nonparticipants	1,654	1.3	0.06	0.4	0.5	0.8	1.2	1.7	2.3	2.8	—	—	—
All Students, Male											—	—	—
SBP participants	293	1.6	0.09	0.8 ^	0.9	1.2	1.5	1.9	2.3	2.6 ^	—	—	—
SBP nonparticipants	832	1.4	0.08	0.4	0.5	0.8	1.2	1.8	2.5	3.0	—	—	—
All Students, Female											—	—	—
SBP participants	218	1.5	0.09	0.6 ^	0.7	1.0	1.4	1.8	2.3	2.7 ^	—	—	—
SBP nonparticipants	822	1.3	0.09	0.4	0.5	0.8	1.2	1.6	2.1	2.4	—	—	—

	Fruit Intakes (cups)										Recommended Daily Amount of Fruit (cups), by Calorie Level ^a		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											1.5	—	—
SBP participants	228	1.6	0.09	0.7 ^	0.9	1.1	1.5	2.0	2.4	2.7 ^	1.5	—	—
SBP nonparticipants	520	1.4	0.12	0.4	0.5	0.8	1.3	1.9	2.5	3.0	1.5	—	—
Elementary School Students, Male											1.5	—	—
SBP participants	118	1.6	0.15	0.2 ^	0.8 ^	1.2	1.6	2.0	2.5 ^	2.8 ^	1.5	—	—
SBP nonparticipants	258	1.4	0.12	0.3 ^	0.4	0.7	1.2	1.8	2.6	3.1 ^	1.5	—	—
Elementary School Students, Female											1.5	—	—
SBP participants	110	1.6	0.12	0.7 ^	0.8 ^	1.1	1.5	2.0	2.5 ^	2.8 ^	1.5	—	—
SBP nonparticipants	262	1.5	0.19	0.6 ^	0.7	1.0	1.4	1.9	2.5	2.9 ^	1.5	—	—
Middle School Students											—	2.0	—
SBP participants	144	1.5	0.13	0.6 ^	0.7 ^	1.0	1.4	1.8	2.3 ^	2.6 ^	—	2.0	—
SBP nonparticipants	570	1.4	0.10	0.3	0.4	0.8	1.2	1.8	2.5	2.9	—	2.0	—
Middle School Students, Male											—	2.0	—
SBP participants	92	1.6	0.14	0.8 ^	1.0 ^	1.2	1.5	1.9	2.3 ^	2.6 ^	—	2.0	—
SBP nonparticipants	291	1.6	0.14	0.8 ^	0.9	1.2	1.5	1.9	2.3	2.6 ^	—	2.0	—
Middle School Students, Female											—	2.0	—
SBP participants	52	--	--	--	--	--	--	--	--	--	—	2.0	—
SBP nonparticipants	279	1.1	0.12	0.0 ^	0.0	0.3	0.8	1.5	2.4	3.0 ^	—	2.0	—
High School Students											—	—	2.0
SBP participants	139	1.4	0.14	0.7 ^	0.8 ^	1.0	1.3	1.7	2.0 ^	2.3 ^	—	—	2.0
SBP nonparticipants	564	1.1	0.10	0.2	0.3	0.6	1.0	1.5	2.1	2.6	—	—	2.0
High School Students, Male											—	—	2.0
SBP participants	83	1.5	0.14	0.8 ^	0.9 ^	1.1	1.4	1.8	2.1 ^	2.4 ^	—	—	2.0
SBP nonparticipants	283	1.3	0.16	0.2 ^	0.3	0.5	1.0	1.7	2.6	3.3 ^	—	—	2.0
High School Students, Female											—	—	2.0
SBP participants	56	--	--	--	--	--	--	--	--	--	—	—	2.0
SBP nonparticipants	281	0.9	0.08	0.5 ^	0.5	0.7	0.9	1.1	1.3	1.5 ^	—	—	2.0

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

Usual fruit intakes include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

cups = cup equivalents; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

– Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.9. Usual Daily Grains Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Grains Intakes (oz)										Recommended Daily Amount of Grains (oz), by Calorie Level ^a		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^b											—	—	—
SBP participants	119	6.9	0.22	4.8 ^	5.2 ^	6.0	6.8	7.8	8.8 ^	9.4 ^	—	—	—
SBP nonparticipants	240	7.1	0.22	4.3 ^	4.8	5.7	7.0	8.4	9.7	10.6 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	220	7.5	0.27	5.3 ^	5.7	6.5	7.4	8.5	9.5	10.1 ^	—	—	—
SBP nonparticipants	719	7.4	0.24	4.5	5.0	6.0	7.2	8.6	9.9	10.8	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	129	7.9	0.45	5.6 ^	6.1 ^	6.8	7.8	8.8	9.7 ^	10.3 ^	—	—	—
SBP nonparticipants	365	7.7	0.25	5.5 ^	5.9	6.6	7.6	8.6	9.6	10.2 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	7.2	0.30	4.4 ^	4.9 ^	5.8	6.9	8.4	9.9 ^	10.9 ^	—	—	—
SBP nonparticipants	354	7.0	0.45	3.6 ^	4.2	5.3	6.7	8.4	10.1	11.3 ^	—	—	—
14 to 18 Years ^c											—	—	—
SBP participants	172	7.9	0.35	4.3 ^	5.0 ^	6.1	7.7	9.4	11.3 ^	12.6 ^	—	—	—
SBP nonparticipants	695	7.3	0.25	3.4	4.0	5.3	7.0	9.0	11.1	12.5	—	—	—
14 to 18 Years, Male ^c											—	—	—
SBP participants	105	8.8	0.43	5.7 ^	6.2 ^	7.3	8.6	10.1	11.7 ^	12.6 ^	—	—	—
SBP nonparticipants	354	8.0	0.34	4.0 ^	4.7	6.0	7.7	9.7	11.9	13.3 ^	—	—	—
14 to 18 Years, Female ^c											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	341	6.4	0.32	2.8 ^	3.4	4.6	6.1	7.9	9.7	10.9 ^	—	—	—
All Students											—	—	—
SBP participants	511	7.4	0.16	5.2	5.6	6.4	7.3	8.3	9.3	9.9	—	—	—
SBP nonparticipants	1,654	7.2	0.11	4.3	4.8	5.8	7.0	8.4	9.8	10.7	—	—	—
All Students, Male											—	—	—
SBP participants	293	7.7	0.23	5.6 ^	6.0	6.7	7.7	8.7	9.6	10.2 ^	—	—	—
SBP nonparticipants	832	7.6	0.18	4.8	5.3	6.2	7.4	8.7	10.1	10.9	—	—	—
All Students, Female											—	—	—
SBP participants	218	7.0	0.20	4.4 ^	4.9	5.8	6.8	8.0	9.2	10.0 ^	—	—	—
SBP nonparticipants	822	6.8	0.15	3.8	4.3	5.3	6.6	8.0	9.4	10.4	—	—	—

	Grains Intakes (oz)										Recommended Daily Amount of Grains (oz), by Calorie Level ^a		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											6.0	—	—
SBP participants	228	7.2	0.19	5.1 ^	5.5	6.2	7.2	8.1	9.1	9.7 ^	6.0	—	—
SBP nonparticipants	520	7.2	0.18	4.5	5.0	6.0	7.1	8.4	9.6	10.5	6.0	—	—
Elementary School Students, Male											6.0	—	—
SBP participants	118	7.4	0.27	5.3 ^	5.7 ^	6.4	7.3	8.3	9.2 ^	9.7 ^	6.0	—	—
SBP nonparticipants	258	7.4	0.28	5.3 ^	5.8	6.5	7.4	8.3	9.3	9.9 ^	6.0	—	—
Elementary School Students, Female											6.0	—	—
SBP participants	110	7.0	0.24	4.4 ^	4.9 ^	5.8	6.8	8.0	9.2 ^	10.0 ^	6.0	—	—
SBP nonparticipants	262	7.1	0.20	4.0 ^	4.5	5.5	6.9	8.4	9.9	10.9 ^	6.0	—	—
Middle School Students											—	6.0	—
SBP participants	144	7.6	0.46	4.7 ^	5.2 ^	6.1	7.4	8.8	10.4 ^	11.4 ^	—	6.0	—
SBP nonparticipants	570	6.6	0.17	3.8	4.3	5.3	6.5	7.8	9.1	10.0	—	6.0	—
Middle School Students, Male											—	6.0	—
SBP participants	92	8.3	0.84	4.8 ^	5.4 ^	6.6	8.1	9.8	11.5 ^	12.7 ^	—	6.0	—
SBP nonparticipants	291	7.0	0.16	4.2 ^	4.8	5.7	6.9	8.2	9.5	10.3 ^	—	6.0	—
Middle School Students, Female											—	6.0	—
SBP participants	52	--	--	--	--	--	--	--	--	--	—	6.0	—
SBP nonparticipants	279	6.0	0.23	3.3 ^	3.8	4.7	5.9	7.2	8.5	9.3 ^	—	6.0	—
High School Students											—	—	8.0
SBP participants	139	7.9	0.35	4.4 ^	5.1 ^	6.2	7.7	9.4	11.2 ^	12.3 ^	—	—	8.0
SBP nonparticipants	564	7.6	0.30	3.3	4.0	5.4	7.2	9.4	11.6	13.2	—	—	8.0
High School Students, Male											—	—	8.0
SBP participants	83	8.5	0.42	5.9 ^	6.4 ^	7.3	8.4	9.5	10.7 ^	11.4 ^	—	—	8.0
SBP nonparticipants	283	8.3	0.40	3.9 ^	4.6	6.0	7.9	10.2	12.5	14.1 ^	—	—	8.0
High School Students, Female											—	—	8.0
SBP participants	56	--	--	--	--	--	--	--	--	--	—	—	8.0
SBP nonparticipants	281	6.5	0.35	2.7 ^	3.3	4.6	6.2	8.1	10.0	11.2 ^	—	—	8.0

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; oz = ounce equivalents; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.10. Usual Daily Whole Grains Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Whole Grain Intakes (oz)										Recommended Daily Amount of Whole Grains (oz), by Calorie Level ^a		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^b											—	—	—
SBP participants	117	1.7	0.15	1.1 ^	1.3 ^	1.5	1.7	2.0	2.2 ^	2.4 ^	—	—	—
SBP nonparticipants	240	1.5	0.08	0.7 ^	0.9	1.1	1.4	1.8	2.2	2.4 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	220	1.7	0.17	0.7 ^	0.9	1.2	1.6	2.1	2.6	2.9 ^	—	—	—
SBP nonparticipants	711	1.3	0.08	0.5	0.7	1.1	1.4	1.6	1.9	2.0	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	125	1.7	0.17	0.9 ^	1.1 ^	1.4	1.8	2.0	2.3 ^	2.4 ^	—	—	—
SBP nonparticipants	365	1.6	0.15	0.1 ^	0.4	1.1	1.6	2.2	2.7	3.1 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	1.5	0.20	0.4 ^	0.6 ^	1.0	1.5	2.0	2.6 ^	2.9 ^	—	—	—
SBP nonparticipants	353	1.2	0.11	0.4 ^	0.6	0.9	1.2	1.4	1.7	1.8 ^	—	—	—
14 to 18 Years ^c											—	—	—
SBP participants	168	1.8	0.12	1.0 ^	1.2 ^	1.5	1.8	2.1	2.3 ^	2.5 ^	—	—	—
SBP nonparticipants	695	1.4	0.11	0.4	0.6	0.9	1.4	1.9	2.4	2.7	—	—	—
14 to 18 Years, Male ^c											—	—	—
SBP participants	105	1.9	0.23	0.9 ^	1.0 ^	1.3	1.8	2.3	3.0 ^	3.4 ^	—	—	—
SBP nonparticipants	354	1.7	0.11	0.4 ^	0.7	1.1	1.6	2.2	2.7	3.0 ^	—	—	—
14 to 18 Years, Female ^c											—	—	—
SBP participants	66	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	338	1.2	0.13	0.4 ^	0.5	0.8	1.2	1.5	1.8	1.9 ^	—	—	—
All Students											—	—	—
SBP participants	501	1.7	0.09	0.9	1.1	1.4	1.7	2.0	2.3	2.4	—	—	—
SBP nonparticipants	1,633	1.4	0.05	0.5	0.8	1.1	1.4	1.7	1.9	2.1	—	—	—
All Students, Male											—	—	—
SBP participants	285	1.8	0.14	0.9 ^	1.2	1.5	1.8	2.1	2.4	2.5 ^	—	—	—
SBP nonparticipants	832	1.6	0.07	0.3	0.6	1.0	1.5	2.1	2.7	3.0	—	—	—
All Students, Female											—	—	—
SBP participants	216	1.6	0.09	0.9 ^	1.1	1.4	1.6	1.9	2.1	2.3 ^	—	—	—
SBP nonparticipants	818	1.2	0.07	0.4	0.6	0.9	1.3	1.5	1.7	1.9	—	—	—

	Whole Grain Intakes (oz)										Recommended Daily Amount of Whole Grains (oz), by Calorie Level ^a		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											3.0	—	—
SBP participants	228	1.8	0.15	0.9 ^	1.1	1.4	1.7	2.1	2.5	2.8 ^	3.0	—	—
SBP nonparticipants	517	NR	NR	NR	NR	NR	NR	NR	NR	NR	3.0	—	—
Elementary School Students, Male											3.0	—	—
SBP participants	116	NR	NR	NR	NR	NR	NR	NR	NR	NR	3.0	—	—
SBP nonparticipants	258	1.6	0.11	0.3 ^	0.6	1.0	1.5	2.0	2.7	3.1 ^	3.0	—	—
Elementary School Students, Female											3.0	—	—
SBP participants	110	1.7	0.16	0.2 ^	0.5 ^	1.0	1.5	2.2	2.9 ^	3.4 ^	3.0	—	—
SBP nonparticipants	262	NR	NR	NR	NR	NR	NR	NR	NR	NR	3.0	—	—
Middle School Students											—	3.0	—
SBP participants	141	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	3.0	—
SBP nonparticipants	561	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	3.0	—
Middle School Students, Male											—	3.0	—
SBP participants	92	2.1	0.29	0.9 ^	1.1 ^	1.5	2.0	2.5	3.1 ^	3.5 ^	—	3.0	—
SBP nonparticipants	291	1.7	0.17	0.3 ^	0.6	1.1	1.7	2.3	2.9	3.3 ^	—	3.0	—
Middle School Students, Female											—	3.0	—
SBP participants	52	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	3.0	—
SBP nonparticipants	278	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	3.0	—
High School Students											—	—	4.0
SBP participants	135	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	—	4.0
SBP nonparticipants	564	1.4	0.13	0.3	0.4	0.8	1.3	1.8	2.4	2.8	—	—	4.0
High School Students, Male											—	—	4.0
SBP participants	83	1.6	0.20	1.0 ^	1.1 ^	1.3	1.6	1.9	2.2 ^	2.5 ^	—	—	4.0
SBP nonparticipants	283	1.5	0.15	0.2 ^	0.4	0.9	1.5	2.1	2.6	2.9 ^	—	—	4.0
High School Students, Female											—	—	4.0
SBP participants	55	NR	NR	NR	NR	NR	NR	NR	NR	NR	—	—	4.0
SBP nonparticipants	281	1.1	0.16	0.4 ^	0.5	0.7	1.0	1.4	1.8	2.0 ^	—	—	4.0

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; NR = Not reported because usual intake distribution could not be reliably estimated; oz = ounce equivalent; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.11. Usual Daily Dairy Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Dairy Intakes (cups)										Recommended Daily Amount of Dairy (cups), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^b											—	—	—
SBP participants	118	2.5	0.08	1.5 ^	1.7 ^	2.0	2.4	2.9	3.3 ^	3.6 ^	—	—	—
SBP nonparticipants	240	2.6	0.14	1.2 ^	1.5	1.9	2.5	3.2	3.9	4.3 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	216	2.4	0.12	1.5 ^	1.7	2.0	2.4	2.8	3.3	3.5 ^	—	—	—
SBP nonparticipants	719	2.2	0.13	0.8	1.0	1.5	2.1	2.8	3.5	4.0	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	127	2.6	0.15	1.7 ^	1.9 ^	2.2	2.6	3.0	3.4 ^	3.6 ^	—	—	—
SBP nonparticipants	365	2.3	0.15	0.9 ^	1.1	1.6	2.2	2.9	3.7	4.2 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	2.4	0.22	1.1 ^	1.3 ^	1.7	2.3	2.9	3.6 ^	4.0 ^	—	—	—
SBP nonparticipants	354	2.0	0.21	0.7 ^	0.9	1.3	1.9	2.6	3.4	3.9 ^	—	—	—
14 to 18 Years ^c											—	—	—
SBP participants	172	2.5	0.21	0.8 ^	1.1 ^	1.6	2.3	3.2	4.2 ^	4.8 ^	—	—	—
SBP nonparticipants	695	2.2	0.12	0.5	0.7	1.2	1.9	2.9	4.0	4.8	—	—	—
14 to 18 Years, Male ^c											—	—	—
SBP participants	105	3.0	0.33	0.7 ^	1.0 ^	1.7	2.7	4.0	5.4 ^	6.3 ^	—	—	—
SBP nonparticipants	354	2.6	0.19	0.6 ^	0.8	1.4	2.3	3.5	4.8	5.7 ^	—	—	—
14 to 18 Years, Female ^c											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	341	1.6	0.10	0.5 ^	0.7	1.0	1.4	2.0	2.6	3.0 ^	—	—	—
All Students											—	—	—
SBP participants	507	2.4	0.09	1.6	1.7	2.0	2.4	2.8	3.2	3.4	—	—	—
SBP nonparticipants	1,654	2.3	0.09	0.7	1.0	1.5	2.1	3.0	3.9	4.4	—	—	—
All Students, Male											—	—	—
SBP participants	284	2.6	0.12	1.6 ^	1.8	2.2	2.6	3.0	3.4	3.7 ^	—	—	—
SBP nonparticipants	832	2.5	0.10	0.8	1.1	1.6	2.4	3.3	4.2	4.8	—	—	—
All Students, Female											—	—	—
SBP participants	218	2.2	0.09	1.3 ^	1.5	1.8	2.2	2.6	3.0	3.3 ^	—	—	—
SBP nonparticipants	822	2.0	0.12	0.6	0.8	1.3	1.9	2.6	3.4	3.9	—	—	—

	Dairy Intakes (cups)										Recommended Daily Amount of Dairy (cups), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											3.0	—	—
SBP participants	228	2.5	0.09	1.6 ^	1.8	2.1	2.4	2.8	3.2	3.5 ^	3.0	—	—
SBP nonparticipants	520	2.4	0.11	0.9	1.2	1.7	2.3	3.1	3.8	4.3	3.0	—	—
Elementary School Students, Male											3.0	—	—
SBP participants	117	2.5	0.12	1.6 ^	1.8 ^	2.1	2.5	2.9	3.3 ^	3.5 ^	3.0	—	—
SBP nonparticipants	258	2.6	0.12	1.1 ^	1.4	1.9	2.5	3.3	4.0	4.5 ^	3.0	—	—
Elementary School Students, Female											3.0	—	—
SBP participants	110	2.4	0.13	1.5 ^	1.7 ^	2.0	2.4	2.8	3.2 ^	3.4 ^	3.0	—	—
SBP nonparticipants	262	2.3	0.18	0.8 ^	1.0	1.5	2.2	2.9	3.7	4.2 ^	3.0	—	—
Middle School Students											—	3.0	—
SBP participants	144	2.4	0.13	1.1 ^	1.3 ^	1.7	2.3	3.0	3.8 ^	4.3 ^	—	3.0	—
SBP nonparticipants	570	2.1	0.10	0.9	1.1	1.5	2.0	2.6	3.2	3.6	—	3.0	—
Middle School Students, Male											—	3.0	—
SBP participants	92	2.7	0.18	1.3 ^	1.5 ^	2.0	2.6	3.3	3.9 ^	4.4 ^	—	3.0	—
SBP nonparticipants	291	2.4	0.14	1.1 ^	1.3	1.7	2.3	2.9	3.5	4.0 ^	—	3.0	—
Middle School Students, Female											—	3.0	—
SBP participants	52	--	--	--	--	--	--	--	--	--	—	3.0	—
SBP nonparticipants	279	1.7	0.11	0.8 ^	1.0	1.3	1.6	2.1	2.5	2.8 ^	—	3.0	—
High School Students											—	—	3.0
SBP participants	139	2.6	0.24	0.9 ^	1.2 ^	1.7	2.4	3.3	4.2 ^	4.8 ^	—	—	3.0
SBP nonparticipants	564	2.3	0.15	0.4	0.7	1.2	1.9	3.0	4.2	5.1	—	—	3.0
High School Students, Male											—	—	3.0
SBP participants	83	3.1	0.43	0.9 ^	1.3 ^	1.9	2.9	4.1	5.4 ^	6.1 ^	—	—	3.0
SBP nonparticipants	283	2.7	0.20	0.5 ^	0.8	1.4	2.4	3.7	5.1	6.2 ^	—	—	3.0
High School Students, Female											—	—	3.0
SBP participants	56	--	--	--	--	--	--	--	--	--	—	—	3.0
SBP nonparticipants	281	1.6	0.12	0.5 ^	0.6	1.0	1.4	2.0	2.6	3.1 ^	—	—	3.0

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning SBP breakfasts, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

cups = cup equivalents; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.12. Usual Daily Protein Foods Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Protein Foods Intakes (oz)										Recommended Daily Amount of Protein Foods (oz), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^b											—	—	—
SBP participants	119	3.3	0.23	1.8 ^	2.0 ^	2.6	3.2	4.0	4.8 ^	5.3 ^	—	—	—
SBP nonparticipants	240	3.9	0.25	2.2 ^	2.5	3.1	3.8	4.6	5.4	5.9 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	218	4.3	0.22	2.5 ^	2.8	3.4	4.2	5.2	6.1	6.7 ^	—	—	—
SBP nonparticipants	718	4.4	0.24	2.2	2.6	3.3	4.2	5.3	6.4	7.1	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	128	4.7	0.25	2.8 ^	3.1 ^	3.8	4.6	5.5	6.5 ^	7.1 ^	—	—	—
SBP nonparticipants	365	4.6	0.28	2.8 ^	3.1	3.7	4.5	5.4	6.2	6.8 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	90	4.0	0.26	2.2 ^	2.5 ^	3.1	3.8	4.7	5.5 ^	6.1 ^	—	—	—
SBP nonparticipants	354	4.1	0.38	2.4 ^	2.8	3.3	4.0	4.8	5.5	6.0 ^	—	—	—
14 to 18 Years ^c											—	—	—
SBP participants	164	4.8	0.39	2.8 ^	3.2 ^	3.9	4.7	5.7	6.6 ^	7.3 ^	—	—	—
SBP nonparticipants	695	5.5	0.24	2.5	3.0	4.0	5.3	6.8	8.4	9.5	—	—	—
14 to 18 Years, Male ^c											—	—	—
SBP participants	98	5.2	0.38	3.2 ^	3.5 ^	4.2	5.1	6.1	7.1 ^	7.8 ^	—	—	—
SBP nonparticipants	354	6.2	0.39	2.6 ^	3.2	4.3	5.9	7.7	9.6	11.0 ^	—	—	—
14 to 18 Years, Female ^c											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	341	4.6	0.22	2.4 ^	2.8	3.5	4.5	5.6	6.7	7.4 ^	—	—	—
All Students											—	—	—
SBP participants	501	4.2	0.20	2.2	2.5	3.2	4.0	5.0	5.9	6.6	—	—	—
SBP nonparticipants	1,654	4.6	0.18	2.6	2.9	3.6	4.4	5.4	6.4	7.0	—	—	—
All Students, Male											—	—	—
SBP participants	285	4.5	0.22	2.5 ^	2.8	3.5	4.4	5.3	6.4	7.0 ^	—	—	—
SBP nonparticipants	832	4.9	0.23	2.3	2.7	3.5	4.6	5.9	7.2	8.2	—	—	—
All Students, Female											—	—	—
SBP participants	216	3.8	0.24	2.0 ^	2.3	2.9	3.6	4.5	5.4	6.0 ^	—	—	—
SBP nonparticipants	822	4.3	0.19	2.3	2.7	3.3	4.1	5.1	6.0	6.6	—	—	—

	Protein Foods Intakes (oz)										Recommended Daily Amount of Protein Foods (oz), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											5.0	—	—
SBP participants	226	3.7	0.21	2.2 ^	2.5	3.0	3.7	4.4	5.0	5.5 ^	5.0	—	—
SBP nonparticipants	520	4.0	0.21	2.3	2.7	3.2	3.9	4.7	5.5	6.0	5.0	—	—
Elementary School Students, Male											5.0	—	—
SBP participants	117	4.2	0.23	2.2 ^	2.5 ^	3.2	4.0	5.0	6.0 ^	6.7 ^	5.0	—	—
SBP nonparticipants	258	4.2	0.30	1.8 ^	2.2	2.9	4.0	5.2	6.5	7.3 ^	5.0	—	—
Elementary School Students, Female											5.0	—	—
SBP participants	110	3.9	0.47	1.8 ^	2.2 ^	2.8	3.7	4.7	5.8 ^	6.5 ^	5.0	—	—
SBP nonparticipants	262	4.0	0.23	2.1 ^	2.5	3.1	3.9	4.8	5.7	6.3 ^	5.0	—	—
Middle School Students											—	5.5	—
SBP participants	144	4.6	0.33	2.8 ^	3.2 ^	3.7	4.5	5.3	6.2 ^	6.7 ^	—	5.5	—
SBP nonparticipants	570	4.3	0.19	2.3	2.6	3.3	4.1	5.1	6.0	6.7	—	5.5	—
Middle School Students, Male											—	5.5	—
SBP participants	91	4.6	0.26	2.4 ^	2.8 ^	3.5	4.4	5.5	6.5 ^	7.2 ^	—	5.5	—
SBP nonparticipants	291	4.6	0.28	2.2 ^	2.6	3.4	4.4	5.6	6.9	7.8 ^	—	5.5	—
Middle School Students, Female											—	5.5	—
SBP participants	52	--	--	--	--	--	--	--	--	--	—	5.5	—
SBP nonparticipants	279	3.7	0.30	1.8 ^	2.1	2.7	3.6	4.5	5.6	6.2 ^	—	5.5	—
High School Students											—	—	6.5
SBP participants	134	4.8	0.44	2.9 ^	3.3 ^	3.9	4.7	5.6	6.4 ^	7.0 ^	—	—	6.5
SBP nonparticipants	564	5.6	0.27	2.5	3.0	4.0	5.3	6.9	8.6	9.7	—	—	6.5
High School Students, Male											—	—	6.5
SBP participants	77	5.2	0.40	2.9 ^	3.2 ^	4.0	5.0	6.2	7.4 ^	8.2 ^	—	—	6.5
SBP nonparticipants	283	6.2	0.42	2.7 ^	3.3	4.3	5.8	7.6	9.5	10.9 ^	—	—	6.5
High School Students, Female											—	—	6.5
SBP participants	56	--	--	--	--	--	--	--	--	--	—	—	6.5
SBP nonparticipants	281	4.8	0.31	2.3 ^	2.7	3.6	4.6	5.8	7.0	7.9 ^	—	—	6.5

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; oz = ounce equivalents; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.13. Usual Daily Oils Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Oils Intakes (tsp)										Recommended Daily Amount of Oils (tsp), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^b											—	—	—
SBP participants	119	4.6	0.32	2.7 ^	3.0 ^	3.7	4.4	5.4	6.3 ^	7.0 ^	—	—	—
SBP nonparticipants	240	4.1	0.24	2.4 ^	2.7	3.3	4.0	4.8	5.7	6.3 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	220	4.9	0.27	2.6 ^	3.0	3.7	4.7	5.9	7.1	7.9 ^	—	—	—
SBP nonparticipants	712	4.8	0.25	2.8	3.1	3.8	4.7	5.6	6.6	7.2	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	129	5.0	0.45	2.8 ^	3.2 ^	3.9	4.9	6.0	7.0 ^	7.8 ^	—	—	—
SBP nonparticipants	365	4.7	0.28	2.6 ^	3.0	3.7	4.6	5.5	6.5	7.2 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	4.8	0.44	2.4 ^	2.8 ^	3.6	4.6	5.8	7.0 ^	7.8 ^	—	—	—
SBP nonparticipants	354	5.0	0.28	2.7 ^	3.1	3.8	4.8	5.9	7.1	7.9 ^	—	—	—
14 to 18 Years ^c											—	—	—
SBP participants	172	5.4	0.39	1.9 ^	2.4 ^	3.4	4.9	6.8	9.0 ^	10.4 ^	—	—	—
SBP nonparticipants	695	5.4	0.22	2.5	3.0	3.9	5.1	6.6	8.2	9.3	—	—	—
14 to 18 Years, Male ^c											—	—	—
SBP participants	105	6.0	0.67	2.3 ^	2.9 ^	4.0	5.6	7.5	9.6 ^	10.9 ^	—	—	—
SBP nonparticipants	354	5.5	0.29	2.1 ^	2.6	3.5	5.0	6.9	9.0	10.6 ^	—	—	—
14 to 18 Years, Female ^c											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	341	5.2	0.32	2.8 ^	3.2	4.0	5.0	6.1	7.3	8.2 ^	—	—	—
All Students											—	—	—
SBP participants	511	4.9	0.17	2.6	3.0	3.7	4.7	5.9	7.1	7.9	—	—	—
SBP nonparticipants	1,654	4.7	0.15	2.6	3.0	3.7	4.6	5.6	6.7	7.4	—	—	—
All Students, Male											—	—	—
SBP participants	293	5.1	0.30	2.9 ^	3.3	4.0	5.0	6.1	7.2	8.0 ^	—	—	—
SBP nonparticipants	827	4.6	0.17	2.6	3.0	3.6	4.5	5.5	6.5	7.2	—	—	—
All Students, Female											—	—	—
SBP participants	218	4.7	0.27	2.3 ^	2.7	3.5	4.5	5.6	6.8	7.6 ^	—	—	—
SBP nonparticipants	822	4.8	0.20	2.5	2.9	3.6	4.6	5.7	6.9	7.7	—	—	—

	Oils Intakes (tsp)										Recommended Daily Amount of Oils (tsp), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											5.0	—	—
SBP participants	228	4.9	0.20	2.5 ^	2.9	3.7	4.7	5.8	7.0	7.8 ^	5.0	—	—
SBP nonparticipants	520	4.4	0.24	2.5	2.8	3.5	4.3	5.2	6.2	6.8	5.0	—	—
Elementary School Students, Male											5.0	—	—
SBP participants	118	4.9	0.31	2.7 ^	3.1 ^	3.8	4.7	5.8	6.8 ^	7.6 ^	5.0	—	—
SBP nonparticipants	258	4.4	0.28	2.5 ^	2.8	3.4	4.2	5.2	6.1	6.8 ^	5.0	—	—
Elementary School Students, Female											5.0	—	—
SBP participants	110	4.8	0.33	2.6 ^	3.0 ^	3.8	4.7	5.8	6.9 ^	7.6 ^	5.0	—	—
SBP nonparticipants	262	4.6	0.27	2.3 ^	2.7	3.4	4.4	5.5	6.8	7.6 ^	5.0	—	—
Middle School Students											—	6.0	—
SBP participants	144	4.8	0.52	2.8 ^	3.1 ^	3.8	4.6	5.6	6.6 ^	7.3 ^	—	6.0	—
SBP nonparticipants	570	4.7	0.20	2.5	2.8	3.6	4.5	5.6	6.7	7.4	—	6.0	—
Middle School Students, Male											—	6.0	—
SBP participants	92	5.5	0.79	2.3 ^	2.8 ^	3.8	5.1	6.9	8.7 ^	10.0 ^	—	6.0	—
SBP nonparticipants	290	4.8	0.26	2.8 ^	3.1	3.8	4.6	5.6	6.7	7.4 ^	—	6.0	—
Middle School Students, Female											—	6.0	—
SBP participants	52	--	--	--	--	--	--	--	--	--	—	6.0	—
SBP nonparticipants	279	4.6	0.36	1.9 ^	2.3	3.1	4.3	5.7	7.2	8.2 ^	—	6.0	—
High School Students											—	—	7.0
SBP participants	139	5.4	0.46	1.8 ^	2.4 ^	3.4	5.0	6.9	9.1 ^	10.5 ^	—	—	7.0
SBP nonparticipants	564	5.6	0.35	2.4	2.8	3.8	5.2	7.0	8.9	10.3	—	—	7.0
High School Students, Male											—	—	7.0
SBP participants	83	5.8	0.84	2.4 ^	2.9 ^	4.0	5.4	7.2	9.1 ^	10.3 ^	—	—	7.0
SBP nonparticipants	283	5.7	0.48	2.2 ^	2.7	3.7	5.2	7.1	9.4	11.1 ^	—	—	7.0
High School Students, Female											—	—	7.0
SBP participants	56	--	--	--	--	--	--	--	--	--	—	—	7.0
SBP nonparticipants	281	5.5	0.46	2.7 ^	3.2	4.1	5.3	6.7	8.1	9.1 ^	—	—	7.0

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error; tsp = teaspoon.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.14. Usual Daily Empty Calories Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Empty Calories Intakes (kcal)										Recommended Daily Amount of Empty Calories (kcal), by Calorie Level ^a		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	1,800	2,000	2,400
By Age/Gender Groups													
6 to 8 Years ^b											—	—	—
SBP participants	117	479	26.2	315 ^	346 ^	401	470	548	625 ^	674 ^	—	—	—
SBP nonparticipants	240	508	18.7	338 ^	372	432	503	579	651	701 ^	—	—	—
9 to 13 Years											—	—	—
SBP participants	220	582	21.6	338 ^	381	458	564	684	805	890 ^	—	—	—
SBP nonparticipants	719	543	32.0	215	269	374	514	678	854	969	—	—	—
9 to 13 Years, Male											—	—	—
SBP participants	129	608	32.7	384 ^	425 ^	499	596	703	806 ^	879 ^	—	—	—
SBP nonparticipants	365	568	37.7	272 ^	321	418	544	689	844	941 ^	—	—	—
9 to 13 Years, Female											—	—	—
SBP participants	91	539	36.5	350 ^	384 ^	449	526	616	708 ^	769 ^	—	—	—
SBP nonparticipants	354	510	40.3	150 ^	204	312	470	663	866	1,012 ^	—	—	—
14 to 18 Years ^c											—	—	—
SBP participants	172	603	43.2	218 ^	272 ^	380	547	760	1,011 ^	1,185 ^	—	—	—
SBP nonparticipants	695	584	17.5	300	349	441	562	700	845	942	—	—	—
14 to 18 Years, Male ^c											—	—	—
SBP participants	105	699	55.4	256 ^	325 ^	465	653	884	1,136 ^	1,296 ^	—	—	—
SBP nonparticipants	354	626	31.7	235 ^	297	418	585	791	1,006	1,157 ^	—	—	—
14 to 18 Years, Female ^c											—	—	—
SBP participants	67	--	--	--	--	--	--	--	--	--	—	—	—
SBP nonparticipants	341	517	23.3	243 ^	287	377	494	631	774	871 ^	—	—	—
All Students											—	—	—
SBP participants	511	556	18.7	316	356	433	536	656	781	866	—	—	—
SBP nonparticipants	1,654	544	16.9	263	312	403	523	661	802	894	—	—	—
All Students, Male											—	—	—
SBP participants	293	584	24.6	347 ^	387	466	567	681	800	881 ^	—	—	—
SBP nonparticipants	832	566	21.4	279	328	424	546	684	825	917	—	—	—
All Students, Female											—	—	—
SBP participants	218	524	25.0	284 ^	323	399	500	622	754	848 ^	—	—	—
SBP nonparticipants	822	516	16.2	243	288	377	492	629	775	873	—	—	—

	Empty Calories Intakes (kcal)										Recommended Daily Amount of Empty Calories (kcal), by Calorie Level ^a		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95	1,800	2,000	2,400
By School Type and Gender													
Elementary School Students											161	—	—
SBP participants	228	531	25.6	301 ^	340	414	512	626	745	823 ^	161	—	—
SBP nonparticipants	520	535	22.0	266	316	405	517	647	776	858	161	—	—
Elementary School Students, Male											161	—	—
SBP participants	118	524	29.3	324 ^	360 ^	426	513	606	704 ^	773 ^	161	—	—
SBP nonparticipants	258	539	27.1	334 ^	376	446	530	622	715	771 ^	161	—	—
Elementary School Students, Female											161	—	—
SBP participants	108	510	41.0	323 ^	359 ^	422	499	588	675 ^	732 ^	161	—	—
SBP nonparticipants	262	534	27.1	210 ^	263	368	507	670	840	953 ^	161	—	—
Middle School Students											—	258	—
SBP participants	144	588	32.7	338 ^	380 ^	460	566	692	820 ^	914 ^	—	258	—
SBP nonparticipants	570	465	21.4	195	238	322	440	580	727	822	—	258	—
Middle School Students, Male											—	258	—
SBP participants	92	610	43.1	384 ^	425 ^	502	597	707	810 ^	884 ^	—	258	—
SBP nonparticipants	291	516	26.0	221 ^	269	366	491	638	791	894 ^	—	258	—
Middle School Students, Female											—	258	—
SBP participants	52	--	--	--	--	--	--	--	--	--	—	258	—
SBP nonparticipants	279	389	30.8	167 ^	202	272	368	480	605	684 ^	—	258	—
High School Students											—	—	330
SBP participants	139	618	43.0	230 ^	291 ^	402	567	776	1,021 ^	1,181 ^	—	—	330
SBP nonparticipants	564	595	24.3	293	345	443	571	722	877	983	—	—	330
High School Students, Male											—	—	330
SBP participants	83	718	61.7	320 ^	389 ^	518	688	887	1,093 ^	1,213 ^	—	—	330
SBP nonparticipants	283	647	38.4	263 ^	329	451	616	807	1,007	1,140 ^	—	—	330
High School Students, Female											—	—	330
SBP participants	56	--	--	--	--	--	--	--	--	--	—	—	330
SBP nonparticipants	281	524	30.7	335 ^	370	437	514	602	689	748 ^	—	—	330

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual food group intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific food groups.

^aUSDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010).

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. The analysis did not define reference values for usual daily intakes of USDA Food Pattern food groups for subgroups of students defined by age and gender. Rather, the analysis used a single USDA Food Pattern to define reference values for each school type (described above).

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table K.15. Mean Proportion of 24-Hour Intakes of USDA Food Pattern Food Groups Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Vegetables	3.5 ^	<3	<3	<3	<3	2.6
Dark green	<3	<3	<3	<3	<3	<3
Red and orange	5.3 ^	<3	3.4 ^	<3	4.8	2.0
Legumes	<3	<3	<3	<3*	<3	<3
Starchy	<3	<3	<3	<3	<3	1.9
Other	<3	<3	<3	<3	<3	1.8
Fruits ^a	35.2	19.6***	26.2	19.3	32.6	19.5***
Grains	20.6	21.4	23.1	19.7	21.3	20.8
Whole grains	32.4	26.0	33.8	24.8*	32.8	25.6
Dairy	30.3	27.5	30.2	26.6	30.3	27.2
Protein Foods	7.9	6.8	8.2 ^	9.7	8.0	7.8
Oils	13.5	12.7	12.4 ^	13.5	13.2	12.9
Empty Calories	21.7	24.6	21.4	22.7	21.6	23.9
Calories from solid fats	18.9	24.8*	17.9	20.2	18.6	23.2*
Calories from added sugars	27.2	26.2	26.4	25.5	27.0	26.0
Number of Students	354	498	149	838	503	1,336

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level and students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning SBP breakfasts, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

^aIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level or * 0.05 level.

SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table K.16. Usual Daily Intakes of USDA Food Pattern Food Groups: Mean Proportion of Daily Recommended Amounts of USDA Food Pattern Food Groups Consumed by SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Vegetables ^a	39.8	40.9	39.8	38.1	39.7	39.7
Red and orange	36.8	31.2	35.7	32.8	36.5	31.7
Other	47.6	39.6	36.3	42.0	44.1	40.3
Fruits ^b	94.3	82.2	84.9	79.3	91.2	81.0
Grains	117.9	111.7	112.2	115.0	116.0	112.7
Whole grains	53.8	45.3*	53.8	42.9	53.8	43.7**
Dairy	82.0	78.0	80.0	75.2	81.4	77.0
Protein Foods	74.2	81.6	81.5	87.7	76.3	83.1
Oils	84.0	83.2	94.9	90.3	87.9	85.2
Empty Calories	273.7	280.9	281.5	262.1	275.7	274.5
Number of Students	354	650	149	970	503	1,620

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a breakfast, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

USDA Food Pattern recommendations assign individuals to a calorie level based on their gender, age, and activity level (USDA, CNPP 2011). The Food Patterns for 1,800, 2,000, and 2,400 calories were used as reference standards for assessing usual food group intakes of elementary, middle, and high school students, respectively (IOM 2010). The USDA Food Patterns provide weekly recommendations for vegetable subgroups. For this analysis, weekly recommendations were divided by 7 (days per week) to reflect daily recommendations.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning SBP breakfasts, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

Actual sample sizes for some food groups and subgroups of students differ from the reported total sample sizes because outliers had to be omitted, on a food group by student subgroup basis, in order to estimate usual intake distributions.

^aUsual intake distributions for dark green vegetables, starchy vegetables, and legumes could not be reliably estimated because so few students consumed these foods. Intakes of dark green vegetables, starchy vegetables, and legumes are, however, included in the vegetables group. All legumes were counted as vegetables in this analysis.

^aIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the ** 0.01 level or * 0.05 level.

NCI = National Cancer Institute; SBP = School Breakfast Program.

This page has been left blank for double-sided copying.

APPENDIX L

CHAPTER 11 SUPPLEMENTAL TABLES

This page has been left blank for double-sided copying.

TABLES

L.1	Mean Amounts of Calories and Nutrients Consumed over 24 Hours by SBP Participants and Matched Comparison Group of Nonparticipants.....	L.7
L.2	Mean Proportion of 24-Hour Nutrient Intakes Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants.....	L.9
L.3	Mean Nutrients Consumed by SBP Participants and Matched Comparison Group of Nonparticipants Who Obtained More Than Half of Their Breakfast Foods from Home	L.11
L.4	Mean Proportion of 24-Hour Nutrient Intakes Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants Who Obtained More Than Half of Their Breakfast Foods from Home.....	L.13
L.5	Mean Usual Daily Calorie (Energy) Intakes and Estimated Energy Requirements of SBP Participants and Matched Comparison Group of Nonparticipants.....	L.15
L.6	Estimated Daily Energy Requirements: SBP Participants and Matched Comparison Group of Nonparticipants	L.16
L.7	Usual Daily Calorie (Energy) Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.19
L.8	Usual Daily Total Fat Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants.....	L.22
L.9	Usual Daily Total Fat Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.25
L.10	Usual Daily Saturated Fat Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants.....	L.28
L.11	Usual Daily Saturated Fat Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.31
L.12	Usual Daily Monounsaturated Fat Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants.....	L.34
L.13	Usual Daily Monounsaturated Fat Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.37
L.14	Usual Daily Polyunsaturated Fat Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants.....	L.40
L.15	Usual Daily Polyunsaturated Fat Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.43
L.16	Usual Daily Linoleic Acid Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants.....	L.46
L.17	Usual Daily Linoleic Acid Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.49
L.18	Usual Daily Alpha-Linolenic Acid Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants.....	L.52

L.19	Usual Daily Alpha-Linolenic Acid Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.55
L.20	Usual Daily Carbohydrate Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants	L.58
L.21	Usual Daily Carbohydrate Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.61
L.22	Usual Daily Protein Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants	L.64
L.23	Usual Daily Protein Intakes, Expressed as g per kg Body Weight: SBP Participants and Matched Comparison Group of Nonparticipants	L.67
L.24	Usual Daily Vitamin A Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.70
L.25	Usual Daily Vitamin C Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.73
L.26	Usual Daily Vitamin D Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.76
L.27	Usual Daily Vitamin E Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.79
L.28	Usual Daily Vitamin B ₆ Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.82
L.29	Usual Daily Vitamin B ₁₂ Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.85
L.30	Usual Daily Folate Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.88
L.31	Usual Daily Niacin Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.91
L.32	Usual Daily Riboflavin Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.94
L.33	Usual Daily Thiamin Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.97
L.34	Usual Daily Calcium Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.100
L.35	Usual Daily Iron Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.103
L.36	Usual Daily Magnesium Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.106
L.37	Usual Daily Phosphorus Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.109

L.38	Usual Daily Zinc Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.112
L.39	Usual Daily Potassium Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.115
L.40	Usual Daily Sodium Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.118
L.41	Usual Daily Dietary Fiber Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.121
L.42	Usual Daily Dietary Fiber Intakes, Per 1,000 Calories: SBP Participants and Matched Comparison Group of Nonparticipants.....	L.124
L.43	Usual Daily Cholesterol Intakes: SBP Participants and Matched Comparison Group of Nonparticipants	L.127
L.44	Percentage of SBP Participants and Matched Comparison Group of Nonparticipants with Acceptable, Inadequate, or Excessive Usual Daily Nutrient Intakes	L.130
L.45	Mean Proportion of 24-Hour Nutrient Intakes Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level.....	L.133
L.46	Percentage of SBP Participants and Matched Comparison Group of Nonparticipants with Acceptable, Inadequate, or Excessive Usual Daily Nutrient Intakes, by Household Poverty Level	L.135

This page has been left blank for double-sided copying.

Table L.1. Mean Amounts of Calories and Nutrients Consumed over 24 Hours by SBP Participants and Matched Comparison Group of Nonparticipants

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Calories (kcal)	1,974	1,862	2,061	1,747**	2,234	2,125	2,049	1,931
Macronutrients								
Total Fat (g)	68	64	73	62**	79	78	72	68
Saturated Fat (g)	23	22	25	21**	27	26	24	23
Monounsaturated Fat (g)	24	22	25	21**	27	27	25	23
Polyunsaturated Fat (g)	16	15	18	16	19	19	17	16
Linoleic acid (g)	15	14	16	14	17	17	15	15
Alpha-linolenic acid (g)	1.5	1.3*	1.5	1.3	1.6	1.6	1.5	1.4*
Carbohydrate (g)	274	258	279	235**	297	277	280	261*
Protein (g)	74	71	80	68**	90	84	79	75
Macronutrients: Percentage of Calories (%)								
Total Fat	30.3	30.2	31.5	31.6	31.0	32.2	30.7	31.0
Saturated Fat	10.1	10.3	10.6	10.5	10.5	10.6	10.3	10.4
Monounsaturated Fat	10.5	10.3	10.8	10.8	10.6	11.0	10.6	10.6
Polyunsaturated Fat	7.3	7.2	7.6	8.0	7.6	7.9	7.4	7.5
Linoleic acid	6.5	6.4	6.8	7.1	6.8	7.1	6.6	6.7
Alpha-linolenic acid	0.7	0.6	0.7	0.7	0.6	0.7	0.7	0.6
Carbohydrate	56.2	55.9	54.3	53.8	53.9	52.5	55.3	54.6
Protein	15.3	15.6	15.7	16.0	16.5	16.4	15.6	15.9
Vitamins								
Vitamin A (mcg RAE)	635	640	628	576	627	624	632	623
Vitamin C (mg)	90	86	84	76	84	74	87	83
Vitamin D (mcg)	12.0	8.5	7.8	7.5	8.7	6.9	10.5	8.1
Vitamin E (mg AT)	6.9	6.6	7.1	6.6	8.2	8.3	7.2	7.3
Vitamin B ₆ (mg)	1.9	1.9	2.3	1.8*	2.2	2.2	2.0	2.0
Vitamin B ₁₂ (mcg)	5.4	5.4	6.0	4.7**	6.3	5.4	5.7	5.3
Folate (mcg DFE)	507	567	606	510	628	570	553	560
Niacin (mg)	22	22	26	22*	26	27	24	23
Riboflavin (mg)	2.1	2.1	2.3	1.9**	2.4	2.1	2.2	2.1
Thiamin (mg)	1.6	1.6	1.8	1.5*	1.9	1.8	1.7	1.6

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Minerals								
Calcium (mg)	1,150	1,114	1,141	992*	1,289	1,110	1,180	1,093*
Iron (mg)	14.8	15.4	17.0	13.4**	17.2	15.4	15.8	15.2
Magnesium (mg)	274	258	272	241*	313	285	282	264*
Phosphorus (mg)	1,398	1,361	1,422	1,236**	1,601	1,481	1,449	1,381
Potassium (mg)	2,554	2,402	2,509	2,187**	2,753	2,481	2,592	2,400*
Sodium (mg)	2,993	2,978	3,251	2,823*	3,588	3,511	3,176	3,137
Zinc (mg)	10.5	11.0	12.7	10.0***	13.2	11.5	11.5	11.0
Other Dietary Components								
Dietary Fiber (g)	18	17	17	15*	18	17	18	17
Dietary Fiber Density (g/1,000 calories)	10	9	9	9	8	8	9	9
Cholesterol (mg)	182	187	216	188	246	232	203	205
Number of Students	228	520	144	570	139	564	511	1,654

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Note: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AT = alpha-tocopherol; DFE = dietary folate equivalents; RAE = retinol activity equivalents; SBP = School Breakfast Program.

Table L.2. Mean Proportion of 24-Hour Nutrient Intakes Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Calories	19.8	20.3	20.2	20.0	22.6	20.8	20.6	20.3
Macronutrients								
Total Fat	14.8	19.0**	16.2	16.5	18.7	18.5	16.0	18.5*
Saturated Fat	16.1	21.6**	18.7	20.4	22.3	20.7	18.0	21.1*
Monounsaturated Fat	14.1	19.0**	15.5	15.9	18.3	18.3	15.3	18.4**
Polyunsaturated Fat	15.4	16.1	14.4	12.5	16.4	16.2	15.5	15.5
Linoleic acid	15.3	16.2	14.2	12.3	16.4	16.2	15.3	15.5
Alpha-linolenic acid	17.1	16.5	16.2	13.8	17.2	16.0	17.0	16.1
Carbohydrate	23.7	22.4	23.9	22.9	26.0	23.4	24.2	22.6
Protein	16.6	16.7	16.7	18.0	20.3	17.0	17.5	16.8
Vitamins								
Vitamin A	31.7	34.9	36.3	40.5	36.4	36.3	33.6	35.6
Vitamin C	28.1	23.1*	29.5	30.5	42.7	24.5***	31.7	24.6***
Vitamin D	33.4	34.7	37.6	41.2	37.8	38.9	35.2	35.9
Vitamin E	14.1	16.6	14.0	15.5	18.7	17.8	15.2	17.0
Vitamin B ₆	27.3	29.1	27.7	32.8	27.5	26.7	27.4	28.8
Vitamin B ₁₂	29.1	34.1	31.2	38.8*	31.8	32.3	30.1	33.8
Folate	27.4	33.8*	31.1	38.5*	30.7	31.8	28.9	33.9**
Niacin	21.7	26.1	23.7	26.0	21.4	22.2	22.0	24.7
Riboflavin	30.6	31.9	32.9	36.0	34.2	32.9	31.8	32.5
Thiamin	26.1	29.4	30.0	31.2	30.1	28.4	27.8	29.3
Minerals								
Calcium	28.0	25.7	26.6	29.9	35.7	29.4	29.5	27.0
Iron	27.5	32.2	28.5	32.5	27.7	28.7	27.7	31.1
Magnesium	21.9	20.5	21.9	22.4	25.9	22.6	22.8	21.1
Phosphorus	22.3	21.3	21.2	23.4	26.2	22.8	23.0	21.8
Potassium	21.8	19.9	21.4	22.2	24.8	21.5*	22.4	20.5
Sodium	14.6	16.3	15.8	16.2	18.9	16.4	15.8	16.3
Zinc	22.6	26.3	23.8	29.3	25.9	23.4	23.6	25.7

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Other Dietary Components								
Dietary Fiber	18.9	17.6	19.2	17.1	19.8	18.9	19.1	17.9
Cholesterol	15.0	17.5	16.8	19.6	23.7	19.1	17.3	18.4
Number of Students	228	466	144	459	139	435	511	1,360

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls, Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

SBP = School Breakfast Program.

Table L.3. Mean Nutrients Consumed by SBP Participants and Matched Comparison Group of Nonparticipants Who Obtained More Than Half of Their Breakfast Foods from Home

	Mean Breakfast Intakes	
	Participants	Nonparticipants Who Obtained More Than Half of Breakfast Foods from Home
Calories (kcal)	408	395
Macronutrients		
Total Fat (g)	11	12
Saturated Fat (g)	4	5
Monounsaturated Fat (g)	4	4
Polyunsaturated Fat (g)	2	2
Linoleic acid (g)	2	2
Alpha-linolenic acid (g)	0.2	0.2
Carbohydrate (g)	66	61
Protein (g)	13	13
Macronutrients: Percentage of Calories		
Total Fat	22.2	25.5
Saturated Fat	8.3	9.9
Monounsaturated Fat	7.3	8.7
Polyunsaturated Fat	5.2	4.9
Linoleic acid	4.6	4.3
Alpha-linolenic acid	0.5	0.4
Carbohydrate	67.2	63.7
Protein	12.9	12.8
Vitamins		
Vitamin A (mcg RAE)	223	270
Vitamin C (mg)	27	25
Vitamin D (mcg)	3.0	2.9
Vitamin E (mg AT)	1.0	1.5
Vitamin B ₆ (mg)	0.6	0.7
Vitamin B ₁₂ (mcg)	1.8	2.2
Folate (mcg DFE)	182	254
Niacin (mg)	5	7
Riboflavin (mg)	0.7	0.8
Thiamin (mg)	0.5	0.6
Minerals		
Calcium (mg)	356	321
Iron (mg)	4.9	6.1
Magnesium (mg)	63	60
Phosphorus (mg)	332	315
Potassium (mg)	570	522
Sodium (mg)	495	503
Zinc (mg)	2.8	3.4
Other Dietary Components		
Dietary Fiber (g)	3	3
Dietary Fiber Density (g/1,000 calories)	9	8
Cholesterol (mg)	41	48
Number of Students	511	1,176

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

Sample sizes were too small to produce reliable estimates for nonparticipants who obtained more than half of their breakfast foods outside of school (n=59), at school (n=61), or from other sources (n=64).

Differences between participants and matched nonparticipants were not tested for statistical significance.

AT = alpha-tocopherol; DFE = dietary folate equivalents; RAE = retinol activity equivalents; SBP = School Breakfast Program.

Table L.4. Mean Proportion of 24-Hour Nutrient Intakes Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants Who Obtained More Than Half of Their Breakfast Foods from Home

	Mean Proportion of 24-Hour Intakes	
	Participants	Nonparticipants Who Obtained More Than Half of Breakfast Foods from Home
Calories	20.6	20.5
Macronutrients		
Total Fat	16.0	18.7
Saturated Fat	18.0	21.8
Monounsaturated Fat	15.3	18.4
Polyunsaturated Fat	15.5	15.3
Linoleic acid	15.3	15.3
Alpha-linolenic acid	17.0	15.9
Carbohydrate	24.2	22.9
Protein	17.5	17.2
Vitamins		
Vitamin A	33.6	37.2
Vitamin C	31.7	25.3
Vitamin D	35.2	37.7
Vitamin E	15.2	17.3
Vitamin B ₆	27.4	30.3
Vitamin B ₁₂	30.1	35.7
Folate	28.9	35.7
Niacin	22.0	25.7
Riboflavin	31.8	34.0
Thiamin	27.8	30.6
Minerals		
Calcium	29.5	27.7
Iron	27.7	32.6
Magnesium	22.8	21.6
Phosphorus	23.0	22.3
Potassium	22.4	20.9
Sodium	15.8	16.5
Zinc	23.6	26.8
Other Dietary Components		
Dietary Fiber	19.1	18.2
Cholesterol	17.3	18.9
Number of Students	511	1,176

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014–2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

Sample sizes were too small to produce reliable estimates for nonparticipants who obtained more than half of their breakfast foods outside of school (n=59), at school (n=61), or from other sources (n=64).

Differences between participants and matched nonparticipants were not tested for statistical significance.

SBP = School Breakfast Program.

Table L.5. Mean Usual Daily Calorie (Energy) Intakes and Estimated Energy Requirements of SBP Participants and Matched Comparison Group of Nonparticipants

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Mean Daily Calorie Intake (kcal)	1,946	1,902	2,028	1,762	2,191	2,094	1,994	1,934
Mean EER (kcal) ^a	2,195	2,120	2,441	2,442	2,717	2,748	2,358	2,338
Number of Students	228	520	144	570	139	564	511	1,654

Source: School Nutrition and Meal Cost Study, Child/Youth Interview, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual calorie intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

^aEstimated Energy Requirements (EERs) were estimated based on age, gender, height, and weight, and assumed an “active” physical activity level for children ages 6 to 10 years and a “low active” level for children 11 years and older (IOM 2010). EER estimates exclude children who did not have valid data for height and/or weight.

None of the difference between participants and the matched comparison group of nonparticipants are significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

EER = Estimated Energy Requirement; NCI = National Cancer Institute; SBP = School Breakfast Program.

Table L.6. Estimated Daily Energy Requirements: SBP Participants and Matched Comparison Group of Nonparticipants

	Estimated Energy Requirements (EERs) ^a (kcal)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^b										
SBP participants	105	2,051	47.5	1,647 ^	1,713 ^	1,771	1,966	2,104	2,766 ^	2,945 ^
SBP nonparticipants	221	2,022	37.8	1,644 ^	1,706	1,810	1,942	2,124	2,482	2,722 ^
9 to 13 Years										
SBP participants	209	2,339	49.6	1,751 ^	1,821	1,962	2,212	2,593	3,093	3,309 ^
SBP nonparticipants	691	2,311	29.1	1,820	1,913	2,030	2,212	2,452	2,924	3,165
9 to 13 Years, Male										
SBP participants	123	2,554	69.1	1,859 ^	1,939 ^	2,121	2,391	2,969	3,303 ^	3,607 ^
SBP nonparticipants	348	2,472	46.4	1,805 ^	1,988	2,112	2,373	2,764	3,165	3,378 ^
9 to 13 Years, Female										
SBP participants	86	2,095	40.5	1,637 ^	1,751 ^	1,912	2,009	2,289	2,590 ^	2,656 ^
SBP nonparticipants	343	2,109	19.2	1,822 ^	1,889	1,964	2,073	2,220	2,373	2,472 ^
14 to 18 Years ^c										
SBP participants	158	2,728	71.8	1,937 ^	2,019 ^	2,159	2,709	3,181	3,554 ^	3,643 ^
SBP nonparticipants	659	2,684	42.7	1,918	1,988	2,156	2,526	3,038	3,703	4,190
14 to 18 Years, Male ^c										
SBP participants	101	3,098	65.1	2,364 ^	2,472 ^	2,732	3,021	3,346	3,597 ^	3,941 ^
SBP nonparticipants	338	3,082	57.5	2,273 ^	2,332	2,605	2,946	3,425	4,043	4,369 ^
14 to 18 Years, Female ^c										
SBP participants	57	--	--	--	--	--	--	--	--	--
SBP nonparticipants	321	2,153	20.8	1,794 ^	1,893	1,996	2,128	2,253	2,397	2,611 ^
All Students										
SBP participants	472	2,358	35.3	1,726	1,771	1,939	2,149	2,708	3,224	3,523
SBP nonparticipants	1,571	2,338	25.2	1,740	1,810	1,964	2,171	2,598	3,076	3,451
All Students, Male										
SBP participants	274	2,625	52.1	1,806 ^	1,907	2,092	2,533	3,066	3,463	3,616 ^
SBP nonparticipants	790	2,558	35.3	1,794	1,872	2,101	2,413	2,887	3,362	3,795
All Students, Female										
SBP participants	198	2,028	27.4	1,698 ^	1,741 ^	1,840	1,984	2,148	2,382 ^	2,588 ^
SBP nonparticipants	781	2,049	14.0	1,687	1,758	1,890	2,030	2,193	2,322	2,452

	Estimated Energy Requirements (EERs) ^a (kcal)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	212	2,195	34.8	1,669 ^	1,744	1,881	2,041	2,395	2,974	3,271 ^
SBP nonparticipants	493	2,120	28.8	1,689	1,742	1,871	2,060	2,250	2,611	2,837
Elementary School Students, Male										
SBP participants	109	2,388	55.9	1,748 ^	1,827 ^	1,995	2,223	2,762	3,244 ^	3,371 ^
SBP nonparticipants	242	2,261	40.6	1,789 ^	1,850	1,957	2,135	2,435	2,836	3,119 ^
Elementary School Students, Female										
SBP participants	103	1,980	33.4	1,540 ^	1,713 ^	1,771	1,937	2,075	2,395 ^	2,620 ^
SBP nonparticipants	251	1,972	17.7	1,629 ^	1,697	1,810	1,964	2,109	2,245	2,292 ^
Middle School Students										
SBP participants	135	2,441	68.4	1,760 ^	1,822 ^	1,967	2,289	2,750	3,247 ^	3,616 ^
SBP nonparticipants	539	2,442	43.8	1,778	1,855	2,067	2,337	2,720	3,120	3,568
Middle School Students, Male										
SBP participants	87	2,727	105.7	1,819 ^	1,907 ^	2,270	2,660	3,063	3,583 ^	4,096 ^
SBP nonparticipants	275	2,680	61.3	1,790 ^	1,973	2,333	2,604	2,964	3,485	3,635 ^
Middle School Students, Female										
SBP participants	48	--	--	--	--	--	--	--	--	--
SBP nonparticipants	264	2,116	29.4	1,700 ^	1,818	1,916	2,112	2,260	2,451	2,634 ^
High School Students										
SBP participants	125	2,717	71.1	1,934 ^	2,030 ^	2,200	2,709	3,117	3,553 ^	3,604 ^
SBP nonparticipants	539	2,748	64.5	1,831	1,972	2,184	2,588	3,141	3,805	4,269
High School Students, Male										
SBP participants	78	3,093	57.8	2,447 ^	2,600 ^	2,763	2,982	3,352	3,586 ^	3,648 ^
SBP nonparticipants	273	3,144	66.6	2,305 ^	2,396	2,667	3,019	3,488	4,193	4,447 ^
High School Students, Female										
SBP participants	47	--	--	--	--	--	--	--	--	--
SBP nonparticipants	266	2,138	34.3	1,787 ^	1,796	1,964	2,118	2,255	2,414	2,671 ^

Source: School Nutrition and Meal Cost Study, Child/Youth Interview, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Note: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

^aEstimated Energy Requirements (EERs) were estimated based on age, gender, height, and weight, and assumed an “active” physical activity level for children ages 6 to 10 years and a “low active” level for children 11 years and older (IOM 2010). EER estimates exclude children who did not have valid data for height and/or weight.

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old.

EER = Estimated Energy Requirement; N = number (sample size); SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.7. Usual Daily Calorie (Energy) Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Calorie Intakes (kcal)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	119	1,879	53.9	1,343 ^	1,440 ^	1,627	1,851	2,101	2,354 ^	2,509 ^
SBP nonparticipants	240	1,874	43.4	1,231 ^	1,354	1,560	1,833	2,141	2,448	2,647 ^
9 to 13 Years										
SBP participants	220	2,041	51.0	1,460 ^	1,572	1,766	2,014	2,285	2,543	2,718 ^
SBP nonparticipants	719	1,923	66.0	1,170	1,306	1,558	1,875	2,230	2,598	2,835
9 to 13 Years, Male										
SBP participants	129	2,121	76.0	1,643 ^	1,736 ^	1,900	2,104	2,321	2,524 ^	2,675 ^
SBP nonparticipants	365	1,999	60.4	1,324 ^	1,448	1,681	1,966	2,276	2,591	2,784 ^
9 to 13 Years, Female										
SBP participants	91	1,933	101.1	1,501 ^	1,585 ^	1,736	1,913	2,110	2,308 ^	2,435 ^
SBP nonparticipants	354	1,825	98.0	1,028 ^	1,163	1,413	1,755	2,156	2,573	2,873 ^
14 to 18 Years ^b										
SBP participants	172	2,157	125.0	1,073 ^	1,245 ^	1,569	2,037	2,601	3,239 ^	3,668 ^
SBP nonparticipants	695	2,055	50.2	1,189	1,333	1,608	1,976	2,404	2,871	3,192
14 to 18 Years, Male ^b										
SBP participants	105	2,446	147.3	1,346 ^	1,533 ^	1,893	2,351	2,900	3,490 ^	3,862 ^
SBP nonparticipants	354	2,256	89.5	1,308 ^	1,473	1,774	2,173	2,649	3,138	3,483 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	1,779	52.9	1,111 ^	1,234	1,450	1,727	2,057	2,403	2,627 ^
All Students										
SBP participants	511	1,994	47.7	1,431	1,536	1,726	1,966	2,228	2,487	2,657
SBP nonparticipants	1,654	1,934	31.3	1,272	1,394	1,613	1,893	2,210	2,530	2,737
All Students, Male										
SBP participants	293	2,101	58.0	1,532 ^	1,639	1,831	2,075	2,340	2,600	2,765 ^
SBP nonparticipants	832	2,023	36.9	1,374	1,492	1,713	1,987	2,289	2,595	2,796
All Students, Female										
SBP participants	218	1,864	63.3	1,277 ^	1,389	1,589	1,833	2,106	2,380	2,563 ^
SBP nonparticipants	822	1,820	32.5	1,169	1,285	1,502	1,773	2,087	2,416	2,634

	Calorie Intakes (kcal)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	228	1,946	50.6	1,388 ^	1,493	1,681	1,920	2,178	2,434	2,596 ^
SBP nonparticipants	520	1,902	45.1	1,287	1,411	1,620	1,873	2,156	2,431	2,603
Elementary School Students, Male										
SBP participants	118	1,967	60.1	1,441 ^	1,540 ^	1,716	1,946	2,193	2,426 ^	2,566 ^
SBP nonparticipants	258	1,919	47.9	1,514 ^	1,602	1,747	1,911	2,084	2,252	2,351 ^
Elementary School Students, Female										
SBP participants	110	1,904	85.0	1,311 ^	1,425 ^	1,627	1,874	2,145	2,423 ^	2,606 ^
SBP nonparticipants	262	1,890	54.5	1,168 ^	1,298	1,541	1,846	2,189	2,538	2,768 ^
Middle School Students										
SBP participants	144	2,028	90.5	1,375 ^	1,492 ^	1,704	1,983	2,291	2,631 ^	2,857 ^
SBP nonparticipants	570	1,762	40.6	1,166	1,274	1,472	1,727	2,011	2,297	2,478
Middle School Students, Male										
SBP participants	92	2,195	156.9	1,426 ^	1,565 ^	1,821	2,137	2,513	2,886 ^	3,136 ^
SBP nonparticipants	291	1,903	45.4	1,403 ^	1,502	1,681	1,888	2,108	2,318	2,452 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	1,544	65.5	1,025 ^	1,114	1,286	1,504	1,753	2,024	2,194 ^
High School Students										
SBP participants	139	2,191	126.2	1,096 ^	1,293 ^	1,627	2,089	2,638	3,249 ^	3,632 ^
SBP nonparticipants	564	2,094	64.9	1,199	1,351	1,636	2,014	2,464	2,942	3,276
High School Students, Male										
SBP participants	83	2,466	176.0	1,444 ^	1,633 ^	1,973	2,406	2,900	3,401 ^	3,690 ^
SBP nonparticipants	283	2,291	106.6	1,350 ^	1,519	1,820	2,220	2,678	3,165	3,492 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	1,802	68.3	1,034 ^	1,164	1,427	1,743	2,114	2,499	2,771 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.8. Usual Daily Total Fat Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Total Fat										AMDR = 25–35% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years^a																
SBP participants	119	29.4	0.85	24.2 ^	25.4 ^	27.3	29.4	31.4	33.4 ^	34.6 ^	88.3 ^	10.24	8.1 ^	7.18	3.6 ^	4.34
SBP nonparticipants	240	30.1	0.50	24.3 ^	25.6	27.7	30.0	32.4	34.6	35.9 ^	84.7	9.17	7.2 ^	5.50	8.0 ^	4.49
9 to 13 Years																
SBP participants	220	31.6	0.48	27.2 ^	28.2	29.8	31.6	33.4	35.0	36.0 ^	89.2	12.93	<3	1.99	10.3	11.51
SBP nonparticipants	719	31.4	0.41	24.2	25.9	28.5	31.5	34.3	36.9	38.4	72.8	5.46	7.0	2.64	20.2	3.94
9 to 13 Years, Male																
SBP participants	129	31.2	0.58	27.2 ^	28.1 ^	29.6	31.3	32.9	34.3 ^	35.2 ^	93.6 ^	9.04	<3	1.65	5.9 ^	7.72
SBP nonparticipants	365	31.1	0.64	24.3 ^	25.8	28.3	31.2	33.9	36.5	37.9 ^	75.3	7.93	7.0	3.91	17.8	5.88
9 to 13 Years, Female																
SBP participants	91	32.0	0.66	26.3 ^	27.5 ^	29.7	32.0	34.4	36.6 ^	37.9 ^	78.2 ^	13.77	<3	3.31	19.6 ^	11.70
SBP nonparticipants	354	31.9	0.48	24.1 ^	25.9	28.8	32.0	35.0	37.7	39.4 ^	67.5	14.64	7.1	4.38	25.4	10.96
14 to 18 Years^b																
SBP participants	172	31.4	0.47	27.2 ^	28.2 ^	29.7	31.4	33.2	34.7 ^	35.7 ^	91.5 ^	7.41	<3	1.27	8.0 ^	6.60
SBP nonparticipants	695	32.2	0.42	24.5	26.2	29.0	32.2	35.2	38.0	39.7	67.1	6.74	6.2	2.53	26.7	5.11
14 to 18 Years, Male^b																
SBP participants	105	31.9	0.75	27.8 ^	28.6 ^	30.3	31.9	33.6	35.1 ^	35.9 ^	89.2 ^	11.56	<3	1.33	10.5 ^	10.87
SBP nonparticipants	354	31.4	0.46	23.3 ^	25.1	28.1	31.4	34.8	37.8	39.7 ^	67.0	5.36	9.4	2.34	23.6	4.41
14 to 18 Years, Female^b																
SBP participants	67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	33.0	0.66	26.8 ^	28.3	30.6	33.1	35.5	37.8	39.0 ^	68.8	22.39	<3	3.38	29.5	20.53
All Students																
SBP participants	511	30.8	0.41	26.1	27.1	28.9	30.8	32.7	34.4	35.5	90.9	8.64	<3	2.69	7.0	6.36
SBP nonparticipants	1,654	31.2	0.28	25.3	26.6	28.7	31.2	33.6	35.9	37.2	81.0	14.19	4.2	4.04	14.7	10.53
All Students, Male																
SBP participants	293	30.7	0.47	26.2 ^	27.2	28.8	30.7	32.5	34.1	35.1 ^	92.7	9.56	<3	3.30	5.4 ^	6.54
SBP nonparticipants	832	30.7	0.39	24.7	26.0	28.2	30.6	33.1	35.3	36.7	82.4	12.09	5.9	5.48	11.7	7.08
All Students, Female																
SBP participants	218	31.0	0.52	26.2 ^	27.2	29.0	31.0	33.0	34.8	35.9 ^	89.2	10.14	<3	3.44	8.6 ^	7.42
SBP nonparticipants	822	32.0	0.28	26.3	27.5	29.7	32.0	34.3	36.4	37.6	79.0	16.42	<3	2.73	18.7	14.13

Percentage of Calories from Total Fat											AMDR = 25–35% of calories					
Percentiles																
N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR						
By School Type and Gender																
Elementary School Students																
SBP participants	228	30.4	0.62	24.9 ^	26.2	28.2	30.4	32.7	34.7	35.9 ^	86.4	9.24	5.3 ^	4.13	8.3 ^	5.99
SBP nonparticipants	520	30.6	0.46	25.8	26.9	28.7	30.6	32.6	34.3	35.3	91.0	13.95	<3	6.30	6.4	8.14
Elementary School Students, Male																
SBP participants	118	30.2	0.68	24.2 ^	25.6 ^	27.8	30.2	32.6	34.8 ^	36.1 ^	83.4 ^	12.82	7.4 ^	6.49	9.2 ^	7.11
SBP nonparticipants	258	30.2	0.61	25.6 ^	26.6	28.3	30.1	32.0	33.8	34.9 ^	92.1	17.51	3.3 ^	8.83	4.6 ^	9.20
Elementary School Students, Female																
SBP participants	110	30.8	0.79	25.9 ^	27.1 ^	28.9	30.8	32.8	34.6 ^	35.6 ^	89.8 ^	9.48	<3	3.09	7.7 ^	7.49
SBP nonparticipants	260	31.2	0.42	25.3 ^	26.7	28.9	31.3	33.5	35.5	36.8 ^	82.6	15.89	4.1 ^	5.40	13.2	11.23
Middle School Students																
SBP participants	144	31.5	0.57	27.0 ^	28.0 ^	29.7	31.5	33.4	35.1 ^	36.1 ^	88.8 ^	8.66	<3	1.64	10.4 ^	7.71
SBP nonparticipants	570	31.2	0.53	26.0	27.1	29.1	31.2	33.4	35.3	36.5	85.5	11.46	<3	3.17	11.9	8.82
Middle School Students, Male																
SBP participants	92	31.0	0.79	26.8 ^	27.7 ^	29.3	31.0	32.7	34.2 ^	35.2 ^	93.7 ^	9.28	<3	2.44	5.5 ^	7.42
SBP nonparticipants	291	30.7	0.57	25.6 ^	26.6	28.5	30.7	32.8	34.8	36.1 ^	87.4	13.77	3.4 ^	5.53	9.2	8.97
Middle School Students, Female																
SBP participants	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	32.1	0.73	27.1 ^	28.2	30.1	32.1	34.2	35.9	37.0 ^	82.4	12.20	<3	2.05	16.7	11.30
High School Students																
SBP participants	139	31.3	0.58	26.7 ^	27.8 ^	29.4	31.3	33.2	35.0 ^	36.0 ^	89.0 ^	14.23	<3	4.08	9.9 ^	11.15
SBP nonparticipants	564	32.4	0.48	24.7	26.5	29.3	32.5	35.6	38.3	40.0	65.4	5.51	5.6	2.36	29.0	4.57
High School Students, Male																
SBP participants	83	31.9	0.92	27.7 ^	28.5 ^	30.2	31.9	33.6	35.2 ^	36.1 ^	87.9 ^	13.11	<3	1.54	11.8 ^	12.45
SBP nonparticipants	283	32.1	0.56	23.9 ^	25.8	28.8	32.1	35.4	38.3	40.1 ^	65.4	5.24	7.2	2.14	27.4	4.76
High School Students, Female																
SBP participants	56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	32.9	0.82	26.3 ^	27.8	30.4	33.0	35.6	37.8	39.2 ^	67.8	19.18	<3	3.50	29.7	17.14

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of acceptable usual daily intakes, the AMDR for males and females 19 to 30 years was used for these students (20 to 35 percent of calories for both groups).

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.9. Usual Daily Total Fat Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Total Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	119	62	3.3	45 ^	49 ^	54	61	69	76 ^	81 ^
SBP nonparticipants	240	64	1.7	38 ^	43	51	62	75	88	97 ^
9 to 13 Years										
SBP participants	220	73	2.3	51 ^	55	63	72	82	92	99 ^
SBP nonparticipants	719	69	2.8	36	42	52	66	82	99	110
9 to 13 Years, Male										
SBP participants	129	75	2.9	54 ^	58 ^	65	74	83	92 ^	99 ^
SBP nonparticipants	365	71	2.8	41 ^	46	56	69	83	97	106 ^
9 to 13 Years, Female										
SBP participants	91	70	4.7	45 ^	49 ^	58	68	80	93 ^	102 ^
SBP nonparticipants	354	67	3.9	31 ^	37	48	63	82	101	115 ^
14 to 18 Years ^b										
SBP participants	172	77	5.1	38 ^	44 ^	55	72	92	116 ^	132 ^
SBP nonparticipants	695	75	2.0	38	44	56	72	90	110	124
14 to 18 Years, Male ^b										
SBP participants	105	89	6.6	45 ^	52 ^	66	84	107	133 ^	149 ^
SBP nonparticipants	354	82	3.6	40 ^	46	59	77	99	123	140 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	66	2.1	40 ^	45	54	65	77	90	98 ^
All Students										
SBP participants	511	70	2.2	48	52	59	69	79	89	96
SBP nonparticipants	1,654	69	1.3	41	46	55	67	81	94	104
All Students, Male										
SBP participants	293	73	2.7	51 ^	55	62	72	83	93	100 ^
SBP nonparticipants	832	71	1.7	44	48	58	69	82	95	104
All Students, Female										
SBP participants	218	65	2.9	42 ^	47	54	64	75	86	94 ^
SBP nonparticipants	822	66	1.3	37	42	52	64	78	93	103

	Total Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	228	67	2.8	46 ^	50	57	66	76	86	92 ^
SBP nonparticipants	520	66	2.0	40	45	54	65	77	90	97
Elementary School Students, Male										
SBP participants	118	67	3.0	47 ^	51 ^	57	66	76	85 ^	91 ^
SBP nonparticipants	258	66	2.3	48 ^	52	58	65	73	80	85 ^
Elementary School Students, Female										
SBP participants	110	66	4.3	43 ^	48 ^	55	65	76	87 ^	95 ^
SBP nonparticipants	262	67	2.3	35 ^	41	51	65	81	97	108 ^
Middle School Students										
SBP participants	144	72	2.8	50 ^	54 ^	61	71	82	92 ^	99 ^
SBP nonparticipants	570	62	1.8	44	47	53	61	70	78	83
Middle School Students, Male										
SBP participants	88	75	5.6	50 ^	55 ^	63	73	85	97 ^	105 ^
SBP nonparticipants	291	66	2.4	43 ^	47	55	65	76	87	94 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	55	2.8	33 ^	37	44	53	64	76	84 ^
High School Students										
SBP participants	139	78	5.6	36 ^	43 ^	55	72	95	121 ^	138 ^
SBP nonparticipants	564	77	2.8	38	44	57	73	94	116	131
High School Students, Male										
SBP participants	83	90	8.0	47 ^	54 ^	68	86	108	131 ^	145 ^
SBP nonparticipants	283	85	4.5	42 ^	49	62	80	102	126	143 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	67	3.0	33 ^	39	51	65	81	97	109 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.10. Usual Daily Saturated Fat Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Saturated Fat										DGA = < 10% of calories	
	Percentiles											
	N	Mean	SE	5	10	25	50	75	90	95	% Above DGA	SE
By Age/Gender Groups												
6 to 8 Years ^a												
SBP participants	119	9.8	0.42	7.1 ^	7.6 ^	8.6	9.8	11.0	12.2 ^	12.9 ^	44.4	10.35
SBP nonparticipants	237	10.3	0.25	7.2 ^	7.8	8.9	10.2	11.6	12.8	13.7 ^	54.8	5.44
9 to 13 Years												
SBP participants	220	10.7	0.27	8.4 ^	8.9	9.7	10.6	11.6	12.5	13.1 ^	66.6	14.15
SBP nonparticipants	719	10.4	0.22	7.5	8.1	9.2	10.4	11.6	12.7	13.4	59.0	5.58
9 to 13 Years, Male												
SBP participants	129	10.3	0.41	7.9 ^	8.4 ^	9.3	10.3	11.3	12.3 ^	12.9 ^	57.1	22.97
SBP nonparticipants	365	10.4	0.28	7.7 ^	8.3	9.3	10.4	11.5	12.6	13.2 ^	59.3	12.25
9 to 13 Years, Female												
SBP participants	91	11.0	0.33	8.7 ^	9.2 ^	10.0	11.0	12.0	12.9 ^	13.5 ^	75.1	12.67
SBP nonparticipants	354	10.5	0.26	7.2 ^	7.9	9.1	10.4	11.8	13.0	13.8 ^	58.3	6.09
14 to 18 Years ^b												
SBP participants	172	10.7	0.21	8.3 ^	8.8 ^	9.6	10.6	11.6	12.6 ^	13.2 ^	65.8	19.70
SBP nonparticipants	695	10.6	0.19	7.5	8.1	9.3	10.6	11.9	13.2	14.0	61.9	9.98
14 to 18 Years, Male ^b												
SBP participants	105	11.0	0.42	9.1 ^	9.5 ^	10.2	11.0	11.8	12.6 ^	13.1 ^	80.2	19.56
SBP nonparticipants	354	10.7	0.24	7.0 ^	7.7	9.0	10.6	12.3	13.9	14.9 ^	59.8	5.06
14 to 18 Years, Female ^b												
SBP participants	67	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	10.5	0.26	8.3 ^	8.8	9.6	10.5	11.4	12.3	12.8 ^	63.8	23.65
All Students												
SBP participants	511	10.4	0.22	7.9	8.4	9.3	10.3	11.4	12.4	13.1	57.7	5.13
SBP nonparticipants	1,654	10.5	0.14	8.3	8.8	9.6	10.4	11.4	12.2	12.7	62.9	18.03
All Students, Male												
SBP participants	293	10.3	0.28	7.0 ^	7.7	8.9	10.2	11.7	13.0	13.9 ^	54.7	5.42
SBP nonparticipants	832	10.4	0.17	8.2	8.7	9.5	10.4	11.3	12.2	12.8	60.7	21.82
All Students, Female												
SBP participants	218	10.5	0.23	8.0 ^	8.5	9.4	10.4	11.5	12.5	13.2 ^	60.0	10.55
SBP nonparticipants	819	10.5	0.17	8.3	8.8	9.6	10.5	11.4	12.2	12.7	64.8	22.21

	Percentage of Calories from Saturated Fat										DGA = < 10% of calories	
	N	Mean	SE	Percentiles							% Above DGA	SE
				5	10	25	50	75	90	95		
By School Type and Gender												
Elementary School Students												
SBP participants	228	10.1	0.30	7.4 ^	7.9	8.9	10.0	11.3	12.4	13.2 ^	50.7	6.69
SBP nonparticipants	513	10.4	0.27	7.3	7.9	9.0	10.3	11.6	12.9	13.6	56.0	5.77
Elementary School Students, Male												
SBP participants	118	10.1	0.34	6.3 ^	7.0 ^	8.3	9.9	11.6	13.3 ^	14.4 ^	48.0	6.21
SBP nonparticipants	258	10.2	0.30	7.2 ^	7.8	8.8	10.1	11.4	12.6	13.4 ^	52.3	6.63
Elementary School Students, Female												
SBP participants	110	10.3	0.38	8.0 ^	8.5 ^	9.3	10.3	11.2	12.2 ^	12.8 ^	57.2	16.29
SBP nonparticipants	262	10.5	0.33	8.2 ^	8.7	9.6	10.5	11.5	12.4	12.9 ^	64.3	24.73
Middle School Students												
SBP participants	144	10.8	0.35	8.4 ^	8.9 ^	9.8	10.8	11.9	12.8 ^	13.5 ^	69.6	11.57
SBP nonparticipants	570	10.3	0.23	7.9	8.4	9.2	10.2	11.3	12.3	12.8	56.1	11.31
Middle School Students, Male												
SBP participants	92	10.1	0.40	7.0 ^	7.6 ^	8.8	10.1	11.4	12.7 ^	13.5 ^	51.4	7.98
SBP nonparticipants	291	10.3	0.24	7.2 ^	7.8	8.9	10.2	11.6	13.0	13.8 ^	54.8	5.69
Middle School Students, Female												
SBP participants	52	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	10.2	0.30	8.1 ^	8.5	9.3	10.2	11.0	11.9	12.4 ^	55.2	25.93
High School Students												
SBP participants	139	10.6	0.28	8.2 ^	8.7 ^	9.6	10.6	11.6	12.6 ^	13.3 ^	65.3	11.25
SBP nonparticipants	564	10.7	0.20	7.0	7.8	9.1	10.6	12.2	13.6	14.5	60.3	4.48
High School Students, Male												
SBP participants	83	11.2	0.48	9.3 ^	9.7 ^	10.4	11.2	12.0	12.8 ^	13.2 ^	84.4 ^	16.27
SBP nonparticipants	283	10.9	0.27	6.6 ^	7.5	9.0	10.8	12.7	14.5	15.6 ^	61.8	4.29
High School Students, Female												
SBP participants	56	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	10.3	0.30	8.2 ^	8.6	9.4	10.3	11.2	12.0	12.5 ^	58.6	25.39

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DGA = 2010 *Dietary Guidelines for Americans*; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.11. Usual Daily Saturated Fat Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Saturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	119	21	1.4	14 ^	15 ^	17	20	23	27 ^	29 ^
SBP nonparticipants	240	22	0.7	12 ^	14	17	22	26	31	34 ^
9 to 13 Years										
SBP participants	220	25	1.0	17 ^	18	21	24	28	32	35 ^
SBP nonparticipants	719	23	1.0	11	13	17	22	28	34	38
9 to 13 Years, Male										
SBP participants	129	25	1.1	16 ^	18 ^	20	24	28	32 ^	35 ^
SBP nonparticipants	365	24	1.0	13 ^	15	19	23	28	33	36 ^
9 to 13 Years, Female										
SBP participants	91	24	1.3	17 ^	18 ^	21	24	28	31 ^	34 ^
SBP nonparticipants	354	22	1.4	8 ^	11	15	21	28	35	41 ^
14 to 18 Years ^b										
SBP participants	172	26	2.0	13 ^	15 ^	19	24	32	40 ^	46 ^
SBP nonparticipants	695	25	0.8	12	14	18	24	30	37	42
14 to 18 Years, Male ^b										
SBP participants	105	31	2.9	14 ^	17 ^	22	29	38	49 ^	56 ^
SBP nonparticipants	354	28	1.5	13 ^	15	20	26	34	42	48 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	22	0.8	13 ^	15	18	21	25	29	32 ^
All Students										
SBP participants	511	24	0.9	15	17	19	23	27	31	34
SBP nonparticipants	1,654	23	0.5	13	15	18	22	27	33	36
All Students, Male										
SBP participants	293	25	1.2	16 ^	17	20	24	28	33	36 ^
SBP nonparticipants	832	24	0.6	15	16	20	23	28	32	35
All Students, Female										
SBP participants	218	22	1.0	15 ^	16	19	22	25	29	31 ^
SBP nonparticipants	822	22	0.6	11	13	16	21	27	32	36

	Saturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	227	22	1.2	15 ^	17	19	22	25	28	30 ^
SBP nonparticipants	520	23	0.8	13	15	18	22	26	31	33
Elementary School Students, Male										
SBP participants	118	22	1.2	15 ^	17 ^	19	22	25	28 ^	30 ^
SBP nonparticipants	258	23	0.8	15 ^	17	19	23	26	30	32 ^
Elementary School Students, Female										
SBP participants	109	22	1.8	16 ^	17 ^	19	22	25	28 ^	30 ^
SBP nonparticipants	262	23	1.1	10 ^	12	16	22	28	34	39 ^
Middle School Students										
SBP participants	144	25	1.1	16 ^	18 ^	21	24	28	33 ^	35 ^
SBP nonparticipants	570	20	0.7	14	15	17	20	23	27	29
Middle School Students, Male										
SBP participants	92	25	1.8	17 ^	18 ^	21	24	29	32 ^	35 ^
SBP nonparticipants	291	22	0.9	15 ^	16	19	22	25	28	31 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	18	0.9	11 ^	13	15	17	20	23	25 ^
High School Students										
SBP participants	139	27	2.2	12 ^	14 ^	18	25	33	42 ^	49 ^
SBP nonparticipants	564	26	1.0	12	14	18	24	31	39	45
High School Students, Male										
SBP participants	83	32	3.4	15 ^	18 ^	23	30	39	48 ^	54 ^
SBP nonparticipants	283	28	1.7	13 ^	16	20	27	35	43	49 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	21	1.0	10 ^	12	16	21	26	32	35 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.12. Usual Daily Monounsaturated Fat Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Monounsaturated Fat Intakes (% of calories)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	116	10.1	0.35	7.9 ^	8.4 ^	9.1	10.0	10.9	11.8 ^	12.3 ^
SBP nonparticipants	240	10.3	0.20	8.1 ^	8.6	9.3	10.3	11.2	12.1	12.6 ^
9 to 13 Years										
SBP participants	218	10.8	0.16	8.6 ^	9.1	9.9	10.8	11.8	12.7	13.3 ^
SBP nonparticipants	719	10.9	0.19	8.1	8.7	9.7	10.8	12.0	13.1	13.8
9 to 13 Years, Male										
SBP participants	128	10.9	0.20	8.7 ^	9.2 ^	9.9	10.9	11.8	12.7 ^	13.3 ^
SBP nonparticipants	365	10.8	0.29	8.0 ^	8.6	9.6	10.7	11.9	13.1	13.8 ^
9 to 13 Years, Female										
SBP participants	91	10.9	0.27	8.8 ^	9.2 ^	10.0	10.8	11.8	12.7 ^	13.3 ^
SBP nonparticipants	354	11.0	0.19	8.2 ^	8.8	9.8	10.9	12.1	13.2	13.9 ^
14 to 18 Years ^b										
SBP participants	171	10.9	0.22	8.6 ^	9.1 ^	9.9	10.8	11.8	12.7 ^	13.2 ^
SBP nonparticipants	695	11.0	0.18	8.1	8.7	9.8	11.0	12.2	13.4	14.2
14 to 18 Years, Male ^b										
SBP participants	105	10.9	0.20	8.7 ^	9.2 ^	10.0	10.9	11.9	12.7 ^	13.3 ^
SBP nonparticipants	354	10.8	0.19	8.0 ^	8.6	9.5	10.7	11.9	13.0	13.8 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	11.3	0.30	8.4 ^	9.1	10.1	11.3	12.5	13.7	14.4 ^
All Students										
SBP participants	508	10.6	0.18	8.8	9.2	9.8	10.6	11.3	12.0	12.4
SBP nonparticipants	1,654	10.7	0.11	8.4	8.9	9.7	10.7	11.7	12.6	13.2
All Students, Male										
SBP participants	291	10.6	0.19	8.8 ^	9.2	9.9	10.6	11.4	12.1	12.5 ^
SBP nonparticipants	832	10.6	0.16	8.3	8.8	9.6	10.5	11.5	12.4	13.0
All Students, Female										
SBP participants	218	10.6	0.22	8.7 ^	9.1	9.8	10.6	11.4	12.2	12.7 ^
SBP nonparticipants	822	11.0	0.12	8.7	9.2	10.0	10.9	11.9	12.8	13.4

	Monounsaturated Fat Intakes (% of calories)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	226	10.5	0.27	8.7 ^	9.1	9.7	10.5	11.2	11.8	12.3 ^
SBP nonparticipants	520	10.5	0.16	8.5	9.0	9.7	10.5	11.4	12.1	12.6
Elementary School Students, Male										
SBP participants	117	10.5	0.32	8.7 ^	9.1 ^	9.7	10.5	11.2	11.9 ^	12.3 ^
SBP nonparticipants	258	10.4	0.25	8.4 ^	8.9	9.6	10.4	11.2	12.0	12.4 ^
Elementary School Students, Female										
SBP participants	110	10.6	0.29	8.7 ^	9.1 ^	9.8	10.6	11.4	12.2 ^	12.7 ^
SBP nonparticipants	262	10.7	0.18	8.8 ^	9.2	9.9	10.7	11.6	12.3	12.8 ^
Middle School Students										
SBP participants	143	10.8	0.23	9.0 ^	9.4 ^	10.0	10.7	11.5	12.2 ^	12.6 ^
SBP nonparticipants	565	10.7	0.16	8.8	9.2	9.9	10.7	11.5	12.4	12.9
Middle School Students, Male										
SBP participants	91	10.6	0.31	8.9 ^	9.2 ^	9.8	10.6	11.4	12.1 ^	12.5 ^
SBP nonparticipants	289	10.6	0.23	8.2 ^	8.6	9.5	10.5	11.6	12.8	13.5 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	11.0	0.20	8.8 ^	9.2	10.0	10.9	11.9	12.7	13.2 ^
High School Students										
SBP participants	139	10.7	0.21	9.0 ^	9.4 ^	10.0	10.7	11.4	12.1 ^	12.5 ^
SBP nonparticipants	564	11.1	0.20	8.2	8.8	9.9	11.1	12.3	13.5	14.3
High School Students, Male										
SBP participants	83	10.9	0.29	9.2 ^	9.6 ^	10.2	10.9	11.6	12.3 ^	12.7 ^
SBP nonparticipants	283	11.0	0.25	8.3 ^	8.9	9.8	10.9	12.0	13.1	13.8 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	11.4	0.33	8.2 ^	8.8	10.0	11.3	12.6	13.9	14.7 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.13. Usual Daily Monounsaturated Fat Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Monounsaturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	119	21	1.2	15 ^	16 ^	18	21	24	27 ^	29 ^
SBP nonparticipants	240	22	0.7	13 ^	15	18	21	26	31	34 ^
9 to 13 Years										
SBP participants	220	25	0.8	18 ^	19	22	25	28	32	34 ^
SBP nonparticipants	719	24	1.0	12	14	18	23	29	35	39
9 to 13 Years, Male										
SBP participants	127	27	1.1	18 ^	20 ^	22	26	30	34 ^	37 ^
SBP nonparticipants	365	25	1.1	14 ^	16	19	24	29	34	38 ^
9 to 13 Years, Female										
SBP participants	91	24	1.8	15 ^	17 ^	20	23	28	32 ^	35 ^
SBP nonparticipants	354	23	1.5	10 ^	12	16	22	28	35	40 ^
14 to 18 Years ^b										
SBP participants	172	26	1.8	13 ^	15 ^	19	25	32	40 ^	46 ^
SBP nonparticipants	695	26	0.7	13	15	19	25	31	39	44
14 to 18 Years, Male ^b										
SBP participants	105	30	2.2	16 ^	18 ^	23	29	36	44 ^	50 ^
SBP nonparticipants	354	28	1.2	14 ^	16	20	26	34	42	48 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	23	0.7	13 ^	14	18	22	27	32	36 ^
All Students										
SBP participants	511	24	0.9	17	18	21	24	27	30	33
SBP nonparticipants	1,654	24	0.5	14	16	19	23	28	33	36
All Students, Male										
SBP participants	293	25	1.0	18 ^	19	22	25	29	32	34 ^
SBP nonparticipants	832	25	0.6	15	17	20	24	28	33	36
All Students, Female										
SBP participants	218	23	1.2	14 ^	16	18	22	26	30	33 ^
SBP nonparticipants	822	23	0.5	12	14	17	22	27	33	36

	Monounsaturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	228	23	1.1	16 ^	18	20	23	26	30	32 ^
SBP nonparticipants	520	23	0.7	14	15	19	22	27	31	34
Elementary School Students, Male										
SBP participants	117	24	1.2	16 ^	17 ^	20	23	27	30 ^	33 ^
SBP nonparticipants	258	23	0.9	15 ^	16	19	23	26	30	33 ^
Elementary School Students, Female										
SBP participants	110	23	1.6	14 ^	16 ^	19	22	26	31 ^	34 ^
SBP nonparticipants	262	23	0.8	12 ^	14	17	22	28	34	38 ^
Middle School Students										
SBP participants	143	25	1.3	17 ^	18 ^	21	24	28	31 ^	34 ^
SBP nonparticipants	570	21	0.6	14	16	18	21	24	28	30
Middle School Students, Male										
SBP participants	89	26	1.7	18 ^	19 ^	22	26	30	34 ^	37 ^
SBP nonparticipants	291	23	0.8	15 ^	16	19	23	26	30	33 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	19	1.1	11 ^	12	15	18	22	26	29 ^
High School Students										
SBP participants	139	27	1.9	12 ^	15 ^	19	25	32	41 ^	47 ^
SBP nonparticipants	564	27	1.0	13	15	19	25	32	40	46
High School Students, Male										
SBP participants	83	31	2.7	17 ^	19 ^	24	29	36	44 ^	48 ^
SBP nonparticipants	283	29	1.6	15 ^	17	21	27	35	43	49 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	23	0.9	11 ^	13	17	22	28	34	39 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.14. Usual Daily Polyunsaturated Fat Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Polyunsaturated Fat Intakes (% of calories)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	119	7.3	0.34	5.3 ^	5.7 ^	6.4	7.2	8.1	9.1 ^	9.7 ^
SBP nonparticipants	240	7.0	0.19	5.3 ^	5.6	6.3	7.0	7.7	8.5	9.0 ^
9 to 13 Years										
SBP participants	220	7.7	0.17	6.0 ^	6.3	6.9	7.6	8.4	9.1	9.5 ^
SBP nonparticipants	719	7.7	0.16	5.4	5.9	6.7	7.6	8.7	9.7	10.4
9 to 13 Years, Male										
SBP participants	129	7.7	0.27	5.4 ^	5.8 ^	6.6	7.6	8.7	9.7 ^	10.5 ^
SBP nonparticipants	365	7.6	0.21	5.1 ^	5.5	6.4	7.4	8.6	9.9	10.7 ^
9 to 13 Years, Female										
SBP participants	91	7.7	0.27	5.8 ^	6.2 ^	6.8	7.6	8.4	9.2 ^	9.8 ^
SBP nonparticipants	354	7.9	0.21	6.3 ^	6.6	7.2	7.9	8.6	9.3	9.7 ^
14 to 18 Years ^b										
SBP participants	172	7.6	0.26	5.9 ^	6.2 ^	6.8	7.5	8.3	9.1 ^	9.6 ^
SBP nonparticipants	695	7.9	0.19	5.9	6.3	6.9	7.8	8.7	9.5	10.1
14 to 18 Years, Male ^b										
SBP participants	105	7.5	0.45	5.7 ^	6.0 ^	6.7	7.4	8.2	9.0 ^	9.5 ^
SBP nonparticipants	354	7.3	0.18	5.1 ^	5.6	6.3	7.2	8.3	9.3	10.0 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	339	8.3	0.33	6.2 ^	6.6	7.3	8.2	9.1	10.0	10.6 ^
All Students										
SBP participants	511	7.5	0.13	5.7	6.0	6.7	7.4	8.3	9.1	9.6
SBP nonparticipants	1,654	7.5	0.12	5.4	5.8	6.5	7.4	8.4	9.4	10.0
All Students, Male										
SBP participants	293	7.5	0.20	5.7 ^	6.0	6.6	7.4	8.2	9.0	9.5 ^
SBP nonparticipants	832	7.3	0.14	5.0	5.4	6.2	7.2	8.2	9.2	9.9
All Students, Female										
SBP participants	218	7.6	0.18	5.7 ^	6.1	6.7	7.5	8.4	9.2	9.7 ^
SBP nonparticipants	820	7.9	0.20	5.9	6.3	7.0	7.8	8.7	9.6	10.2

	Polyunsaturated Fat Intakes (% of calories)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	228	7.5	0.20	5.5 ^	5.9	6.6	7.4	8.3	9.2	9.8 ^
SBP nonparticipants	520	7.3	0.15	5.2	5.6	6.3	7.2	8.1	9.0	9.6
Elementary School Students, Male										
SBP participants	118	7.4	0.23	5.5 ^	5.9 ^	6.6	7.3	8.2	9.0 ^	9.5 ^
SBP nonparticipants	258	7.1	0.22	4.9 ^	5.3	6.1	7.0	8.0	9.0	9.7 ^
Elementary School Students, Female										
SBP participants	110	7.7	0.31	5.5 ^	5.9 ^	6.7	7.6	8.5	9.5 ^	10.1 ^
SBP nonparticipants	262	7.5	0.23	5.7 ^	6.1	6.7	7.4	8.2	8.9	9.4 ^
Middle School Students										
SBP participants	144	7.4	0.25	5.6 ^	6.0 ^	6.6	7.4	8.2	9.0 ^	9.6 ^
SBP nonparticipants	568	8.0	0.24	6.1	6.4	7.1	7.9	8.7	9.6	10.1
Middle School Students, Male										
SBP participants	92	7.8	0.28	6.0 ^	6.3 ^	6.9	7.7	8.5	9.3 ^	9.9 ^
SBP nonparticipants	291	7.6	0.17	5.8 ^	6.2	6.8	7.5	8.3	9.0	9.5 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	8.4	0.41	6.3 ^	6.7	7.5	8.4	9.3	10.2	10.8 ^
High School Students										
SBP participants	139	7.6	0.33	5.7 ^	6.1 ^	6.7	7.5	8.4	9.3 ^	9.9 ^
SBP nonparticipants	564	8.0	0.25	5.7	6.2	6.9	7.9	8.9	9.9	10.6
High School Students, Male										
SBP participants	83	7.3	0.51	5.6 ^	5.9 ^	6.5	7.2	8.0	8.9 ^	9.3 ^
SBP nonparticipants	283	7.5	0.24	5.1 ^	5.6	6.4	7.4	8.5	9.7	10.5 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	8.4	0.42	6.3 ^	6.7	7.4	8.3	9.3	10.2	10.8 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.15. Usual Daily Polyunsaturated Fat Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Polyunsaturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	119	15	0.9	10 ^	11 ^	12	15	18	21 ^	23 ^
SBP nonparticipants	240	15	0.5	8 ^	10	12	14	18	21	23 ^
9 to 13 Years										
SBP participants	220	18	0.6	11 ^	12	14	17	20	24	26 ^
SBP nonparticipants	719	17	0.7	9	10	13	16	20	24	27
9 to 13 Years, Male										
SBP participants	129	18	1.0	11 ^	13 ^	15	18	21	25 ^	27 ^
SBP nonparticipants	365	17	0.8	9 ^	10	13	16	20	25	28 ^
9 to 13 Years, Female										
SBP participants	91	17	0.9	10 ^	12 ^	14	16	19	22 ^	24 ^
SBP nonparticipants	354	16	0.9	9 ^	11	13	16	19	23	26 ^
14 to 18 Years ^b										
SBP participants	172	18	1.2	8 ^	10 ^	13	17	22	28 ^	33 ^
SBP nonparticipants	695	18	0.6	9	10	13	17	22	28	31
14 to 18 Years, Male ^b										
SBP participants	105	21	1.7	10 ^	11 ^	15	19	25	32 ^	36 ^
SBP nonparticipants	354	19	0.8	8 ^	10	13	17	23	30	35 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	17	0.8	10 ^	11	13	16	20	23	26 ^
All Students										
SBP participants	511	17	0.5	10	12	14	16	19	23	25
SBP nonparticipants	1,654	16	0.3	9	10	13	16	19	23	26
All Students, Male										
SBP participants	293	18	0.7	11 ^	12	15	17	20	24	26 ^
SBP nonparticipants	832	17	0.4	9	10	13	16	20	24	27
All Students, Female										
SBP participants	218	16	0.7	10 ^	11	13	15	18	21	23 ^
SBP nonparticipants	822	16	0.5	10	11	13	16	19	22	24

	Polyunsaturated Fat Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	228	16	0.5	11 ^	12	14	16	18	21	22 ^
SBP nonparticipants	520	16	0.5	9	10	12	15	18	22	24
Elementary School Students, Male										
SBP participants	118	17	0.7	10 ^	11 ^	13	16	19	22 ^	24 ^
SBP nonparticipants	258	15	0.7	9 ^	10	12	15	18	21	23 ^
Elementary School Students, Female										
SBP participants	110	16	1.0	10 ^	11 ^	13	16	19	22 ^	24 ^
SBP nonparticipants	262	16	0.6	9 ^	11	13	16	19	23	25 ^
Middle School Students										
SBP participants	144	17	1.0	12 ^	13 ^	15	17	19	22 ^	23 ^
SBP nonparticipants	570	16	0.5	10	11	13	15	18	21	22
Middle School Students, Male										
SBP participants	92	19	1.8	12 ^	13 ^	16	19	22	26 ^	28 ^
SBP nonparticipants	291	16	0.7	9 ^	10	12	16	19	23	26 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	14	0.8	7 ^	8	11	14	17	21	24 ^
High School Students										
SBP participants	139	18	1.3	8 ^	10 ^	13	17	22	29 ^	33 ^
SBP nonparticipants	564	19	0.8	9	10	13	18	23	29	34
High School Students, Male										
SBP participants	83	20	1.9	10 ^	11 ^	15	19	25	31 ^	35 ^
SBP nonparticipants	283	20	1.1	9 ^	10	14	18	24	32	37 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	17	1.1	9 ^	10	13	17	21	25	29 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.16. Usual Daily Linoleic Acid Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Linoleic Acid										AMDR = 5-10% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years^a																
SBP participants	119	6.5	0.28	4.8 ^	5.1 ^	5.7	6.4	7.1	7.9 ^	8.4 ^	91.8 ^	9.03	7.8 ^	8.27	<3	1.39
SBP nonparticipants	240	6.3	0.18	4.6 ^	4.9	5.5	6.2	7.0	7.7	8.2 ^	88.1	6.68	11.7	6.30	<3	0.67
9 to 13 Years																
SBP participants	220	6.8	0.16	5.2 ^	5.5	6.1	6.8	7.5	8.2	8.7 ^	96.6 ^	3.89	<3	2.99	<3	1.12
SBP nonparticipants	719	6.9	0.16	4.8	5.2	5.9	6.8	7.8	8.8	9.4	89.8	5.42	7.7	4.00	<3	1.84
9 to 13 Years, Male																
SBP participants	129	6.8	0.25	4.8 ^	5.2 ^	5.9	6.7	7.7	8.6 ^	9.2 ^	90.3 ^	7.10	7.5 ^	5.27	<3	2.24
SBP nonparticipants	365	6.8	0.21	4.4 ^	4.8	5.6	6.6	7.8	9.0	9.7 ^	83.2	6.86	12.7	4.98	4.1 ^	2.71
9 to 13 Years, Female																
SBP participants	91	6.9	0.25	5.1 ^	5.5 ^	6.1	6.8	7.6	8.3 ^	8.8 ^	95.5 ^	5.65	4.0 ^	4.21	<3	1.84
SBP nonparticipants	354	7.1	0.19	5.5 ^	5.9	6.4	7.0	7.7	8.3	8.7 ^	>97	5.43	<3	3.92	<3	1.68
14 to 18 Years^b																
SBP participants	172	6.8	0.24	5.0 ^	5.4 ^	5.9	6.7	7.5	8.4 ^	8.9 ^	94.1 ^	7.81	4.7 ^	6.27	<3	1.93
SBP nonparticipants	695	7.0	0.17	5.1	5.5	6.2	7.0	7.8	8.7	9.2	94.4	7.07	3.8	4.61	<3	2.61
14 to 18 Years, Male^b																
SBP participants	105	6.6	0.41	5.2 ^	5.4 ^	6.0	6.6	7.3	7.9 ^	8.3 ^	96.8 ^	6.84	3.1 ^	6.26	<3	1.29
SBP nonparticipants	354	6.5	0.16	4.5 ^	4.9	5.6	6.4	7.4	8.3	8.9 ^	87.2	6.63	11.6	5.43	<3	1.52
14 to 18 Years, Female^b																
SBP participants	67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	7.5	0.31	5.4 ^	5.7	6.5	7.4	8.3	9.3	9.9 ^	93.4	4.20	<3	1.92	4.2 ^	3.44
All Students																
SBP participants	511	6.7	0.11	5.1	5.4	5.9	6.6	7.4	8.1	8.6	95.4	4.86	4.2	4.17	<3	0.79
SBP nonparticipants	1,654	6.7	0.11	4.7	5.1	5.8	6.6	7.6	8.5	9.1	90.2	3.92	8.3	2.90	1.5	1.23
All Students, Male																
SBP participants	293	6.6	0.17	5.2 ^	5.4	6.0	6.6	7.2	7.9	8.3 ^	96.8 ^	6.27	3.1 ^	5.54	<3	0.89
SBP nonparticipants	832	6.5	0.13	4.4	4.8	5.5	6.4	7.4	8.3	9.0	84.9	4.75	13.7	3.89	<3	1.17
All Students, Female																
SBP participants	218	6.8	0.16	5.0 ^	5.4	6.0	6.7	7.5	8.3	8.8 ^	94.5 ^	6.51	4.8 ^	4.99	<3	1.81
SBP nonparticipants	822	7.1	0.19	5.4	5.7	6.3	7.0	7.8	8.5	9.0	97.2	6.32	<3	3.97	<3	2.49

Percentage of Calories from Linoleic Acid											AMDR = 5-10% of calories					
Percentiles																
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By School Type and Gender																
Elementary School Students																
SBP participants	228	6.7	0.17	5.0 ^	5.3	5.9	6.6	7.4	8.1	8.6 ^	94.2 ^	6.21	5.4 ^	5.48	<3	0.98
SBP nonparticipants	520	6.5	0.15	4.5	4.9	5.6	6.4	7.3	8.1	8.7	88.1	4.98	11.2	4.23	<3	1.04
Elementary School Students, Male																
SBP participants	118	6.6	0.20	5.1 ^	5.4 ^	5.9	6.5	7.2	7.8 ^	8.2 ^	95.8 ^	7.80	4.0 ^	7.14	<3	0.79
SBP nonparticipants	258	6.3	0.20	4.2 ^	4.6	5.4	6.2	7.2	8.2	8.8 ^	82.3	5.44	16.5	4.65	<3	1.36
Elementary School Students, Female																
SBP participants	110	6.8	0.28	4.9 ^	5.3 ^	6.0	6.7	7.6	8.5 ^	9.1 ^	92.4 ^	9.10	6.3 ^	6.94	<3	2.97
SBP nonparticipants	262	6.7	0.21	5.0 ^	5.4	5.9	6.6	7.3	8.0	8.4 ^	95.2 ^	7.61	4.6 ^	6.34	<3	1.55
Middle School Students																
SBP participants	144	6.6	0.22	5.0 ^	5.3 ^	5.9	6.6	7.3	8.0 ^	8.5 ^	95.0 ^	5.00	4.6 ^	4.43	<3	0.85
SBP nonparticipants	568	7.1	0.22	5.4	5.7	6.3	7.0	7.8	8.6	9.1	96.5 ^	5.10	<3	3.04	<3	2.36
Middle School Students, Male																
SBP participants	92	6.9	0.26	5.4 ^	5.7 ^	6.2	6.9	7.5	8.2 ^	8.6 ^	>97	4.57	<3	3.08	<3	1.80
SBP nonparticipants	291	6.8	0.15	5.2 ^	5.5	6.0	6.7	7.4	8.1	8.5 ^	96.3 ^	6.25	3.5 ^	5.20	<3	1.27
Middle School Students, Female																
SBP participants	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	7.6	0.37	5.8 ^	6.1	6.8	7.5	8.3	9.1	9.5 ^	>97	6.64	<3	2.22	<3	4.95
High School Students																
SBP participants	139	6.8	0.30	4.9 ^	5.3 ^	5.9	6.7	7.6	8.6 ^	9.2 ^	92.1 ^	9.07	6.0 ^	7.42	<3	2.28
SBP nonparticipants	564	7.1	0.23	5.0	5.4	6.1	7.0	8.0	9.0	9.7	91.1	7.76	5.4	4.76	3.5 ^	3.38
High School Students, Male																
SBP participants	83	6.5	0.46	5.1 ^	5.3 ^	5.9	6.5	7.1	7.8 ^	8.1 ^	95.9 ^	7.90	4.0 ^	7.55	<3	1.10
SBP nonparticipants	283	6.7	0.22	4.5 ^	4.9	5.6	6.6	7.6	8.7	9.4 ^	85.4	6.31	11.8	4.65	<3	2.25
High School Students, Female																
SBP participants	56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	7.6	0.38	5.8 ^	6.1	6.8	7.5	8.3	9.1	9.6 ^	96.9 ^	6.13	<3	2.30	<3	4.38

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

Table L.17. Usual Daily Linoleic Acid Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Linoleic Acid Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	119	14	0.8	9 ^	9 ^	11	13	16	18 ^	20 ^
SBP nonparticipants	240	13	0.5	7 ^	8	10	13	16	19	21 ^
9 to 13 Years										
SBP participants	220	16	0.6	10 ^	11	13	15	18	21	23 ^
SBP nonparticipants	719	15	0.6	8	9	11	14	18	22	24
9 to 13 Years, Male										
SBP participants	129	16	1.0	10 ^	11 ^	13	16	19	22 ^	24 ^
SBP nonparticipants	365	15	0.8	8 ^	9	11	15	18	22	25 ^
9 to 13 Years, Female										
SBP participants	91	15	0.8	9 ^	10 ^	12	15	17	20 ^	22 ^
SBP nonparticipants	354	15	0.8	8 ^	9	11	14	17	21	23 ^
14 to 18 Years ^b										
SBP participants	172	16	1.1	7 ^	9 ^	11	15	20	26 ^	30 ^
SBP nonparticipants	695	16	0.5	8	9	12	15	20	25	28
14 to 18 Years, Male ^b										
SBP participants	105	18	1.5	9 ^	10 ^	13	17	23	28 ^	32 ^
SBP nonparticipants	354	17	0.7	7 ^	9	12	16	21	27	32 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	15	0.8	9 ^	10	12	15	18	21	23 ^
All Students										
SBP participants	511	15	0.4	9	10	12	15	17	20	22
SBP nonparticipants	1,654	15	0.3	8	9	11	14	17	21	23
All Students, Male										
SBP participants	293	16	0.6	10 ^	11	13	15	18	21	23 ^
SBP nonparticipants	832	15	0.4	8	9	11	14	18	22	25
All Students, Female										
SBP participants	218	14	0.6	9 ^	10	11	14	16	19	21 ^
SBP nonparticipants	822	14	0.4	9	10	11	14	17	20	22

	Linoleic Acid Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	228	15	0.5	9 ^	10	12	14	17	20	22 ^
SBP nonparticipants	520	14	0.5	8	9	11	13	17	20	22
Elementary School Students, Male										
SBP participants	118	15	0.6	9 ^	10 ^	12	14	17	20 ^	21 ^
SBP nonparticipants	258	14	0.6	8 ^	9	11	13	16	19	21 ^
Elementary School Students, Female										
SBP participants	110	15	0.9	9 ^	10 ^	12	14	17	20 ^	21 ^
SBP nonparticipants	262	14	0.5	8 ^	9	11	14	17	20	22 ^
Middle School Students										
SBP participants	144	15	0.8	9 ^	10 ^	12	15	17	20 ^	22 ^
SBP nonparticipants	570	14	0.5	9	10	12	14	16	19	20
Middle School Students, Male										
SBP participants	92	17	1.6	11 ^	12 ^	14	17	20	23 ^	25 ^
SBP nonparticipants	291	15	0.6	8 ^	9	11	14	17	21	24 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	13	0.8	6 ^	7	9	12	16	19	22 ^
High School Students										
SBP participants	139	16	1.2	7 ^	9 ^	11	15	20	26 ^	30 ^
SBP nonparticipants	564	17	0.7	7	9	12	16	21	27	31
High School Students, Male										
SBP participants	83	18	1.8	9 ^	10 ^	13	17	22	28 ^	31 ^
SBP nonparticipants	283	18	1.0	8 ^	9	12	16	22	29	34 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	16	1.1	8 ^	9	12	15	19	23	26 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.18. Usual Daily Alpha-Linolenic Acid Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Alpha-Linolenic Acid										AMDR = 0.6-1.2% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years ^a																
SBP participants	119	0.7	0.04	0.5 ^	0.5 ^	0.6	0.7	0.8	0.9 ^	0.9 ^	66.0	22.15	33.6	21.93	<3	0.68
SBP nonparticipants	240	0.6	0.02	0.5 ^	0.5	0.5	0.6	0.7	0.8	0.8 ^	52.1	6.34	47.9	6.34	<3	0.00
9 to 13 Years																
SBP participants	218	0.7	0.02	0.4 ^	0.5	0.6	0.6	0.7	0.8	0.9 ^	62.3	27.42	37.6	27.36	<3	0.12
SBP nonparticipants	710	0.7	0.01	0.5	0.5	0.6	0.6	0.7	0.8	0.8	67.1	12.13	32.9	12.12	<3	0.03
9 to 13 Years, Male																
SBP participants	129	0.7	0.03	0.4 ^	0.5 ^	0.5	0.7	0.8	0.9 ^	1.0 ^	62.2	23.59	36.9	23.07	<3	1.10
SBP nonparticipants	362	0.6	0.02	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.8 ^	59.6	9.34	40.4	9.32	<3	0.06
9 to 13 Years, Female																
SBP participants	91	0.6	0.02	0.5 ^	0.5 ^	0.6	0.6	0.7	0.8 ^	0.8 ^	67.5	30.65	32.5	30.65	<3	0.11
SBP nonparticipants	351	0.7	0.02	0.5 ^	0.5	0.6	0.7	0.8	0.8	0.9 ^	68.1	14.45	31.8	14.40	<3	0.13
14 to 18 Years ^b																
SBP participants	172	0.6	0.03	0.5 ^	0.5 ^	0.6	0.6	0.7	0.8 ^	0.9 ^	60.7	11.99	39.3	11.99	<3	0.07
SBP nonparticipants	682	0.6	0.02	0.5	0.5	0.5	0.6	0.7	0.8	0.8	56.6	6.34	43.4	6.34	<3	0.02
14 to 18 Years, Male ^b																
SBP participants	105	0.6	0.04	0.5 ^	0.5 ^	0.6	0.6	0.7	0.8 ^	0.9 ^	59.3	14.90	40.6	14.89	<3	0.26
SBP nonparticipants	354	0.6	0.02	0.4 ^	0.5	0.5	0.6	0.7	0.8	0.8 ^	53.3	32.70	46.7	32.69	<3	0.05
14 to 18 Years, Female ^b																
SBP participants	67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	331	0.6	0.03	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.8 ^	60.7	9.95	39.3	9.96	<3	0.03
All Students																
SBP participants	511	0.7	0.01	0.5	0.5	0.6	0.6	0.7	0.8	0.9	65.0	13.25	35.0	13.22	<3	0.10
SBP nonparticipants	1,630	0.6	0.01	0.5	0.5	0.6	0.6	0.7	0.8	0.8	58.8	2.65	41.2	2.64	<3	0.03
All Students, Male																
SBP participants	293	0.6	0.02	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.9 ^	61.8	15.61	38.1	15.54	<3	0.27
SBP nonparticipants	826	0.6	0.01	0.5	0.5	0.5	0.6	0.7	0.7	0.8	51.9	22.29	48.1	22.29	<3	0.03
All Students, Female																
SBP participants	218	0.7	0.02	0.5 ^	0.5	0.6	0.7	0.7	0.8	0.9 ^	71.6	9.80	28.4	9.72	<3	0.31
SBP nonparticipants	804	0.7	0.01	0.5	0.5	0.6	0.6	0.7	0.8	0.9	66.2	5.27	33.8	5.26	<3	0.05

Percentage of Calories from Alpha-Linolenic Acid											AMDR = 0.6-1.2% of calories					
Percentiles																
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By School Type and Gender																
Elementary School Students																
SBP participants	228	0.7	0.02	0.5 ^	0.5	0.6	0.7	0.8	0.9	0.9 ^	64.5	10.91	35.2	10.83	<3	0.26
SBP nonparticipants	518	0.6	0.01	0.5	0.5	0.6	0.6	0.7	0.8	0.8	58.3	5.30	41.7	5.29	<3	0.05
Elementary School Students, Male																
SBP participants	118	0.7	0.03	0.4 ^	0.5 ^	0.5	0.6	0.7	0.8 ^	0.9 ^	60.2	18.89	39.5	18.73	<3	0.41
SBP nonparticipants	258	0.6	0.02	0.5 ^	0.5	0.5	0.6	0.7	0.7	0.8 ^	47.9	9.25	52.1	9.25	<3	0.04
Elementary School Students, Female																
SBP participants	108	0.7	0.03	0.5 ^	0.5 ^	0.6	0.7	0.8	0.9 ^	0.9 ^	70.6	11.50	29.2	11.50	<3	0.55
SBP nonparticipants	260	0.7	0.02	0.5 ^	0.5	0.6	0.7	0.7	0.8	0.8 ^	70.4	7.07	29.6	7.06	<3	0.05
Middle School Students																
SBP participants	143	0.6	0.02	0.5 ^	0.5 ^	0.6	0.6	0.7	0.8 ^	0.9 ^	60.6	28.89	39.4	28.87	<3	0.17
SBP nonparticipants	556	0.6	0.02	0.5	0.5	0.6	0.6	0.7	0.8	0.8	64.3	7.06	35.7	7.06	<3	0.02
Middle School Students, Male																
SBP participants	92	0.7	0.04	0.4 ^	0.5 ^	0.6	0.7	0.8	0.9 ^	1.0 ^	66.1	22.86	33.3	22.21	<3	2.40
SBP nonparticipants	286	0.6	0.02	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.8 ^	56.7	9.18	43.3	9.17	<3	0.05
Middle School Students, Female																
SBP participants	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	270	0.7	0.03	0.5 ^	0.5	0.6	0.7	0.8	0.8	0.9 ^	76.1	11.78	23.9	11.77	<3	0.05
High School Students																
SBP participants	139	0.6	0.04	0.5 ^	0.5 ^	0.6	0.6	0.7	0.8 ^	0.9 ^	59.1	13.75	40.9	13.76	<3	0.07
SBP nonparticipants	556	0.6	0.02	0.5	0.5	0.6	0.6	0.7	0.8	0.8	62.4	8.85	37.6	8.85	<3	0.02
High School Students, Male																
SBP participants	83	0.6	0.05	0.4 ^	0.5 ^	0.5	0.6	0.7	0.8 ^	0.8 ^	54.1	16.65	45.9	16.69	<3	0.21
SBP nonparticipants	283	0.7	0.03	0.4 ^	0.5	0.6	0.6	0.7	0.8	0.9 ^	61.3	22.41	38.5	22.38	<3	0.32
High School Students, Female																
SBP participants	56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	274	0.6	0.03	0.5 ^	0.5	0.6	0.6	0.7	0.8	0.8 ^	62.1	13.63	37.9	13.63	<3	0.03

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.19. Usual Daily Alpha-Linolenic Acid Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Alpha-Linolenic Acid Intakes (g)									
	N	Mean	SE	Percentiles						
				5	10	25	50	75	90	95
By Age/Gender Groups										
6 to 8 Years ^a										
SBP participants	119	1.4	0.10	0.8 ^	0.9 ^	1.1	1.4	1.6	2.0 ^	2.2 ^
SBP nonparticipants	240	1.3	0.05	0.8 ^	0.9	1.1	1.3	1.5	1.7	1.9 ^
9 to 13 Years										
SBP participants	220	1.5	0.06	0.9 ^	1.0	1.2	1.4	1.7	2.0	2.2 ^
SBP nonparticipants	719	1.4	0.06	0.9	1.0	1.1	1.4	1.6	1.9	2.1
9 to 13 Years, Male										
SBP participants	129	1.6	0.08	0.9 ^	1.0 ^	1.3	1.5	1.9	2.2 ^	2.4 ^
SBP nonparticipants	365	1.4	0.06	0.9 ^	1.0	1.2	1.4	1.6	1.8	2.0 ^
9 to 13 Years, Female										
SBP participants	91	1.4	0.09	0.8 ^	0.9 ^	1.1	1.4	1.6	1.9 ^	2.2 ^
SBP nonparticipants	354	1.4	0.10	0.7 ^	0.9	1.1	1.4	1.7	2.1	2.3 ^
14 to 18 Years ^b										
SBP participants	172	1.5	0.09	0.8 ^	0.9 ^	1.1	1.4	1.8	2.3 ^	2.6 ^
SBP nonparticipants	695	1.5	0.05	0.7	0.9	1.1	1.4	1.8	2.2	2.5
14 to 18 Years, Male ^b										
SBP participants	105	1.7	0.14	0.8 ^	0.9 ^	1.2	1.6	2.1	2.7 ^	3.1 ^
SBP nonparticipants	354	1.6	0.09	0.7 ^	0.9	1.1	1.5	1.9	2.5	2.9 ^
14 to 18 Years, Female ^b										
SBP participants	67	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	1.4	0.07	0.8 ^	0.9	1.1	1.3	1.6	1.8	2.0 ^
All Students										
SBP participants	511	1.5	0.03	0.8	1.0	1.1	1.4	1.7	2.1	2.3
SBP nonparticipants	1,654	1.4	0.03	0.9	1.0	1.1	1.3	1.6	1.8	2.0
All Students, Male										
SBP participants	293	1.5	0.05	0.8 ^	0.9	1.2	1.5	1.8	2.2	2.5 ^
SBP nonparticipants	832	1.4	0.03	0.9	1.0	1.2	1.4	1.6	1.8	2.0
All Students, Female										
SBP participants	218	1.4	0.05	0.9 ^	1.0	1.2	1.4	1.6	1.8	2.0 ^
SBP nonparticipants	822	1.4	0.04	0.8	0.9	1.1	1.3	1.6	1.9	2.1

				Alpha-Linolenic Acid Intakes (g)						
				Percentiles						
	N	Mean	SE	5	10	25	50	75	90	95
By School Type and Gender										
Elementary School Students										
SBP participants	228	1.5	0.06	0.8 ^	1.0	1.1	1.4	1.7	2.0	2.3 ^
SBP nonparticipants	520	1.3	0.04	0.9	1.0	1.1	1.3	1.5	1.8	1.9
Elementary School Students, Male										
SBP participants	118	1.4	0.08	0.8 ^	0.9 ^	1.1	1.4	1.7	2.0 ^	2.3 ^
SBP nonparticipants	258	1.3	0.05	0.8 ^	0.9	1.1	1.3	1.5	1.8	2.0 ^
Elementary School Students, Female										
SBP participants	110	1.5	0.10	0.9 ^	1.0 ^	1.2	1.4	1.7	2.0 ^	2.2 ^
SBP nonparticipants	262	1.4	0.06	0.8 ^	0.9	1.1	1.4	1.7	2.0	2.2 ^
Middle School Students										
SBP participants	142	1.4	0.06	0.9 ^	1.0 ^	1.2	1.4	1.6	1.9 ^	2.0 ^
SBP nonparticipants	570	1.3	0.04	0.8	0.9	1.0	1.2	1.5	1.7	1.9
Middle School Students, Male										
SBP participants	92	1.7	0.12	0.9 ^	1.0 ^	1.3	1.6	2.0	2.4 ^	2.6 ^
SBP nonparticipants	291	1.3	0.06	0.8 ^	0.9	1.1	1.3	1.5	1.8	2.0 ^
Middle School Students, Female										
SBP participants	52	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	1.2	0.06	0.7 ^	0.8	1.0	1.2	1.4	1.7	1.8 ^
High School Students										
SBP participants	139	1.5	0.11	0.8 ^	0.9 ^	1.1	1.4	1.9	2.3 ^	2.7 ^
SBP nonparticipants	564	1.6	0.07	0.8	0.9	1.1	1.5	1.9	2.4	2.7
High School Students, Male										
SBP participants	83	1.7	0.17	0.8 ^	0.9 ^	1.2	1.6	2.1	2.7 ^	3.0 ^
SBP nonparticipants	283	1.7	0.11	0.8 ^	1.0	1.2	1.6	2.0	2.6	2.9 ^
High School Students, Female										
SBP participants	56	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	1.4	0.09	0.7 ^	0.8	1.0	1.3	1.6	2.0	2.2 ^

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.20. Usual Daily Carbohydrate Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Carbohydrates										AMDR = 45-65% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years^a																
SBP participants	119	58.1	0.94	51.8 ^	53.2 ^	55.5	58.0	60.6	63.1 ^	64.7 ^	95.8 ^	4.08	<3	0.34	4.2 ^	3.90
SBP nonparticipants	240	55.8	0.65	48.6 ^	50.3	52.9	55.8	58.7	61.3	62.8 ^	>97	2.24	<3	0.62	<3	1.73
9 to 13 Years																
SBP participants	220	54.2	0.65	48.1 ^	49.4	51.7	54.3	56.8	58.9	60.3 ^	>97	1.75	<3	1.31	<3	0.50
SBP nonparticipants	719	54.7	0.48	46.3	48.2	51.3	54.7	58.0	61.0	62.8	95.3	2.47	<3	1.62	<3	1.07
9 to 13 Years, Male																
SBP participants	129	54.2	0.88	48.1 ^	49.4 ^	51.7	54.2	56.7	58.8 ^	60.0 ^	>97	1.82	<3	1.49	<3	0.44
SBP nonparticipants	365	55.0	0.65	47.0 ^	48.8	51.8	55.0	58.3	61.2	62.9 ^	96.1 ^	3.16	<3	1.77	<3	1.66
9 to 13 Years, Female																
SBP participants	91	54.2	0.87	48.2 ^	49.6 ^	51.7	54.3	56.7	58.8 ^	60.4 ^	>97	1.72	<3	1.28	<3	0.54
SBP nonparticipants	354	54.3	0.71	45.5 ^	47.5	50.7	54.3	57.9	60.9	62.9 ^	93.9	4.49	4.1 ^	2.98	<3	1.89
14 to 18 Years^b																
SBP participants	171	53.7	0.74	47.6 ^	49.0 ^	51.2	53.7	56.2	58.3 ^	59.7 ^	>97	2.05	<3	1.73	<3	0.39
SBP nonparticipants	695	52.9	0.52	42.9	45.1	48.9	53.0	56.9	60.4	62.6	88.3	4.27	9.7	3.25	<3	1.28
14 to 18 Years, Male^b																
SBP participants	105	52.9	0.97	47.0 ^	48.4 ^	50.5	52.9	55.3	57.5 ^	58.9 ^	>97	2.33	<3	2.12	<3	0.32
SBP nonparticipants	354	52.5	0.66	41.6 ^	44.2	48.3	52.7	57.0	60.6	62.8 ^	85.6	3.21	12.2	2.71	<3	1.16
14 to 18 Years, Female^b																
SBP participants	67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	53.1	0.84	44.3 ^	46.4	49.6	53.1	56.7	60.0	62.0 ^	92.3	7.40	6.4	5.76	<3	1.88
All Students																
SBP participants	510	55.3	0.53	48.4	49.9	52.4	55.3	58.1	60.6	62.1	>97	2.21	<3	1.08	<3	1.26
SBP nonparticipants	1,654	54.5	0.35	47.1	48.8	51.6	54.6	57.6	60.2	61.7	97.4	2.28	1.8	1.42	<3	0.92
All Students, Male																
SBP participants	293	55.1	0.59	48.2 ^	49.7	52.2	55.1	57.9	60.4	61.9 ^	>97	2.11	<3	1.15	<3	1.11
SBP nonparticipants	832	54.7	0.49	46.6	48.4	51.5	54.8	57.9	60.7	62.4	96.2	3.37	2.6	1.97	<3	1.54
All Students, Female																
SBP participants	218	55.5	0.67	49.2 ^	50.6	52.9	55.5	58.1	60.4	61.9 ^	>97	3.16	<3	1.33	<3	1.98
SBP nonparticipants	822	54.3	0.36	48.1	49.5	51.8	54.3	56.9	59.1	60.5	>97	2.41	<3	1.71	<3	0.72

	Percentage of Calories from Carbohydrates										AMDR = 45-65% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By School Type and Gender																
Elementary School Students																
SBP participants	228	56.2	0.78	50.1 ^	51.5	53.7	56.2	58.7	61.0	62.4 ^	>97	2.24	<3	0.56	<3	1.83
SBP nonparticipants	520	55.6	0.48	49.8	51.2	53.3	55.7	58.0	60.1	61.3	>97	2.11	<3	0.68	<3	1.46
Elementary School Students, Male																
SBP participants	118	56.3	0.81	48.6 ^	50.4 ^	53.2	56.4	59.5	62.3 ^	64.0 ^	96.3 ^	3.99	<3	1.27	3.0 ^	2.94
SBP nonparticipants	258	55.9	0.70	49.5 ^	51.0	53.4	56.0	58.5	60.8	62.1 ^	>97	4.00	<3	1.31	<3	2.78
Elementary School Students, Female																
SBP participants	110	56.1	1.03	49.9 ^	51.3 ^	53.6	56.1	58.5	60.8 ^	62.2 ^	>97	3.28	<3	1.25	<3	2.36
SBP nonparticipants	262	55.5	0.50	50.3 ^	51.4	53.3	55.5	57.6	59.6	60.7 ^	>97	2.74	<3	1.22	<3	1.61
Middle School Students																
SBP participants	144	54.2	0.70	47.6 ^	49.0 ^	51.5	54.2	56.9	59.3 ^	60.9 ^	>97	2.07	<3	1.50	<3	0.68
SBP nonparticipants	570	54.0	0.59	48.0	49.4	51.7	54.2	56.5	58.6	59.7	>97	1.52	<3	1.38	<3	0.21
Middle School Students, Male																
SBP participants	92	54.4	1.12	47.8 ^	49.3 ^	51.7	54.4	57.1	59.5 ^	61.0 ^	>97	2.25	<3	1.75	<3	0.87
SBP nonparticipants	291	54.5	0.67	47.0 ^	48.8	51.7	54.7	57.5	59.9	61.3 ^	>97	3.39	<3	2.48	<3	1.03
Middle School Students, Female																
SBP participants	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	53.3	0.72	47.5 ^	48.8	51.0	53.4	55.7	57.8	59.0 ^	>97	2.65	<3	2.25	<3	0.47
High School Students																
SBP participants	138	53.7	0.83	47.0 ^	48.5 ^	51.0	53.7	56.4	58.7 ^	60.4 ^	>97	2.37	<3	2.00	<3	0.53
SBP nonparticipants	564	52.5	0.56	42.6	44.8	48.5	52.5	56.5	60.1	62.2	87.9	4.51	10.4	3.56	<3	1.23
High School Students, Male																
SBP participants	83	52.7	1.08	46.2 ^	47.7 ^	50.1	52.7	55.3	57.7 ^	59.3 ^	>97	2.74	<3	2.52	<3	0.41
SBP nonparticipants	283	52.0	0.77	41.0 ^	43.6	47.7	52.1	56.4	60.3	62.6 ^	83.6	3.54	14.3	3.19	<3	1.23
High School Students, Female																
SBP participants	56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	53.1	1.03	44.6 ^	46.5	49.8	53.1	56.5	59.5	61.3 ^	93.2 ^	8.36	5.9 ^	6.81	<3	1.82

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

Table L.21. Usual Daily Carbohydrate Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Carbohydrate Intakes (g)										EAR (g)	% Below EAR	SE
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											100		
SBP participants	119	270	7.2	185 ^	201 ^	230	265	305	344 ^	369 ^	100	<3	0.02
SBP nonparticipants	240	256	6.9	197 ^	209	229	254	280	305	322 ^	100	<3	0.00
9 to 13 Years											100		
SBP participants	220	274	7.1	188 ^	204	233	270	310	348	374 ^	100	<3	0.01
SBP nonparticipants	719	261	9.4	150	171	208	255	306	359	392	100	<3	0.24
9 to 13 Years, Male											100		
SBP participants	129	286	12.6	210 ^	225 ^	250	282	317	350 ^	373 ^	100	<3	0.00
SBP nonparticipants	365	273	9.3	171 ^	190	225	269	316	363	392 ^	100	<3	0.10
9 to 13 Years, Female											100		
SBP participants	91	262	10.3	175 ^	191 ^	221	257	298	338 ^	365 ^	100	<3	0.13
SBP nonparticipants	354	245	13.6	132 ^	152	188	236	292	349	389 ^	100	<3	1.02
14 to 18 Years ^b											100		
SBP participants	172	288	16.6	136 ^	161 ^	208	274	351	436 ^	491 ^	100	<3	1.37
SBP nonparticipants	695	269	7.2	152	171	209	259	317	379	422	100	<3	0.29
14 to 18 Years, Male ^b											100		
SBP participants	105	320	18.2	181 ^	206 ^	253	311	378	447 ^	490 ^	100	<3	0.41
SBP nonparticipants	354	294	11.6	165 ^	187	228	283	348	414	460 ^	100	<3	0.20
14 to 18 Years, Female ^b											100		
SBP participants	67	--	--	--	--	--	--	--	--	--	100	--	--
SBP nonparticipants	341	235	9.2	143 ^	160	189	228	273	322	353 ^	100	<3	0.84
All Students											—		
SBP participants	511	273	5.6	188	204	233	269	309	348	373	—	<3	0.01
SBP nonparticipants	1,654	261	4.6	162	180	213	255	303	351	383	—	<3	0.09
All Students, Male											—		
SBP participants	293	288	7.7	214 ^	227	253	284	318	352	374 ^	—	<3	0.00
SBP nonparticipants	832	274	5.5	173	191	225	268	315	364	396	—	<3	0.05
All Students, Female											—		
SBP participants	218	256	7.2	170 ^	187	216	252	292	332	359 ^	—	<3	0.17
SBP nonparticipants	822	245	4.5	151	167	199	238	284	332	364	—	<3	0.19

	Carbohydrate Intakes (g)										EAR (g) % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	270	6.1	186 ^	202	230	266	306	345	369 ^	—	<3	0.01
SBP nonparticipants	520	262	6.5	170	188	219	257	300	343	370	—	<3	0.06
Elementary School Students, Male											—		
SBP participants	118	275	8.6	203 ^	217 ^	241	272	304	337 ^	359 ^	—	<3	0.00
SBP nonparticipants	258	266	7.6	187 ^	203	230	263	299	334	356 ^	—	<3	0.04
Elementary School Students, Female											—		
SBP participants	110	264	8.9	177 ^	193 ^	223	260	299	340 ^	367 ^	—	<3	0.10
SBP nonparticipants	262	259	7.1	159 ^	177	210	253	301	351	383 ^	—	<3	0.21
Middle School Students											—		
SBP participants	144	276	13.5	162 ^	181 ^	216	265	321	386 ^	431 ^	—	<3	0.11
SBP nonparticipants	570	238	6.4	137	155	188	232	281	330	361	—	<3	0.70
Middle School Students, Male											—		
SBP participants	92	300	24.0	167 ^	190 ^	233	288	356	424 ^	471 ^	—	<3	0.20
SBP nonparticipants	291	258	6.5	149 ^	169	207	253	303	353	385 ^	—	<3	0.64
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	207	9.7	145 ^	156	178	204	232	263	281 ^	—	<3	0.64
High School Students											—		
SBP participants	139	292	16.4	143 ^	171 ^	218	282	354	431 ^	478 ^	—	<3	1.26
SBP nonparticipants	564	272	9.0	151	172	211	262	323	386	429	—	<3	0.33
High School Students, Male											—		
SBP participants	83	321	21.5	196 ^	221 ^	265	317	374	430 ^	461 ^	—	<3	0.45
SBP nonparticipants	283	296	14.3	165 ^	188	230	286	350	417	462 ^	—	<3	0.27
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	238	11.3	138 ^	155	190	231	279	328	362 ^	—	<3	1.00

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.22. Usual Daily Protein Intakes, as a Percentage of Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Percentage of Calories from Protein										AMDR = 10-30% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By Age/Gender Groups																
6 to 8 Years ^a																
SBP participants	119	14.7	0.31	12.1 ^	12.6 ^	13.5	14.6	15.8	16.9 ^	17.6 ^	>97	0.58	<3	0.58	<3	0.00
SBP nonparticipants	240	15.9	0.46	11.0 ^	11.9	13.5	15.5	17.8	20.2	21.9 ^	>97	1.14	<3	1.08	<3	0.12
9 to 13 Years																
SBP participants	220	15.7	0.41	12.9 ^	13.4	14.4	15.6	16.8	18.0	18.8 ^	>97	0.26	<3	0.26	<3	0.00
SBP nonparticipants	719	15.4	0.29	11.3	12.1	13.5	15.2	17.0	18.9	20.1	>97	1.37	<3	1.35	<3	0.03
9 to 13 Years, Male																
SBP participants	129	16.1	0.51	13.5 ^	14.0 ^	14.9	16.0	17.2	18.3 ^	19.0 ^	>97	0.10	<3	0.10	<3	0.00
SBP nonparticipants	365	15.5	0.34	11.6 ^	12.4	13.8	15.4	17.1	18.8	19.8 ^	>97	1.57	<3	1.55	<3	0.02
9 to 13 Years, Female																
SBP participants	91	15.5	0.50	11.9 ^	12.6 ^	13.8	15.3	16.9	18.5 ^	19.5 ^	>97	1.26	<3	1.24	<3	0.02
SBP nonparticipants	354	15.2	0.49	10.8 ^	11.6	13.1	14.9	17.0	19.1	20.6 ^	>97	1.80	<3	1.76	<3	0.07
14 to 18 Years ^b																
SBP participants	172	16.1	0.59	11.7 ^	12.5 ^	13.9	15.8	17.9	20.0 ^	21.4 ^	>97	2.02	<3	1.84	<3	0.22
SBP nonparticipants	695	16.3	0.33	11.2	12.1	13.8	15.9	18.3	20.9	22.6	>97	1.23	<3	1.05	<3	0.22
14 to 18 Years, Male ^b																
SBP participants	104	16.4	0.81	13.7 ^	14.3 ^	15.2	16.3	17.5	18.6 ^	19.3 ^	>97	0.03	<3	0.02	<3	0.00
SBP nonparticipants	354	17.1	0.54	11.4 ^	12.4	14.2	16.7	19.5	22.4	24.4 ^	>97	1.73	<3	1.14	<3	0.69
14 to 18 Years, Female ^b																
SBP participants	67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	15.1	0.45	11.4 ^	12.1	13.3	14.9	16.6	18.4	19.5 ^	>97	1.45	<3	1.44	<3	0.02
All Students																
SBP participants	509	15.4	0.21	12.7	13.3	14.2	15.4	16.6	17.8	18.5	>97	0.23	<3	0.23	<3	0.00
SBP nonparticipants	1,654	15.8	0.22	11.1	12.0	13.5	15.5	17.7	20.0	21.4	98.5	0.72	1.4	0.69	<3	0.04
All Students, Male																
SBP participants	292	15.7	0.30	13.1 ^	13.6	14.6	15.7	16.8	17.9	18.6 ^	>97	0.12	<3	0.12	<3	0.00
SBP nonparticipants	832	16.1	0.27	11.4	12.3	13.9	15.8	18.0	20.3	21.8	>97	0.85	<3	0.80	<3	0.08
All Students, Female																
SBP participants	218	15.2	0.29	11.8 ^	12.5	13.7	15.1	16.6	18.2	19.2 ^	>97	1.16	<3	1.15	<3	0.01
SBP nonparticipants	822	15.4	0.28	10.7	11.6	13.1	15.0	17.2	19.6	21.1	>97	1.28	<3	1.25	<3	0.06

	Percentage of Calories from Protein										AMDR = 10-30% of calories					
	Percentiles															
	N	Mean	SE	5	10	25	50	75	90	95	% Within AMDR	SE	% Below AMDR	SE	% Above AMDR	SE
By School Type and Gender																
Elementary School Students																
SBP participants	228	15.2	0.27	12.4 ^	13.0	13.9	15.1	16.3	17.5	18.2 ^	>97	0.41	<3	0.41	<3	0.00
SBP nonparticipants	520	15.5	0.28	11.1	11.9	13.4	15.2	17.3	19.3	20.6	>97	0.86	<3	0.84	<3	0.04
Elementary School Students, Male																
SBP participants	118	15.4	0.34	12.8 ^	13.3 ^	14.2	15.3	16.4	17.6 ^	18.2 ^	>97	0.25	<3	0.24	<3	0.00
SBP nonparticipants	258	15.8	0.35	11.8 ^	12.6	14.0	15.6	17.4	19.2	20.2 ^	>97	0.94	<3	0.94	<3	0.00
Elementary School Students, Female																
SBP participants	110	15.1	0.42	11.7 ^	12.4 ^	13.5	15.0	16.6	18.1 ^	19.2 ^	>97	1.37	<3	1.36	<3	0.00
SBP nonparticipants	262	15.3	0.35	10.4 ^	11.3	12.9	14.9	17.2	19.6	21.2 ^	96.7 ^	1.44	3.3 ^	1.38	<3	0.09
Middle School Students																
SBP participants	144	15.6	0.37	12.8 ^	13.3 ^	14.3	15.5	16.8	18.0 ^	18.8 ^	>97	0.24	<3	0.24	<3	0.00
SBP nonparticipants	570	16.0	0.24	13.2	13.8	14.8	15.9	17.2	18.4	19.1	>97	0.14	<3	0.14	<3	0.00
Middle School Students, Male																
SBP participants	92	16.2	0.60	13.4 ^	13.9 ^	14.9	16.1	17.3	18.5 ^	19.3 ^	>97	0.09	<3	0.09	<3	0.01
SBP nonparticipants	291	16.2	0.37	12.7 ^	13.4	14.6	16.1	17.6	19.2	20.2 ^	>97	0.54	<3	0.51	<3	0.04
Middle School Students, Female																
SBP participants	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	279	15.7	0.41	11.0 ^	11.8	13.4	15.4	17.7	20.0	21.6 ^	>97	1.25	<3	1.16	<3	0.13
High School Students																
SBP participants	139	16.1	0.57	11.9 ^	12.8 ^	14.1	15.9	17.8	19.9 ^	21.1 ^	>97	2.53	<3	2.26	<3	0.29
SBP nonparticipants	564	16.4	0.42	10.9	11.9	13.7	16.0	18.6	21.4	23.3	>97	1.57	<3	1.29	<3	0.36
High School Students, Male																
SBP participants	82	16.4	0.85	13.6 ^	14.2 ^	15.2	16.3	17.5	18.7 ^	19.5 ^	>97	0.04	<3	0.04	<3	0.01
SBP nonparticipants	283	17.3	0.61	11.0 ^	12.1	14.1	16.8	19.8	23.1	25.3 ^	96.8 ^	1.87	<3	1.14	<3	0.97
High School Students, Female																
SBP participants	56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	15.0	0.55	11.1 ^	11.9	13.3	14.8	16.6	18.4	19.6 ^	>97	2.08	<3	2.07	<3	0.02

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of acceptable usual daily intakes, the AMDR for males and females 19 to 30 years was used for these students (10 to 35 percent of calories for both groups).

AMDR = Acceptable Macronutrient Distribution Range; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

Table L.23. Usual Daily Protein Intakes, Expressed as g per kg Body Weight: SBP Participants and Matched Comparison Group of Nonparticipants

	Protein Intakes (g/kg)										EAR (g/kg body weight) ^a % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^b											0.76		
SBP participants	119	2	0.1	1 ^	1 ^	2	2	3	3 ^	3 ^	0.76	<3	3.82
SBP nonparticipants	240	2	0.1	1 ^	1	2	2	3	4	4 ^	0.76	3.4 ^	2.59
9 to 13 Years											0.76		
SBP participants	220	2	0.1	1 ^	1	1	2	2	3	3 ^	0.76	<3	2.33
SBP nonparticipants	719	2	0.1	1	1	1	2	2	3	3	0.76	8.2	3.40
9 to 13 Years, Male											0.76		
SBP participants	129	2	0.1	1 ^	1 ^	2	2	3	3 ^	3 ^	0.76	<3	2.60
SBP nonparticipants	365	2	0.1	1 ^	1	1	2	2	3	3 ^	0.76	6.4	4.27
9 to 13 Years, Female											0.76		
SBP participants	91	2	0.2	1 ^	1 ^	1	2	2	3 ^	4 ^	0.76	9.2 ^	4.11
SBP nonparticipants	354	2	0.1	1 ^	1	1	2	2	2	3 ^	0.76	6.3	3.36
14 to 18 Years ^c											—		
SBP participants	172	1	0.1	0 ^	0 ^	1	1	2	2 ^	3 ^	—	29.4	4.99
SBP nonparticipants	695	1	0.1	0	0	1	1	2	2	3	—	22.3	3.24
14 to 18 Years, Male ^c											0.73		
SBP participants	105	1	0.1	0 ^	1 ^	1	1	2	3 ^	3 ^	0.73	19.9	5.96
SBP nonparticipants	354	1	0.1	0 ^	1	1	1	2	2	3 ^	0.73	15.5	3.83
14 to 18 Years, Female ^c											0.71		
SBP participants	67	--	--	--	--	--	--	--	--	--	0.71	--	--
SBP nonparticipants	341	1	0.1	0 ^	0	1	1	1	2	2 ^	0.71	30.7	5.16
All Students											—		
SBP participants	511	2	0.1	0	1	1	2	2	3	3	—	11.9	3.65
SBP nonparticipants	1,654	2	0.1	0	1	1	2	2	3	4	—	14.1	2.74
All Students, Male											—		
SBP participants	293	2	0.1	1 ^	1	1	2	2	3	3 ^	—	7.1	4.85
SBP nonparticipants	832	2	0.1	1	1	1	2	2	3	4	—	10.6	3.94
All Students, Female											—		
SBP participants	218	2	0.1	0 ^	1	1	2	2	3	4 ^	—	14.9	4.95
SBP nonparticipants	822	2	0.1	0	1	1	1	2	3	4	—	18.7	3.08

	Protein Intakes (g/kg)										EAR (g/kg body weight) ^a % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	2	0.1	1 ^	1	2	2	3	3	3 ^	—	<3	2.14
SBP nonparticipants	520	2	0.1	1	1	1	2	3	4	4	—	6.6	2.80
Elementary School Students, Male											—		
SBP participants	118	2	0.1	1 ^	1 ^	2	2	2	3 ^	3 ^	—	<3	1.81
SBP nonparticipants	258	2	0.1	1 ^	1	2	2	3	4	4 ^	—	4.4 ^	3.70
Elementary School Students, Female											—		
SBP participants	110	2	0.1	1 ^	1 ^	2	2	3	3 ^	3 ^	—	<3	3.48
SBP nonparticipants	262	2	0.2	1 ^	1	1	2	3	3	4 ^	—	8.5	4.24
Middle School Students											—		
SBP participants	144	2	0.1	1 ^	1 ^	1	2	2	2 ^	3 ^	—	5.8 ^	4.93
SBP nonparticipants	570	1	0.1	1	1	1	1	2	2	2	—	12.4	7.04
Middle School Students, Male											—		
SBP participants	92	2	0.1	1 ^	1 ^	1	2	2	2 ^	3 ^	—	<3	3.51
SBP nonparticipants	291	1	0.1	1 ^	1	1	1	2	2	2 ^	—	9.5	8.47
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	1	0.0	1 ^	1	1	1	1	2	2 ^	—	9.2	8.49
High School Students											—		
SBP participants	139	1	0.1	0 ^	0 ^	1	1	2	2 ^	3 ^	—	30.7	5.49
SBP nonparticipants	564	1	0.1	0	0	1	1	2	2	3	—	23.5	4.29
High School Students, Male											—		
SBP participants	83	1	0.2	0 ^	0 ^	1	1	2	3 ^	3 ^	—	21.4 ^	7.22
SBP nonparticipants	283	1	0.1	0 ^	1	1	1	2	2	3 ^	—	16.3	5.64
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	1	0.1	0 ^	0	1	1	1	2	2 ^	—	33.8	7.23

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aFor students with a body mass index that fell with the healthy weight range (between 18.5 and 24.9), actual body weight was used to compute the EAR. For students outside of the healthy weight range, a weight was used that would place the student at the nearest end of the healthy weight range, based on his or her height.

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (0.66 g per kg of body weight for both groups).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; g = grams; kg = kilograms; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.24. Usual Daily Vitamin A Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Vitamin A Intakes (mcg RAE)										EAR (mcg RAE)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											275		
SBP participants	119	664	35.4	389 ^	435 ^	529	645	779	918 ^	1,005 ^	275	<3	1.23
SBP nonparticipants	240	648	35.9	338 ^	390	490	620	776	940	1,061 ^	275	<3	2.16
9 to 13 Years											—		
SBP participants	220	621	27.1	317 ^	370	469	598	747	903	1,004 ^	—	18.9	7.34
SBP nonparticipants	719	602	30.6	245	301	412	565	748	949	1,084	—	28.4	5.65
9 to 13 Years, Male											445		
SBP participants	129	641	31.5	368 ^	420 ^	511	627	757	881 ^	962 ^	445	13.5 ^	12.10
SBP nonparticipants	365	629	33.5	258 ^	315	432	591	781	990	1,124 ^	445	26.9	6.10
9 to 13 Years, Female											420		
SBP participants	91	603	40.3	283 ^	334 ^	435	569	735	917 ^	1,042 ^	420	22.7	6.35
SBP nonparticipants	354	572	58.0	240 ^	293	393	537	711	895	1,030 ^	420	29.6	11.99
14 to 18 Years ^b											—		
SBP participants	172	597	51.2	255 ^	306 ^	405	553	736	949 ^	1,094 ^	—	51.8	7.92
SBP nonparticipants	695	599	36.1	204	258	372	542	758	1,011	1,193	—	53.1	4.05
14 to 18 Years, Male ^b											630		
SBP participants	105	722	67.4	177 ^	240 ^	387	614	939	1,344 ^	1,626 ^	630	51.7	6.20
SBP nonparticipants	354	677	51.4	225 ^	287	413	605	862	1,154	1,374 ^	630	53.2	5.62
14 to 18 Years, Female ^b											485		
SBP participants	67	--	--	--	--	--	--	--	--	--	485	--	--
SBP nonparticipants	341	492	34.7	191 ^	238	328	455	618	798	919 ^	485	55.9	6.31
All Students											—		
SBP participants	511	621	17.9	341	389	480	600	738	880	975	—	19.3	4.82
SBP nonparticipants	1,654	615	23.1	244	301	413	572	770	986	1,133	—	28.0	3.07
All Students, Male											—		
SBP participants	293	676	28.1	385 ^	435	532	656	796	942	1,041 ^	—	17.2	8.07
SBP nonparticipants	832	646	23.9	252	309	430	599	808	1,039	1,202	—	29.0	3.61
All Students, Female											—		
SBP participants	218	557	20.6	306 ^	350	433	539	661	788	874 ^	—	20.0	7.87
SBP nonparticipants	822	577	36.5	240	292	397	540	717	911	1,045	—	26.0	4.71

Vitamin A Intakes (mcg RAE)											EAR (mcg RAE) % Below EAR SE		
Percentiles													
N	Mean	SE	5	10	25	50	75	90	95				
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	646	29.3	369 ^	418	508	627	762	898	987 ^	—	6.4 ^	4.24
SBP nonparticipants	520	637	27.0	298	357	464	605	778	959	1,078	—	11.2	3.44
Elementary School Students, Male											—		
SBP participants	118	687	41.6	399 ^	450 ^	544	669	804	948 ^	1,049 ^	—	5.1 ^	5.51
SBP nonparticipants	258	650	28.9	308 ^	369	480	623	791	971	1,085 ^	—	11.8	4.25
Elementary School Students, Female											—		
SBP participants	110	589	31.7	341 ^	388 ^	470	571	690	816 ^	894 ^	—	7.8 ^	5.82
SBP nonparticipants	262	631	46.4	306 ^	358	461	599	765	944	1,067 ^	—	10.0	5.12
Middle School Students											—		
SBP participants	144	618	35.5	255 ^	311 ^	421	579	765	980 ^	1,129 ^	—	31.8	6.28
SBP nonparticipants	570	571	31.0	224	277	383	534	718	914	1,044	—	37.9	4.62
Middle School Students, Male											—		
SBP participants	92	662	52.4	258 ^	323 ^	452	621	833	1,048 ^	1,193 ^	—	30.1	6.42
SBP nonparticipants	291	626	39.3	260 ^	316	432	588	777	979	1,118 ^	—	33.7	7.07
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	488	35.0	205 ^	249	340	461	603	761	860 ^	—	43.3	8.06
High School Students											—		
SBP participants	139	614	59.6	243 ^	303 ^	409	566	764	997 ^	1,148 ^	—	49.6	7.12
SBP nonparticipants	564	601	40.3	191	245	360	534	768	1,041	1,245	—	54.6	4.08
High School Students, Male											—		
SBP participants	83	740	89.8	161 ^	227 ^	376	623	978	1,418 ^	1,708 ^	—	50.6	7.67
SBP nonparticipants	283	690	53.7	220 ^	283	413	613	879	1,197	1,429 ^	—	51.8	5.76
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	472	42.2	163 ^	206	302	431	598	784	922 ^	—	59.7	7.76

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (625 mcg RAE and 500 mcg RAE, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; RAE = retinol activity equivalent; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.25. Usual Daily Vitamin C Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Vitamin C Intakes (mg)										EAR (mg) ^a % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^b											22		
SBP participants	119	93	6.3	45 ^	52 ^	68	89	113	140 ^	157 ^	22	<3	0.30
SBP nonparticipants	240	83	6.3	33 ^	41	56	77	103	131	152 ^	22	<3	2.02
9 to 13 Years											39		
SBP participants	220	84	3.9	28 ^	36	52	76	107	142	165 ^	39	12.7	8.19
SBP nonparticipants	719	87	6.0	32	40	56	80	109	141	164	39	9.4	6.77
9 to 13 Years, Male											39		
SBP participants	129	86	5.6	26 ^	35 ^	53	79	112	148 ^	172 ^	39	13.2 ^	8.28
SBP nonparticipants	365	91	8.2	45 ^	52	67	87	110	135	152 ^	39	<3	8.58
9 to 13 Years, Female											39		
SBP participants	91	81	6.9	34 ^	41 ^	56	75	101	130 ^	150 ^	39	8.6 ^	11.18
SBP nonparticipants	354	82	6.8	21 ^	29	46	73	108	147	176 ^	39	18.5	7.84
14 to 18 Years ^c											—		
SBP participants	172	79	8.8	31 ^	39 ^	52	73	98	127 ^	147 ^	—	34.2	9.88
SBP nonparticipants	695	77	4.5	18	25	41	66	101	143	175	—	44.5	3.85
14 to 18 Years, Male ^c											63		
SBP participants	105	81	9.3	38 ^	44 ^	59	77	100	124 ^	139 ^	63	30.7	13.84
SBP nonparticipants	354	79	6.5	19 ^	26	42	68	104	145	177 ^	63	45.5	5.54
14 to 18 Years, Female ^c											56		
SBP participants	67	--	--	--	--	--	--	--	--	--	56	--	--
SBP nonparticipants	341	74	7.6	16 ^	23	37	61	97	144	179 ^	56	45.7	6.72
All Students											—		
SBP participants	511	84	3.5	37	44	59	79	103	129	147	—	9.9	3.43
SBP nonparticipants	1,654	83	3.0	27	35	51	75	106	141	166	—	16.7	3.80
All Students, Male											—		
SBP participants	293	89	5.0	39 ^	47	63	84	109	136	155 ^	—	9.2	4.03
SBP nonparticipants	832	83	4.1	24	32	49	74	106	144	172	—	19.3	5.61
All Students, Female											—		
SBP participants	218	78	4.4	36 ^	43	56	74	96	119	136 ^	—	9.3	6.30
SBP nonparticipants	822	83	4.1	30	38	53	76	105	138	161	—	13.3	3.76

	Vitamin C Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg) ^a	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	88	4.5	47 ^	54	67	85	105	126	140 ^	—	<3	2.08
SBP nonparticipants	520	88	5.9	35	44	60	82	110	140	160	—	3.6 ^	2.30
Elementary School Students, Male											—		
SBP participants	118	90	7.4	41 ^	49 ^	65	85	111	137 ^	155 ^	—	<3	2.91
SBP nonparticipants	258	84	7.3	22 ^	30	48	74	109	151	179 ^	—	11.2	5.50
Elementary School Students, Female											—		
SBP participants	110	85	5.1	41 ^	49 ^	63	81	103	126 ^	142 ^	—	<3	2.91
SBP nonparticipants	262	93	6.7	54 ^	61	74	91	110	130	143 ^	—	<3	0.78
Middle School Students											—		
SBP participants	144	81	5.2	26 ^	34 ^	50	74	103	138 ^	162 ^	—	19.4	8.16
SBP nonparticipants	570	75	4.6	22	29	44	67	98	133	158	—	24.5	6.07
Middle School Students, Male											—		
SBP participants	92	89	6.1	37 ^	46 ^	62	84	110	137 ^	154 ^	—	10.0 ^	9.17
SBP nonparticipants	291	87	6.2	34 ^	42	59	81	109	140	161 ^	—	12.4	9.07
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	58	5.3	11 ^	16	29	49	76	111	135 ^	—	41.4	7.64
High School Students											—		
SBP participants	139	78	9.7	30 ^	38 ^	52	72	98	127 ^	146 ^	—	35.2	11.44
SBP nonparticipants	564	72	5.2	16	22	37	61	95	137	170	—	49.6	3.57
High School Students, Male											—		
SBP participants	83	81	11.4	35 ^	42 ^	57	76	100	126 ^	142 ^	—	32.8	15.78
SBP nonparticipants	283	72	7.1	13 ^	19	34	59	96	142	177 ^	—	53.7	5.02
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	73	7.7	19 ^	25	41	63	94	132	161 ^	—	42.5	9.19

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (75 mg and 60 mg, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.26. Usual Daily Vitamin D Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Vitamin D Intakes (mcg)										EAR (mcg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											10		
SBP participants	119	10.3	1.80	4.3 ^	5.1 ^	6.9	9.4	12.7	16.6 ^	19.3 ^	10	55.2	21.36
SBP nonparticipants	240	9.5	1.34	4.6 ^	5.3	6.8	8.8	11.5	14.5	16.8 ^	10	62.8	21.18
9 to 13 Years											10		
SBP participants	220	9.1	1.18	2.7 ^	3.4	5.0	7.6	11.5	16.5	20.3 ^	10	67.3	8.14
SBP nonparticipants	719	7.2	0.57	1.9	2.5	4.0	6.2	9.3	13.2	15.9	10	78.6	3.94
9 to 13 Years, Male											10		
SBP participants	129	8.4	0.82	4.3 ^	5.0 ^	6.3	8.0	10.2	12.3 ^	13.9 ^	10	73.6	18.47
SBP nonparticipants	365	8.6	0.75	2.1 ^	2.9	4.5	7.3	11.1	15.9	19.4 ^	10	69.2	5.03
9 to 13 Years, Female											10		
SBP participants	91	9.9	2.54	1.8 ^	2.5 ^	4.1	7.1	12.3	20.1 ^	27.0 ^	10	66.6	9.78
SBP nonparticipants	354	5.7	0.66	1.8 ^	2.3	3.4	5.1	7.3	9.7	11.6 ^	10	90.9	4.69
14 to 18 Years ^b											10		
SBP participants	172	7.6	0.88	3.1 ^	3.8 ^	5.0	6.9	9.4	12.2 ^	14.5 ^	10	79.6	12.06
SBP nonparticipants	695	7.2	0.82	1.3	1.9	3.3	5.8	9.5	14.3	18.0	10	77.5	4.93
14 to 18 Years, Male ^b											10		
SBP participants	105	9.0	1.48	4.2 ^	4.9 ^	6.3	8.4	11.0	14.0 ^	16.3 ^	10	66.6	20.02
SBP nonparticipants	354	9.1	1.21	1.7 ^	2.4	4.1	7.1	11.9	18.1	23.3 ^	10	67.1	5.76
14 to 18 Years, Female ^b											10		
SBP participants	67	--	--	--	--	--	--	--	--	--	10	--	--
SBP nonparticipants	341	4.8	0.56	1.1 ^	1.6	2.5	4.0	6.3	9.0	11.0 ^	10	93.0	3.89
All Students											—		
SBP participants	511	9.0	0.93	3.4	4.1	5.7	8.1	11.2	15.0	17.8	—	66.7	18.74
SBP nonparticipants	1,654	8.0	0.54	2.1	2.8	4.4	6.8	10.3	14.5	17.6	—	73.2	3.90
All Students, Male											—		
SBP participants	293	9.7	1.09	3.9 ^	4.7	6.3	8.8	12.0	15.8	18.5 ^	—	61.0	15.76
SBP nonparticipants	832	9.3	0.73	2.7	3.4	5.2	8.0	11.9	16.8	20.5	—	64.3	5.05
All Students, Female											—		
SBP participants	218	8.7	1.30	1.9 ^	2.5	4.0	6.7	11.0	17.0	22.1 ^	—	70.8	6.97
SBP nonparticipants	822	6.3	0.56	1.5	2.1	3.3	5.3	8.2	11.6	14.2	—	84.4	4.14

	Vitamin D Intakes (mcg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mcg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	9.6	1.36	3.9 ^	4.7	6.3	8.7	11.9	15.6	18.2 ^	—	61.6	17.10
SBP nonparticipants	520	8.2	0.76	2.6	3.3	4.8	7.2	10.5	14.5	17.4	—	72.1	5.95
Elementary School Students, Male											—		
SBP participants	118	9.2	1.32	4.3 ^	5.0 ^	6.4	8.5	11.2	14.2 ^	16.1 ^	—	65.4	18.23
SBP nonparticipants	258	9.7	1.15	3.2 ^	4.0	5.8	8.4	12.2	17.0	20.5 ^	—	62.0	8.54
Elementary School Students, Female											—		
SBP participants	110	10.2	2.33	2.1 ^	2.8 ^	4.5	7.6	12.7	20.4 ^	26.7 ^	—	64.3	9.58
SBP nonparticipants	262	6.9	0.76	2.1 ^	2.7	4.0	6.1	8.9	12.2	14.7 ^	—	81.8	6.05
Middle School Students											—		
SBP participants	144	8.1	0.76	3.8 ^	4.5 ^	5.8	7.6	9.8	12.4 ^	14.2 ^	—	76.5	11.78
SBP nonparticipants	570	7.4	0.56	2.0	2.6	4.1	6.4	9.6	13.4	16.0	—	77.3	4.89
Middle School Students, Male											—		
SBP participants	92	10.2	1.48	4.8 ^	5.6 ^	7.2	9.5	12.4	15.7 ^	18.2 ^	—	55.1	20.97
SBP nonparticipants	291	8.7	0.88	2.0 ^	2.7	4.5	7.3	11.3	16.3	20.0 ^	—	68.0	5.53
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	5.5	0.36	2.7 ^	3.1	4.0	5.2	6.6	8.2	9.1 ^	—	>97	3.94
High School Students											—		
SBP participants	139	8.1	0.96	2.1 ^	2.9 ^	4.4	7.0	10.5	14.9 ^	18.0 ^	—	72.7	11.49
SBP nonparticipants	564	7.0	0.86	1.5	2.1	3.5	5.8	9.2	13.5	16.9	—	79.1	5.37
High School Students, Male											—		
SBP participants	83	9.8	1.38	2.8 ^	3.7 ^	5.7	8.7	12.8	17.6 ^	20.6 ^	—	59.3	30.53
SBP nonparticipants	283	8.8	1.31	1.9 ^	2.6	4.2	7.0	11.3	17.0	21.6 ^	—	69.3	6.62
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	4.6	0.58	1.3 ^	1.7	2.6	4.1	6.0	8.2	10.0 ^	—	95.0 ^	3.60

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

[^] = Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 97 and 100 percent are displayed as >97.

Table L.27. Usual Daily Vitamin E Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Vitamin E Intakes (mg AT)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By Age/Gender Groups													
6 to 8 Years ^a											6		
SBP participants	119	6.7	0.39	3.6 ^	4.1 ^	5.1	6.4	7.9	9.7 ^	10.9 ^	6	43.0	7.81
SBP nonparticipants	240	7.0	0.33	4.3 ^	4.7	5.6	6.7	8.1	9.6	10.5 ^	6	34.6	8.96
9 to 13 Years											9		
SBP participants	220	7.0	0.35	3.5 ^	4.1	5.1	6.5	8.3	10.4	11.8 ^	9	81.4	4.87
SBP nonparticipants	719	7.2	0.29	4.1	4.6	5.6	6.9	8.4	10.2	11.4	9	81.3	4.92
9 to 13 Years, Male											9		
SBP participants	129	7.2	0.57	3.7 ^	4.3 ^	5.3	6.8	8.6	10.6 ^	12.0 ^	9	79.6	8.20
SBP nonparticipants	365	7.5	0.37	4.2 ^	4.7	5.7	7.1	8.8	10.7	11.9 ^	9	77.4	4.55
9 to 13 Years, Female											9		
SBP participants	91	6.8	0.43	3.5 ^	4.0 ^	5.1	6.4	8.1	9.9 ^	11.2 ^	9	83.6 ^	5.73
SBP nonparticipants	354	6.8	0.33	4.0 ^	4.5	5.4	6.5	7.9	9.4	10.4 ^	9	87.2	8.64
14 to 18 Years ^b											12		
SBP participants	172	7.9	0.67	2.8 ^	3.5 ^	4.8	7.0	9.9	13.6 ^	16.3 ^	12	85.3	4.43
SBP nonparticipants	695	8.1	0.30	4.0	4.6	5.8	7.5	9.7	12.2	14.0	12	89.3	4.32
14 to 18 Years, Male ^b											12		
SBP participants	105	8.8	0.94	3.6 ^	4.3 ^	5.7	7.9	10.9	14.6 ^	17.3 ^	12	81.2 ^	7.67
SBP nonparticipants	354	8.4	0.43	4.6 ^	5.2	6.4	8.0	10.0	12.1	13.7 ^	12	89.4	6.44
14 to 18 Years, Female ^b											12		
SBP participants	67	--	--	--	--	--	--	--	--	--	12	--	--
SBP nonparticipants	341	7.6	0.38	3.5 ^	4.1	5.3	6.9	9.2	11.8	13.7 ^	12	90.7	4.59
All Students											—		
SBP participants	511	7.1	0.24	3.3	3.9	5.0	6.6	8.6	11.0	12.7	—	70.4	2.62
SBP nonparticipants	1,654	7.3	0.18	4.4	4.9	5.8	7.0	8.5	10.0	11.1	—	70.3	2.35
All Students, Male											—		
SBP participants	293	7.5	0.39	3.8 ^	4.3	5.4	7.0	9.0	11.4	13.1 ^	—	66.5	4.37
SBP nonparticipants	832	7.5	0.24	4.4	4.9	5.9	7.2	8.7	10.4	11.6	—	68.2	2.73
All Students, Female											—		
SBP participants	218	6.5	0.28	3.0 ^	3.5	4.6	6.1	8.0	10.1	11.6 ^	—	75.7	2.71
SBP nonparticipants	822	7.0	0.20	4.4	4.8	5.7	6.8	8.1	9.6	10.6	—	72.6	3.15

	Vitamin E Intakes (mg AT)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	6.8	0.29	3.5 ^	4.1	5.1	6.5	8.1	9.9	11.2 ^	—	61.0	4.48
SBP nonparticipants	520	6.8	0.26	4.6	5.0	5.8	6.7	7.7	8.8	9.5	—	58.7	6.74
Elementary School Students, Male											—		
SBP participants	118	7.1	0.41	3.8 ^	4.3 ^	5.4	6.8	8.4	10.2 ^	11.4 ^	—	56.7	6.24
SBP nonparticipants	258	6.8	0.35	4.1 ^	4.6	5.4	6.6	7.9	9.4	10.4 ^	—	59.2	5.53
Elementary School Students, Female											—		
SBP participants	110	6.5	0.41	3.3 ^	3.8 ^	4.8	6.2	7.8	9.7 ^	10.9 ^	—	65.3	5.99
SBP nonparticipants	262	7.1	0.25	4.5 ^	5.0	5.8	6.8	8.1	9.4	10.3 ^	—	55.3	5.75
Middle School Students											—		
SBP participants	144	6.9	0.52	3.4 ^	3.9 ^	4.9	6.4	8.2	10.5 ^	12.1 ^	—	84.3	5.83
SBP nonparticipants	570	6.7	0.25	3.5	4.0	5.0	6.4	8.1	9.9	11.2	—	86.5	4.72
Middle School Students, Male											—		
SBP participants	92	7.4	0.98	3.7 ^	4.3 ^	5.4	6.9	8.9	11.0 ^	12.5 ^	—	80.4 ^	11.25
SBP nonparticipants	291	7.2	0.35	4.4 ^	4.9	5.8	7.0	8.4	9.8	10.8 ^	—	86.2	9.03
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	6.0	0.37	2.6 ^	3.1	4.1	5.5	7.3	9.4	10.8 ^	—	89.3	4.43
High School Students											—		
SBP participants	139	8.2	0.74	3.0 ^	3.7 ^	5.1	7.2	10.2	13.9 ^	16.5 ^	—	83.7	5.28
SBP nonparticipants	564	8.0	0.35	4.0	4.7	5.8	7.5	9.6	12.0	13.8	—	89.6	5.12
High School Students, Male											—		
SBP participants	83	9.0	1.15	3.7 ^	4.4 ^	5.9	8.1	11.1	14.8 ^	17.3 ^	—	79.6 ^	10.15
SBP nonparticipants	283	8.4	0.52	4.3 ^	5.0	6.2	7.9	10.0	12.4	14.2 ^	—	87.9	8.03
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	7.5	0.42	3.6 ^	4.2	5.4	7.0	9.0	11.2	12.9 ^	—	92.6	4.35

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.28. Usual Daily Vitamin B₆ Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Vitamin B ₆ Intakes (mg)										EAR (mg) % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											0.5		
SBP participants	119	1.8	0.09	1.1 ^	1.2 ^	1.4	1.7	2.1	2.5 ^	2.8 ^	0.5	<3	0.05
SBP nonparticipants	240	1.9	0.08	1.2 ^	1.3	1.5	1.8	2.2	2.6	2.8 ^	0.5	<3	0.00
9 to 13 Years											0.8		
SBP participants	220	2.0	0.13	1.2 ^	1.3	1.6	1.9	2.4	2.8	3.2 ^	0.8	<3	0.42
SBP nonparticipants	719	1.9	0.05	1.1	1.3	1.5	1.8	2.2	2.6	2.9	0.8	<3	0.80
9 to 13 Years, Male											0.8		
SBP participants	129	2.1	0.16	1.3 ^	1.4 ^	1.7	2.1	2.5	2.9 ^	3.3 ^	0.8	<3	0.44
SBP nonparticipants	365	2.0	0.11	1.3 ^	1.4	1.7	2.0	2.3	2.7	3.0 ^	0.8	<3	0.36
9 to 13 Years, Female											0.8		
SBP participants	91	1.9	0.15	1.1 ^	1.2 ^	1.5	1.8	2.3	2.7 ^	3.0 ^	0.8	<3	1.06
SBP nonparticipants	354	1.8	0.14	1.0 ^	1.1	1.3	1.7	2.1	2.5	2.8 ^	0.8	<3	1.53
14 to 18 Years ^b											—		
SBP participants	172	2.1	0.17	0.8 ^	0.9 ^	1.3	1.8	2.5	3.5 ^	4.3 ^	—	15.1	7.32
SBP nonparticipants	695	2.1	0.08	1.1	1.3	1.5	2.0	2.4	3.0	3.4	—	4.1	2.86
14 to 18 Years, Male ^b											1.1		
SBP participants	105	2.3	0.21	0.8 ^	1.0 ^	1.4	2.0	2.8	3.9 ^	4.6 ^	1.1	13.9 ^	6.98
SBP nonparticipants	354	2.3	0.13	1.3 ^	1.5	1.8	2.2	2.8	3.3	3.8 ^	1.1	<3	2.72
14 to 18 Years, Female ^b											1.0		
SBP participants	67	--	--	--	--	--	--	--	--	--	1.0	--	--
SBP nonparticipants	341	1.7	0.07	1.0 ^	1.1	1.3	1.6	2.0	2.4	2.7 ^	1.0	6.2	5.11
All Students											—		
SBP participants	511	1.9	0.06	1.1	1.3	1.5	1.9	2.3	2.7	3.0	—	<3	1.35
SBP nonparticipants	1,654	1.9	0.04	1.2	1.3	1.6	1.9	2.2	2.6	2.9	—	<3	0.76
All Students, Male											—		
SBP participants	293	2.1	0.07	1.3 ^	1.4	1.7	2.0	2.4	2.8	3.2 ^	—	<3	0.90
SBP nonparticipants	832	2.1	0.06	1.3	1.4	1.7	2.0	2.4	2.8	3.1	—	<3	0.80
All Students, Female											—		
SBP participants	218	1.8	0.08	1.1 ^	1.2	1.4	1.7	2.1	2.4	2.7 ^	—	<3	2.48
SBP nonparticipants	822	1.8	0.08	1.2	1.3	1.5	1.7	2.0	2.4	2.6	—	<3	0.99

Vitamin B ₆ Intakes (mg)											EAR (mg) % Below EAR SE		
Percentiles													
N	Mean	SE	5	10	25	50	75	90	95				
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	1.9	0.09	1.1 ^	1.2	1.5	1.8	2.2	2.6	2.9 ^	—	<3	0.56
SBP nonparticipants	520	1.9	0.06	1.3	1.4	1.6	1.8	2.1	2.5	2.7	—	<3	0.15
Elementary School Students, Male											—		
SBP participants	118	2.0	0.10	1.2 ^	1.3 ^	1.6	1.9	2.3	2.7 ^	3.0 ^	—	<3	0.27
SBP nonparticipants	258	2.0	0.09	1.3 ^	1.4	1.7	1.9	2.2	2.5	2.7 ^	—	<3	0.26
Elementary School Students, Female											—		
SBP participants	110	1.8	0.11	1.1 ^	1.2 ^	1.4	1.7	2.1	2.4 ^	2.7 ^	—	<3	1.27
SBP nonparticipants	262	1.8	0.11	1.2 ^	1.3	1.5	1.8	2.1	2.4	2.6 ^	—	<3	0.19
Middle School Students											—		
SBP participants	144	2.2	0.21	1.0 ^	1.2 ^	1.5	2.0	2.6	3.3 ^	3.9 ^	—	<3	1.67
SBP nonparticipants	570	1.8	0.05	1.0	1.1	1.4	1.7	2.1	2.6	2.8	—	<3	2.01
Middle School Students, Male											—		
SBP participants	92	2.5	0.32	1.2 ^	1.4 ^	1.8	2.3	3.0	3.8 ^	4.4 ^	—	<3	1.88
SBP nonparticipants	291	1.9	0.06	1.2 ^	1.3	1.6	1.9	2.2	2.6	2.8 ^	—	<3	1.18
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	1.6	0.08	0.8 ^	0.9	1.2	1.5	1.9	2.4	2.7 ^	—	6.4 ^	5.22
High School Students											—		
SBP participants	139	2.1	0.19	0.8 ^	0.9 ^	1.3	1.8	2.6	3.6 ^	4.3 ^	—	14.4	7.81
SBP nonparticipants	564	2.1	0.09	1.1	1.2	1.6	2.0	2.5	3.1	3.5	—	4.3	3.12
High School Students, Male											—		
SBP participants	83	2.3	0.26	0.8 ^	1.0 ^	1.4	2.0	2.9	3.9 ^	4.6 ^	—	13.9 ^	10.52
SBP nonparticipants	283	2.4	0.15	1.3 ^	1.4	1.8	2.2	2.8	3.4	3.9 ^	—	<3	3.10
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	1.7	0.09	0.9 ^	1.0	1.3	1.6	2.1	2.6	2.9 ^	—	10.0	4.62

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (1.1 mg for both groups).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.29. Usual Daily Vitamin B₁₂ Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Vitamin B ₁₂ Intakes (mcg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mcg)	% Below EAR	SE
By Age/Gender Groups													
6 to 8 Years ^a											1.0		
SBP participants	118	5.2	0.25	3.1 ^	3.4 ^	4.1	5.0	6.1	7.3 ^	8.1 ^	1.0	<3	0.01
SBP nonparticipants	240	5.2	0.24	2.7 ^	3.1	4.0	5.0	6.2	7.4	8.3 ^	1.0	<3	0.10
9 to 13 Years											1.5		
SBP participants	220	5.6	0.33	3.3 ^	3.7	4.5	5.5	6.6	7.7	8.5 ^	1.5	<3	0.24
SBP nonparticipants	719	5.0	0.32	2.0	2.4	3.3	4.6	6.2	8.1	9.3	1.5	<3	1.23
9 to 13 Years, Male											1.5		
SBP participants	128	5.9	0.41	3.7 ^	4.1 ^	4.8	5.7	6.8	8.0 ^	8.7 ^	1.5	<3	0.04
SBP nonparticipants	365	5.4	0.42	2.3 ^	2.7	3.6	4.9	6.6	8.6	10.0 ^	1.5	<3	0.70
9 to 13 Years, Female											1.5		
SBP participants	91	5.4	0.48	2.8 ^	3.2 ^	4.0	5.1	6.5	8.1 ^	9.2 ^	1.5	<3	0.37
SBP nonparticipants	354	4.5	0.39	1.9 ^	2.3	3.1	4.2	5.5	6.9	8.0 ^	1.5	<3	1.84
14 to 18 Years ^b											2.0		
SBP participants	172	5.7	0.55	2.4 ^	2.9 ^	3.8	5.2	7.0	9.1 ^	10.6 ^	2.0	<3	3.04
SBP nonparticipants	695	5.2	0.23	1.5	2.0	3.0	4.5	6.6	9.1	11.0	2.0	10.4	2.53
14 to 18 Years, Male ^b											2.0		
SBP participants	105	6.7	0.85	2.2 ^	2.8 ^	4.0	5.8	8.4	11.7 ^	14.1 ^	2.0	3.4 ^	5.34
SBP nonparticipants	354	6.0	0.33	2.1 ^	2.7	3.8	5.4	7.7	10.2	12.0 ^	2.0	4.1 ^	3.10
14 to 18 Years, Female ^b											2.0		
SBP participants	67	--	--	--	--	--	--	--	--	--	2.0	--	--
SBP nonparticipants	341	3.9	0.20	1.2 ^	1.5	2.3	3.4	5.0	7.0	8.4 ^	2.0	19.4	4.08
All Students											—		
SBP participants	502	5.3	0.20	3.1	3.4	4.1	5.1	6.2	7.3	8.2	—	<3	0.25
SBP nonparticipants	1,654	5.1	0.18	2.0	2.4	3.3	4.7	6.4	8.3	9.7	—	2.4	0.63
All Students, Male											—		
SBP participants	287	5.7	0.27	3.5 ^	3.9	4.6	5.5	6.6	7.8	8.5 ^	—	<3	0.10
SBP nonparticipants	832	5.6	0.20	2.3	2.8	3.8	5.2	6.9	8.9	10.3	—	<3	0.58
All Students, Female											—		
SBP participants	218	5.0	0.20	2.9 ^	3.2	3.9	4.8	5.8	6.9	7.7 ^	—	<3	0.46
SBP nonparticipants	822	4.5	0.24	1.7	2.1	2.9	4.1	5.6	7.3	8.5	—	4.3	1.53

	Vitamin B ₁₂ Intakes (mcg)										EAR (mcg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	225	5.2	0.25	3.0 ^	3.4	4.1	5.1	6.2	7.3	8.1 ^	—	<3	0.08
SBP nonparticipants	520	5.2	0.24	2.2	2.7	3.6	4.8	6.4	8.2	9.4	—	<3	0.41
Elementary School Students, Male											—		
SBP participants	117	5.4	0.34	3.4 ^	3.8 ^	4.4	5.3	6.3	7.3 ^	8.0 ^	—	<3	0.04
SBP nonparticipants	258	5.6	0.31	2.5 ^	3.0	3.9	5.2	6.9	8.9	10.3 ^	—	<3	0.24
Elementary School Students, Female											—		
SBP participants	110	5.3	0.31	3.2 ^	3.6 ^	4.3	5.1	6.1	7.1 ^	7.9 ^	—	<3	0.04
SBP nonparticipants	262	4.8	0.32	2.1 ^	2.5	3.4	4.5	5.9	7.4	8.4 ^	—	<3	0.89
Middle School Students											—		
SBP participants	144	5.7	0.44	2.4 ^	2.9 ^	3.9	5.3	7.1	9.1 ^	10.6 ^	—	<3	1.33
SBP nonparticipants	570	4.6	0.15	2.4	2.8	3.5	4.5	5.6	6.7	7.4	—	<3	0.88
Middle School Students, Male											—		
SBP participants	92	6.5	0.68	3.0 ^	3.6 ^	4.7	6.1	8.0	9.9 ^	11.4 ^	—	<3	0.41
SBP nonparticipants	291	5.0	0.19	2.9 ^	3.3	4.0	4.9	5.9	6.9	7.6 ^	—	<3	0.50
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	4.1	0.29	2.0 ^	2.3	3.0	3.9	4.9	6.1	6.8 ^	—	<3	3.92
High School Students											—		
SBP participants	139	6.0	0.65	2.3 ^	2.8 ^	3.8	5.4	7.5	10.0 ^	11.7 ^	—	<3	3.23
SBP nonparticipants	564	5.3	0.29	1.5	2.0	3.0	4.6	6.8	9.5	11.5	—	9.9	2.34
High School Students, Male											—		
SBP participants	83	7.0	1.07	2.8 ^	3.4 ^	4.5	6.3	8.7	11.5 ^	13.4 ^	—	<3	3.88
SBP nonparticipants	283	6.2	0.40	2.2 ^	2.8	3.9	5.6	7.9	10.5	12.5 ^	—	3.5 ^	2.77
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	3.9	0.30	1.1 ^	1.4	2.2	3.3	4.9	6.9	8.5 ^	—	20.5	3.81

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.30. Usual Daily Folate Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Folate Intakes (mcg DFE)										EAR (mcg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											160		
SBP participants	119	503	25.4	275 ^	312 ^	382	475	592	728 ^	825 ^	160	<3	0.17
SBP nonparticipants	240	541	24.3	330 ^	367	438	526	628	731	807 ^	160	<3	0.07
9 to 13 Years											250		
SBP participants	220	556	27.4	291 ^	334	414	528	667	814	921 ^	250	<3	1.88
SBP nonparticipants	719	562	26.4	260	304	394	520	681	870	1,004	250	4.0	2.36
9 to 13 Years, Male											250		
SBP participants	129	567	34.2	357 ^	393 ^	459	550	656	762 ^	840 ^	250	<3	1.30
SBP nonparticipants	365	584	31.1	277 ^	322	415	545	707	895	1,021 ^	250	3.0 ^	2.08
9 to 13 Years, Female											250		
SBP participants	91	533	39.4	356 ^	387 ^	447	519	605	695 ^	756 ^	250	<3	0.62
SBP nonparticipants	354	536	42.2	243 ^	285	367	491	652	838	983 ^	250	5.5 ^	4.60
14 to 18 Years ^b											330		
SBP participants	172	591	55.8	207 ^	257 ^	359	524	744	1,017 ^	1,214 ^	330	20.6	6.68
SBP nonparticipants	695	548	30.2	216	259	350	488	674	906	1,082	330	21.3	4.80
14 to 18 Years, Male ^b											330		
SBP participants	105	680	89.7	229 ^	282 ^	399	580	847	1,199 ^	1,458 ^	330	16.3 ^	5.43
SBP nonparticipants	354	620	34.6	252 ^	302	402	555	765	1,013	1,208 ^	330	13.5	5.32
14 to 18 Years, Female ^b											330		
SBP participants	67	--	--	--	--	--	--	--	--	--	330	--	--
SBP nonparticipants	341	452	42.5	186 ^	223	295	404	557	744	881 ^	330	33.0	6.52
All Students											—		
SBP participants	511	544	20.7	286	326	405	515	650	797	901	—	3.8 ^	2.74
SBP nonparticipants	1,654	553	13.4	257	300	385	510	672	859	992	—	6.2	1.77
All Students, Male											—		
SBP participants	293	595	31.0	375 ^	411	483	576	684	800	882 ^	—	<3	1.74
SBP nonparticipants	832	575	21.6	266	311	404	535	699	886	1,021	—	5.2	1.78
All Students, Female											—		
SBP participants	218	480	20.8	249 ^	288	362	459	575	698	783 ^	—	6.9 ^	3.77
SBP nonparticipants	822	523	17.7	241	281	362	479	634	821	959	—	8.0	2.90

	Folate Intakes (mcg DFE)										EAR (mcg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	530	21.9	277 ^	316	394	503	635	780	878 ^	—	<3	1.40
SBP nonparticipants	520	561	19.0	279	326	411	528	676	838	948	—	<3	0.80
Elementary School Students, Male											—		
SBP participants	118	569	29.5	356 ^	392 ^	460	551	654	768 ^	850 ^	—	<3	0.60
SBP nonparticipants	258	559	30.5	293 ^	340	425	536	668	813	906 ^	—	<3	0.89
Elementary School Students, Female											—		
SBP participants	110	470	27.0	287 ^	319 ^	377	452	544	646 ^	711 ^	—	<3	1.51
SBP nonparticipants	262	567	25.4	271 ^	314	401	525	685	872	1,008 ^	—	<3	1.18
Middle School Students											—		
SBP participants	144	589	50.2	256 ^	302 ^	395	536	716	945 ^	1,115 ^	—	6.5 ^	4.44
SBP nonparticipants	570	506	18.8	237	276	355	470	617	783	898	—	9.1	3.52
Middle School Students, Male											—		
SBP participants	92	658	87.1	276 ^	329 ^	438	593	809	1,056 ^	1,240 ^	—	4.7 ^	3.85
SBP nonparticipants	291	533	25.4	234 ^	277	367	492	653	836	969 ^	—	9.1	4.27
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	464	24.3	254 ^	286	351	440	548	673	755 ^	—	6.8 ^	4.59
High School Students											—		
SBP participants	139	614	62.9	213 ^	271 ^	379	548	772	1,050 ^	1,237 ^	—	17.6	7.07
SBP nonparticipants	564	551	36.4	213	257	348	488	683	922	1,109	—	21.6	5.98
High School Students, Male											—		
SBP participants	83	693	108.8	238 ^	293 ^	410	596	868	1,220 ^	1,463 ^	—	14.9 ^	9.63
SBP nonparticipants	283	612	41.1	247 ^	297	396	549	754	1,007	1,199 ^	—	14.4	6.66
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	465	55.6	170 ^	206	290	409	576	781	946 ^	—	33.6	10.08

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (320 mcg for both groups).

DFE = dietary folate equivalents; DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.31. Usual Daily Niacin Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Niacin Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR ^a	SE
By Age/Gender Groups													
6 to 8 Years ^b											6		
SBP participants	119	21	0.8	14 ^	15 ^	18	20	23	26 ^	28 ^	6	<3	0.00
SBP nonparticipants	240	21	0.7	15 ^	16	18	21	24	27	29 ^	6	<3	0.00
9 to 13 Years											9		
SBP participants	220	25	1.1	18 ^	19	21	24	27	30	32 ^	9	<3	0.02
SBP nonparticipants	719	22	0.7	15	16	19	22	26	29	32	9	<3	0.17
9 to 13 Years, Male											9		
SBP participants	129	26	1.4	18 ^	19 ^	22	25	29	32 ^	35 ^	9	<3	0.10
SBP nonparticipants	365	23	0.7	15 ^	17	20	23	27	30	33 ^	9	<3	0.16
9 to 13 Years, Female											9		
SBP participants	91	23	1.2	17 ^	18 ^	20	23	26	29 ^	31 ^	9	<3	0.03
SBP nonparticipants	354	21	1.1	14 ^	15	18	21	24	28	30 ^	9	<3	0.84
14 to 18 Years ^c											—		
SBP participants	172	25	1.7	12 ^	14 ^	18	23	31	40 ^	46 ^	—	4.4 ^	3.23
SBP nonparticipants	695	26	0.8	15	17	21	25	30	35	39	—	<3	0.70
14 to 18 Years, Male ^c											12		
SBP participants	105	29	2.3	14 ^	16 ^	20	26	35	45 ^	52 ^	12	<3	2.51
SBP nonparticipants	354	28	1.2	18 ^	20	23	28	33	38	42 ^	12	<3	0.52
14 to 18 Years, Female ^c											11		
SBP participants	67	--	--	--	--	--	--	--	--	--	11	--	--
SBP nonparticipants	341	22	0.7	13 ^	15	17	21	25	30	33 ^	11	<3	1.50
All Students											—		
SBP participants	511	23	0.6	16	17	20	23	26	29	32	—	<3	0.13
SBP nonparticipants	1,654	23	0.4	16	17	20	23	26	29	31	—	<3	0.14
All Students, Male											—		
SBP participants	285	24	0.6	17 ^	18	21	24	27	31	33 ^	—	<3	0.06
SBP nonparticipants	832	24	0.5	16	18	20	24	27	31	34	—	<3	0.27
All Students, Female											—		
SBP participants	218	21	0.9	14 ^	16	18	21	24	27	29 ^	—	<3	0.39
SBP nonparticipants	822	21	0.6	15	16	18	21	24	27	29	—	<3	0.15

	Niacin Intakes (mg)										EAR (mg)	% Below EAR ^a	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	22	0.7	15 ^	17	19	22	25	28	31 ^	—	<3	0.06
SBP nonparticipants	520	22	0.6	15	16	18	21	25	28	30	—	<3	0.10
Elementary School Students, Male											—		
SBP participants	117	23	0.7	16 ^	17 ^	20	23	26	29 ^	31 ^	—	<3	0.03
SBP nonparticipants	258	22	0.7	16 ^	17	19	22	25	28	29 ^	—	<3	0.17
Elementary School Students, Female											—		
SBP participants	110	21	1.2	15 ^	16 ^	18	21	24	27 ^	29 ^	—	<3	0.14
SBP nonparticipants	260	21	0.9	15 ^	16	18	21	24	27	29 ^	—	<3	0.08
Middle School Students											—		
SBP participants	144	25	2.0	15 ^	17 ^	20	24	29	35 ^	39 ^	—	<3	0.36
SBP nonparticipants	570	22	0.6	14	15	18	22	26	30	33	—	<3	0.56
Middle School Students, Male											—		
SBP participants	92	29	2.9	16 ^	18 ^	22	28	35	42 ^	48 ^	—	<3	0.57
SBP nonparticipants	291	23	0.6	15 ^	17	19	23	27	31	34 ^	—	<3	0.37
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	20	1.0	14 ^	15	17	20	23	26	28 ^	—	<3	1.82
High School Students											—		
SBP participants	139	26	1.8	12 ^	14 ^	18	24	31	40 ^	46 ^	—	3.70 ^	3.25
SBP nonparticipants	564	26	0.9	16	18	21	25	30	35	39	—	<3	0.77
High School Students, Male											—		
SBP participants	83	29	2.7	14 ^	16 ^	21	27	34	43 ^	49 ^	—	<3	2.43
SBP nonparticipants	283	28	1.4	18 ^	20	23	28	33	38	41 ^	—	<3	0.70
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	22	0.8	13 ^	14	17	21	26	31	35 ^	—	<3	2.01

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^bThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^cIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.32. Usual Daily Riboflavin Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Riboflavin Intakes (mg)										EAR (mg) % Below EAR SE		
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											0.5		
SBP participants	117	2.1	0.06	1.3 ^	1.5 ^	1.7	2.1	2.5	2.8 ^	3.1 ^	0.5	<3	0.00
SBP nonparticipants	240	2.1	0.08	1.5 ^	1.6	1.9	2.1	2.4	2.6	2.8 ^	0.5	<3	0.01
9 to 13 Years											0.8		
SBP participants	217	2.2	0.07	1.3 ^	1.5	1.8	2.1	2.5	2.9	3.2 ^	0.8	<3	0.04
SBP nonparticipants	719	2.0	0.09	1.2	1.3	1.6	2.0	2.4	2.9	3.2	0.8	<3	0.49
9 to 13 Years, Male											0.8		
SBP participants	129	2.3	0.11	1.6 ^	1.8 ^	2.0	2.3	2.6	2.9 ^	3.1 ^	0.8	<3	0.07
SBP nonparticipants	365	2.1	0.08	1.2 ^	1.4	1.7	2.1	2.5	3.0	3.3 ^	0.8	<3	0.19
9 to 13 Years, Female											0.8		
SBP participants	91	2.0	0.08	1.3 ^	1.4 ^	1.6	2.0	2.3	2.7 ^	3.0 ^	0.8	<3	0.05
SBP nonparticipants	354	1.9	0.16	1.2 ^	1.3	1.5	1.9	2.3	2.7	2.9 ^	0.8	<3	0.87
14 to 18 Years ^b											—		
SBP participants	172	2.2	0.16	1.1 ^	1.3 ^	1.6	2.1	2.7	3.3 ^	3.7 ^	—	3.0 ^	2.44
SBP nonparticipants	695	2.0	0.09	0.9	1.1	1.4	1.9	2.5	3.2	3.8	—	8.3	2.35
14 to 18 Years, Male ^b											1.1		
SBP participants	105	2.6	0.24	1.4 ^	1.6 ^	1.9	2.4	3.1	3.8 ^	4.2 ^	1.1	<3	3.10
SBP nonparticipants	354	2.4	0.13	1.2 ^	1.3	1.7	2.2	2.9	3.6	4.1 ^	1.1	3.7 ^	2.79
14 to 18 Years, Female ^b											0.9		
SBP participants	67	--	--	--	--	--	--	--	--	--	0.9	--	--
SBP nonparticipants	341	1.6	0.08	0.8 ^	0.9	1.1	1.5	1.9	2.5	2.8 ^	0.9	9.8	3.60
All Students											—		
SBP participants	501	2.1	0.05	1.3	1.5	1.7	2.1	2.5	2.9	3.2	—	<3	0.10
SBP nonparticipants	1,654	2.1	0.05	1.1	1.3	1.6	2.0	2.5	3.0	3.3	—	<3	0.50
All Students, Male											—		
SBP participants	284	2.3	0.07	1.4 ^	1.6	1.9	2.2	2.6	3.0	3.3 ^	—	<3	0.08
SBP nonparticipants	832	2.2	0.06	1.2	1.4	1.7	2.1	2.6	3.1	3.5	—	<3	0.44
All Students, Female											—		
SBP participants	217	2.0	0.05	1.2 ^	1.4	1.6	1.9	2.3	2.6	2.9 ^	—	<3	0.09
SBP nonparticipants	822	1.9	0.08	1.0	1.2	1.4	1.8	2.2	2.7	3.1	—	<3	0.92

Riboflavin Intakes (mg)													
Percentiles													
N	Mean	SE	5	10	25	50	75	90	95				
By School Type and Gender													
Elementary School Students											—		
SBP participants	226	2.2	0.07	1.3 ^	1.5	1.7	2.1	2.5	2.9	3.2 ^	—	<3	0.05
SBP nonparticipants	520	2.1	0.07	1.3	1.4	1.7	2.1	2.5	2.9	3.2	—	<3	0.07
Elementary School Students, Male											—		
SBP participants	117	2.3	0.08	1.4 ^	1.6 ^	1.9	2.2	2.6	3.1 ^	3.4 ^	—	<3	0.00
SBP nonparticipants	258	2.2	0.07	1.4 ^	1.5	1.8	2.2	2.5	2.9	3.2 ^	—	<3	0.06
Elementary School Students, Female											—		
SBP participants	109	2.0	0.07	1.2 ^	1.4 ^	1.6	1.9	2.3	2.7 ^	3.0 ^	—	<3	0.04
SBP nonparticipants	262	2.1	0.10	1.2 ^	1.4	1.6	2.0	2.4	2.8	3.1 ^	—	<3	0.14
Middle School Students											—		
SBP participants	144	2.2	0.12	1.2 ^	1.4 ^	1.7	2.1	2.6	3.2 ^	3.6 ^	—	<3	0.70
SBP nonparticipants	570	1.9	0.06	1.0	1.2	1.5	1.8	2.3	2.7	3.0	—	<3	1.12
Middle School Students, Male											—		
SBP participants	92	2.5	0.18	1.4 ^	1.6 ^	2.0	2.4	3.0	3.6 ^	3.9 ^	—	<3	0.63
SBP nonparticipants	291	2.1	0.07	1.1 ^	1.3	1.6	2.0	2.4	2.9	3.2 ^	—	<3	1.19
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	1.6	0.08	1.0 ^	1.1	1.3	1.6	1.9	2.2	2.4 ^	—	<3	2.25
High School Students											—		
SBP participants	139	2.3	0.18	1.1 ^	1.3 ^	1.6	2.2	2.8	3.5 ^	3.9 ^	—	4.1 ^	2.32
SBP nonparticipants	564	2.1	0.10	0.9	1.1	1.4	1.9	2.6	3.3	3.9	—	8.0	2.64
High School Students, Male											—		
SBP participants	83	2.7	0.32	1.1 ^	1.3 ^	1.8	2.4	3.3	4.3 ^	5.0 ^	—	4.8 ^	3.47
SBP nonparticipants	283	2.4	0.15	1.2 ^	1.4	1.7	2.2	2.9	3.7	4.2 ^	—	3.5 ^	2.89
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	1.6	0.09	0.7 ^	0.9	1.1	1.5	2.0	2.5	2.9 ^	—	11.7	3.78

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.33. Usual Daily Thiamin Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Thiamin Intakes (mg)												
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95	EAR (mg)	% Below EAR	SE
By Age/Gender Groups													
6 to 8 Years ^a											0.5		
SBP participants	119	1.6	0.06	1.0 ^	1.1 ^	1.3	1.6	1.8	2.1 ^	2.3 ^	0.5	<3	0.00
SBP nonparticipants	240	1.6	0.06	1.0 ^	1.1	1.3	1.6	1.9	2.2	2.5 ^	0.5	<3	0.01
9 to 13 Years											0.7		
SBP participants	220	1.7	0.05	1.2 ^	1.3	1.5	1.7	1.9	2.1	2.3 ^	0.7	<3	0.01
SBP nonparticipants	719	1.6	0.05	0.9	1.1	1.3	1.6	1.9	2.2	2.5	0.7	<3	0.71
9 to 13 Years, Male											0.7		
SBP participants	129	1.8	0.06	1.2 ^	1.3 ^	1.5	1.8	2.0	2.3 ^	2.5 ^	0.7	<3	0.06
SBP nonparticipants	365	1.7	0.05	1.0 ^	1.1	1.3	1.6	2.0	2.3	2.5 ^	0.7	<3	0.62
9 to 13 Years, Female											0.7		
SBP participants	91	1.6	0.07	1.2 ^	1.3 ^	1.4	1.6	1.8	2.0 ^	2.2 ^	0.7	<3	0.10
SBP nonparticipants	354	1.5	0.10	0.9 ^	1.0	1.2	1.5	1.8	2.2	2.4 ^	0.7	<3	1.60
14 to 18 Years ^b											—		
SBP participants	172	1.8	0.12	0.8 ^	1.0 ^	1.2	1.6	2.2	2.9 ^	3.4 ^	—	10.4 ^	6.24
SBP nonparticipants	695	1.7	0.05	0.9	1.0	1.2	1.6	2.0	2.5	2.8	—	8.5	3.48
14 to 18 Years, Male ^b											1.0		
SBP participants	105	2.1	0.17	0.9 ^	1.0 ^	1.4	1.9	2.5	3.3 ^	3.9 ^	1.0	8.3 ^	3.55
SBP nonparticipants	354	1.9	0.08	1.1 ^	1.2	1.5	1.8	2.2	2.7	3.0 ^	1.0	<3	2.83
14 to 18 Years, Female ^b											0.9		
SBP participants	67	--	--	--	--	--	--	--	--	--	0.9	--	--
SBP nonparticipants	341	1.4	0.07	0.7 ^	0.8	1.0	1.3	1.7	2.1	2.4 ^	0.9	16.2	5.38
All Students											—		
SBP participants	511	1.7	0.05	1.1	1.2	1.4	1.6	1.9	2.2	2.4	—	<3	0.57
SBP nonparticipants	1,654	1.6	0.03	1.0	1.1	1.3	1.6	1.9	2.2	2.5	—	1.4	0.79
All Students, Male											—		
SBP participants	293	1.8	0.06	1.2 ^	1.3	1.5	1.8	2.1	2.4	2.6 ^	—	<3	0.45
SBP nonparticipants	832	1.7	0.04	1.0	1.2	1.4	1.7	2.0	2.4	2.6	—	<3	0.85
All Students, Female											—		
SBP participants	218	1.5	0.05	1.1 ^	1.1	1.3	1.5	1.7	1.9	2.0 ^	—	<3	0.68
SBP nonparticipants	822	1.5	0.04	0.9	1.0	1.2	1.5	1.7	2.1	2.3	—	<3	1.38

	Thiamin Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	1.6	0.05	1.1 ^	1.2	1.4	1.6	1.9	2.2	2.4 ^	—	<3	0.13
SBP nonparticipants	520	1.6	0.05	1.1	1.2	1.4	1.6	1.9	2.2	2.3	—	<3	0.15
Elementary School Students, Male											—		
SBP participants	118	1.7	0.06	1.1 ^	1.3 ^	1.4	1.7	2.0	2.3 ^	2.5 ^	—	<3	0.10
SBP nonparticipants	258	1.7	0.06	1.1 ^	1.2	1.4	1.7	1.9	2.2	2.4 ^	—	<3	0.39
Elementary School Students, Female											—		
SBP participants	110	1.5	0.05	1.1 ^	1.2 ^	1.3	1.5	1.7	1.9 ^	2.1 ^	—	<3	0.18
SBP nonparticipants	262	1.6	0.06	1.1 ^	1.2	1.3	1.6	1.8	2.1	2.3 ^	—	<3	0.14
Middle School Students											—		
SBP participants	144	1.7	0.10	1.0 ^	1.1 ^	1.3	1.7	2.0	2.5 ^	2.8 ^	—	<3	1.11
SBP nonparticipants	570	1.5	0.04	0.9	1.0	1.2	1.5	1.8	2.2	2.4	—	<3	2.26
Middle School Students, Male											—		
SBP participants	92	1.9	0.16	1.0 ^	1.2 ^	1.5	1.8	2.3	2.8 ^	3.1 ^	—	<3	0.97
SBP nonparticipants	291	1.6	0.05	0.9 ^	1.1	1.3	1.6	1.9	2.2	2.5 ^	—	<3	2.08
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	1.4	0.06	0.8 ^	0.9	1.1	1.3	1.6	1.9	2.1 ^	—	<3	3.60
High School Students											—		
SBP participants	139	1.9	0.14	0.8 ^	1.0 ^	1.3	1.7	2.3	3.0 ^	3.5 ^	—	9.6 ^	5.96
SBP nonparticipants	564	1.7	0.07	0.8	1.0	1.2	1.6	2.1	2.6	2.9	—	8.9	4.45
High School Students, Male											—		
SBP participants	83	2.1	0.21	0.9 ^	1.1 ^	1.4	1.9	2.6	3.4 ^	3.9 ^	—	8.2 ^	4.04
SBP nonparticipants	283	1.9	0.10	1.1 ^	1.2	1.5	1.8	2.3	2.7	3.1 ^	—	3.5 ^	3.93
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	1.4	0.08	0.7 ^	0.8	1.0	1.3	1.7	2.2	2.5 ^	—	17.7	6.16

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The EAR for these students is the same as the EAR for students 14 to 18 years.

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.34. Usual Daily Calcium Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Calcium Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											800		
SBP participants	119	1,124	34.1	805 ^	873 ^	980	1,116	1,257	1,387 ^	1,478 ^	800	4.7 ^	5.43
SBP nonparticipants	240	1,166	49.6	665 ^	755	924	1,134	1,374	1,615	1,787 ^	800	13.2	5.03
9 to 13 Years											1100		
SBP participants	220	1,157	46.2	826 ^	892	1,007	1,145	1,293	1,438	1,527 ^	1100	41.6	16.10
SBP nonparticipants	719	1,040	49.3	542	628	792	1,003	1,243	1,497	1,661	1100	61.4	5.78
9 to 13 Years, Male											1100		
SBP participants	129	1,214	39.0	715 ^	815 ^	977	1,186	1,419	1,655 ^	1,800 ^	1100	39.5	4.86
SBP nonparticipants	365	1,092	52.3	612 ^	696	858	1,062	1,289	1,525	1,671 ^	1100	54.7	6.91
9 to 13 Years, Female											1100		
SBP participants	91	1,102	75.6	648 ^	727 ^	878	1,066	1,289	1,524 ^	1,682 ^	1100	54.5	10.44
SBP nonparticipants	354	969	80.8	431 ^	516	680	912	1,193	1,491	1,709 ^	1100	67.8	7.68
14 to 18 Years ^b											1100		
SBP participants	172	1,213	81.1	592 ^	696 ^	888	1,157	1,471	1,811 ^	2,033 ^	1100	44.4	8.06
SBP nonparticipants	695	1,094	40.6	438	532	724	1,004	1,355	1,764	2,057	1100	57.5	2.98
14 to 18 Years, Male ^b											1100		
SBP participants	105	1,401	114.6	705 ^	823 ^	1,053	1,343	1,690	2,058 ^	2,289 ^	1100	28.9	22.74
SBP nonparticipants	354	1,266	61.5	519 ^	630	849	1,165	1,574	2,023	2,354 ^	1100	44.3	4.17
14 to 18 Years, Female ^b											1100		
SBP participants	67	--	--	--	--	--	--	--	--	--	1100	--	--
SBP nonparticipants	341	859	37.9	396 ^	473	616	810	1,052	1,316	1,490 ^	1100	78.1	4.45
All Students											—		
SBP participants	507	1,141	32.6	831	893	1,001	1,132	1,271	1,403	1,488	—	30.8	9.18
SBP nonparticipants	1,654	1,093	32.1	527	621	799	1,041	1,330	1,633	1,835	—	46.4	3.08
All Students, Male											—		
SBP participants	287	1,235	40.5	726 ^	824	990	1,205	1,444	1,691	1,845 ^	—	28.1	4.39
SBP nonparticipants	832	1,183	33.4	599	696	888	1,136	1,424	1,725	1,928	—	37.0	2.50
All Students, Female											—		
SBP participants	218	1,047	36.1	697 ^	766	887	1,032	1,191	1,346	1,447 ^	—	46.2	5.66
SBP nonparticipants	822	976	41.5	446	530	698	921	1,194	1,492	1,696	—	58.1	4.41

Calcium Intakes (mg)													
Percentiles													
N	Mean	SE	5	10	25	50	75	90	95				
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	1,127	33.1	817 ^	879	986	1,118	1,258	1,389	1,475 ^	—	23.8	7.45
SBP nonparticipants	520	1,118	42.8	583	681	856	1,078	1,340	1,604	1,774	—	34.2	4.34
Elementary School Students, Male											—		
SBP participants	118	1,238	39.4	730 ^	829 ^	996	1,207	1,444	1,692 ^	1,840 ^	—	20.9	4.16
SBP nonparticipants	258	1,184	40.1	685 ^	786	958	1,164	1,389	1,615	1,753 ^	—	25.2	4.71
Elementary School Students, Female											—		
SBP participants	110	1,068	44.2	715 ^	785 ^	908	1,055	1,212	1,369 ^	1,470 ^	—	33.4	6.41
SBP nonparticipants	262	1,054	63.4	496 ^	581	753	990	1,282	1,606	1,831 ^	—	43.9	6.29
Middle School Students											—		
SBP participants	144	1,157	50.8	630 ^	717 ^	880	1,105	1,368	1,671 ^	1,880 ^	—	49.3	5.66
SBP nonparticipants	570	1,013	33.8	640	708	832	992	1,170	1,348	1,460	—	66.3	6.39
Middle School Students, Male											—		
SBP participants	92	1,248	67.2	675 ^	777 ^	966	1,203	1,487	1,768 ^	1,956 ^	—	39.5	9.62
SBP nonparticipants	291	1,120	48.6	735 ^	806	939	1,100	1,278	1,455	1,571 ^	—	50.1	15.66
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	851	31.2	577 ^	629	725	839	962	1,086	1,161 ^	—	91.1	8.79
High School Students											—		
SBP participants	139	1,241	91.1	614 ^	731 ^	926	1,191	1,498	1,832 ^	2,037 ^	—	41.3	9.81
SBP nonparticipants	564	1,103	47.8	429	525	720	1,006	1,379	1,806	2,121	—	57.0	3.57
High School Students, Male											—		
SBP participants	83	1,423	147.1	710 ^	832 ^	1,061	1,365	1,726	2,106 ^	2,331 ^	—	27.8	21.08
SBP nonparticipants	283	1,276	68.4	504 ^	619	843	1,172	1,589	2,071	2,414 ^	—	43.8	4.11
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	853	37.1	375 ^	449	606	805	1,048	1,307	1,494 ^	—	77.9	3.69

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014–2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (800 mg for both groups).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.35. Usual Daily Iron Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Iron Intakes (mg)										EAR (mg)	% Below EAR ^a	SE ^b
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^c											4.1		
SBP participants	119	14.9	0.68	9.5 ^	10.4 ^	12.2	14.5	17.1	20.0 ^	21.9 ^	4.1	<3	n.a.
SBP nonparticipants	240	15.6	0.60	8.8 ^	10.0	12.0	14.9	18.4	22.2	24.8 ^	4.1	<3	n.a.
9 to 13 Years											—		
SBP participants	220	15.3	0.53	9.7 ^	10.7	12.4	14.8	17.6	20.4	22.4 ^	—	<3	n.a.
SBP nonparticipants	719	15.3	0.64	8.0	9.1	11.4	14.4	18.1	22.5	25.4	—	<3	n.a.
9 to 13 Years, Male											5.9		
SBP participants	124	14.8	0.48	10.5 ^	11.4 ^	12.8	14.6	16.6	18.6 ^	19.9 ^	5.9	<3	n.a.
SBP nonparticipants	365	16.0	0.87	8.4 ^	9.5	11.8	15.0	19.0	23.6	26.7 ^	5.9	<3	n.a.
9 to 13 Years, Female											5.7		
SBP participants	91	14.7	0.88	9.9 ^	10.8 ^	12.4	14.4	16.8	19.1 ^	20.7 ^	5.7	<3	n.a.
SBP nonparticipants	354	14.5	1.02	8.0 ^	9.1	11.0	13.8	17.1	20.7	23.4 ^	5.7	<3	n.a.
14 to 18 Years ^d											—		
SBP participants	172	16.5	1.50	6.8 ^	8.1 ^	10.8	14.9	20.4	27.1 ^	31.9 ^	—	5.0 ^	n.a.
SBP nonparticipants	695	15.0	0.51	7.2	8.3	10.6	13.9	18.1	23.0	26.7	—	4.6	n.a.
14 to 18 Years, Male ^d											7.7		
SBP participants	105	18.8	2.31	7.5 ^	9.0 ^	12.1	16.7	23.2	31.3 ^	37.0 ^	7.7	5.5 ^	n.a.
SBP nonparticipants	354	16.9	0.71	8.7 ^	10.0	12.4	15.8	20.2	25.0	28.5 ^	7.7	<3	n.a.
14 to 18 Years, Female ^d											7.9		
SBP participants	67	--	--	--	--	--	--	--	--	--	7.9	—	—
SBP nonparticipants	341	12.5	0.65	5.8 ^	6.8	8.8	11.5	15.3	19.6	22.7 ^	7.9	<3	n.a.
All Students											—		
SBP participants	511	15.2	0.45	9.8	10.7	12.5	14.8	17.5	20.3	22.3	—	<3	n.a.
SBP nonparticipants	1,654	15.2	0.34	8.6	9.6	11.6	14.4	17.9	21.6	24.2	—	<3	n.a.
All Students, Male											—		
SBP participants	293	16.3	0.65	11.0 ^	11.9	13.7	15.9	18.4	21.1	22.9 ^	—	<3	n.a.
SBP nonparticipants	832	15.9	0.49	8.9	9.9	12.1	15.1	18.7	22.7	25.5	—	<3	n.a.
All Students, Female											—		
SBP participants	218	14.0	0.58	9.3 ^	10.1	11.7	13.7	15.9	18.2	19.8 ^	—	<3	n.a.
SBP nonparticipants	822	14.2	0.44	8.4	9.3	11.2	13.6	16.6	19.9	22.2	—	<3	n.a.

	Iron Intakes (mg)										EAR (mg)	% Below EAR ^a	SE ^b
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	14.9	0.49	9.5 ^	10.4	12.1	14.4	17.1	19.9	21.8 ^	—	<3	n.a.
SBP nonparticipants	520	15.6	0.48	9.5	10.5	12.5	15.0	18.0	21.3	23.5	—	<3	n.a.
Elementary School Students, Male											—		
SBP participants	118	15.4	0.70	10.3 ^	11.2 ^	12.9	15.0	17.4	20.0 ^	21.8 ^	—	<3	n.a.
SBP nonparticipants	258	15.8	0.78	9.3 ^	10.4	12.5	15.2	18.4	22.1	24.5 ^	—	<3	n.a.
Elementary School Students, Female											—		
SBP participants	110	14.1	0.65	9.3 ^	10.2 ^	11.8	13.8	16.0	18.4 ^	19.9 ^	—	<3	n.a.
SBP nonparticipants	262	15.4	0.63	9.9 ^	10.8	12.6	15.0	17.7	20.7	22.7 ^	—	<3	n.a.
Middle School Students											—		
SBP participants	144	16.4	1.22	8.8 ^	10.0 ^	12.3	15.5	19.4	24.1 ^	27.3 ^	—	<3	n.a.
SBP nonparticipants	570	13.5	0.31	7.6	8.6	10.4	12.9	15.9	19.1	21.3	—	<3	n.a.
Middle School Students, Male											—		
SBP participants	92	17.7	1.68	8.6 ^	10.0 ^	12.7	16.4	21.3	26.7 ^	30.5 ^	—	<3	n.a.
SBP nonparticipants	291	14.3	0.39	8.0 ^	9.0	11.0	13.7	16.9	20.4	22.9 ^	—	<3	n.a.
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	12.2	0.43	8.0 ^	8.8	10.2	11.9	13.9	15.9	17.2 ^	—	<3	n.a.
High School Students											—		
SBP participants	139	16.8	1.72	6.5 ^	8.0 ^	10.8	15.1	20.9	28.1 ^	33.0 ^	—	<3	n.a.
SBP nonparticipants	564	15.2	0.63	7.1	8.3	10.6	14.0	18.4	23.6	27.5	—	<3	n.a.
High School Students, Male											—		
SBP participants	83	19.0	2.85	7.3 ^	8.8 ^	11.9	16.8	23.6	32.0 ^	37.7 ^	—	5.9 ^	n.a.
SBP nonparticipants	283	17.0	0.86	8.6 ^	9.9	12.4	16.0	20.4	25.5	29.2 ^	—	<3	n.a.
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	12.6	0.80	5.4 ^	6.4	8.5	11.5	15.4	20.0	23.5 ^	—	<3	n.a.

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aComparisons to the EAR for iron were done using the probability approach.

^bStandard errors could not be produced using the probability approach.

^cThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^dIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (6.0 mg and 8.1 mg, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); n.a. = not applicable; NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.36. Usual Daily Magnesium Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Magnesium Intakes (mg)										EAR (mg)	% Below EAR	SE
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											110		
SBP participants	119	267	7.2	199 ^	212 ^	236	264	295	326 ^	344 ^	110	<3	0.00
SBP nonparticipants	240	264	7.2	171 ^	188	217	257	303	350	382 ^	110	<3	0.06
9 to 13 Years											200		
SBP participants	220	271	9.1	193 ^	208	234	267	302	338	360 ^	200	7.0 ^	4.56
SBP nonparticipants	719	259	6.7	170	186	216	253	295	339	367	200	16.0	4.26
9 to 13 Years, Male											200		
SBP participants	129	283	12.5	207 ^	223 ^	249	280	314	346 ^	367 ^	200	3.3 ^	4.14
SBP nonparticipants	365	272	7.4	184 ^	200	230	267	308	351	377 ^	200	10.0	5.57
9 to 13 Years, Female											200		
SBP participants	91	259	14.6	177 ^	192 ^	221	255	293	332 ^	358 ^	200	13.6 ^	8.29
SBP nonparticipants	354	242	10.3	154 ^	169	198	236	279	323	355 ^	200	26.5	6.78
14 to 18 Years ^b											—		
SBP participants	172	294	15.3	177 ^	197 ^	233	283	341	404 ^	446 ^	—	67.8	6.69
SBP nonparticipants	695	278	10.3	154	174	212	264	327	398	448	—	72.7	4.67
14 to 18 Years, Male ^b											340		
SBP participants	105	330	22.7	188 ^	212 ^	258	316	388	465 ^	515 ^	340	59.3	13.73
SBP nonparticipants	354	312	15.3	170 ^	193	236	295	370	451	510 ^	340	66.3	6.01
14 to 18 Years, Female ^b											300		
SBP participants	67	--	--	--	--	--	--	--	--	--	300	--	--
SBP nonparticipants	341	231	8.0	150 ^	165	192	226	265	306	331 ^	300	88.3	6.07
All Students											—		
SBP participants	511	273	5.7	206	219	242	270	301	331	350	—	24.7	2.60
SBP nonparticipants	1,654	264	4.6	171	187	217	256	302	350	381	—	30.5	2.41
All Students, Male											—		
SBP participants	293	286	8.4	220 ^	233	255	284	314	343	361 ^	—	26.4	3.69
SBP nonparticipants	832	277	5.4	178	194	227	269	318	370	406	—	29.4	2.46
All Students, Female											—		
SBP participants	218	256	7.4	189 ^	203	226	254	283	311	329 ^	—	25.6	3.55
SBP nonparticipants	822	246	5.5	165	179	207	240	279	319	345	—	33.2	3.29

	Magnesium Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	270	6.9	202 ^	215	238	267	298	328	346 ^	—	3.7 ^	1.89
SBP nonparticipants	520	261	5.7	182	198	224	257	294	330	353	—	5.8	1.88
Elementary School Students, Male											—		
SBP participants	118	274	10.1	209 ^	221 ^	244	272	302	330 ^	347 ^	—	3.7 ^	2.41
SBP nonparticipants	258	263	6.6	185 ^	200	227	259	295	331	354 ^	—	5.8 ^	2.54
Elementary School Students, Female											—		
SBP participants	110	262	11.1	196 ^	210 ^	233	260	288	316 ^	333 ^	—	3.5 ^	3.36
SBP nonparticipants	262	261	7.7	181 ^	196	223	256	293	331	356 ^	—	6.0 ^	2.96
Middle School Students											—		
SBP participants	144	269	10.9	179 ^	195 ^	225	264	306	350 ^	380 ^	—	26.4	4.28
SBP nonparticipants	570	246	5.3	177	190	213	243	275	307	327	—	30.7	6.30
Middle School Students, Male											—		
SBP participants	92	294	21.1	179 ^	201 ^	241	288	342	394 ^	427 ^	—	23.4	5.62
SBP nonparticipants	291	269	7.7	174 ^	190	221	261	309	359	395 ^	—	30.4	4.76
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	209	6.5	137 ^	149	173	203	238	274	297 ^	—	54.5	5.28
High School Students											—		
SBP participants	139	298	16.5	177 ^	200 ^	238	288	347	412 ^	452 ^	—	64.5	7.30
SBP nonparticipants	564	278	12.3	149	169	208	262	330	406	460	—	72.0	5.34
High School Students, Male											—		
SBP participants	83	332	29.1	187 ^	211 ^	257	318	392	473 ^	521 ^	—	57.4	25.62
SBP nonparticipants	283	311	18.7	159 ^	183	228	292	372	464	530 ^	—	65.8	6.74
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	230	9.0	146 ^	161	190	225	264	304	332 ^	—	88.0	6.98

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (330 mg and 255 mg, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.37. Usual Daily Phosphorus Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Phosphorus Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											405		
SBP participants	118	1,335	29.7	1,020 ^	1,077 ^	1,189	1,323	1,469	1,602 ^	1,697 ^	405	<3	0.00
SBP nonparticipants	239	1,363	44.8	1,069 ^	1,127	1,236	1,355	1,482	1,606	1,688 ^	405	<3	0.01
9 to 13 Years											1055		
SBP participants	219	1,436	40.0	1,106 ^	1,171	1,285	1,426	1,572	1,720	1,808 ^	1055	<3	2.74
SBP nonparticipants	719	1,336	41.3	869	955	1,114	1,309	1,526	1,747	1,888	1055	18.5	3.82
9 to 13 Years, Male											1055		
SBP participants	129	1,488	39.0	1,041 ^	1,125 ^	1,275	1,466	1,673	1,891 ^	2,023 ^	1055	5.7 ^	2.30
SBP nonparticipants	365	1,402	40.0	955 ^	1,038	1,193	1,381	1,584	1,790	1,916 ^	1055	11.1	5.94
9 to 13 Years, Female											1055		
SBP participants	91	1,363	78.4	903 ^	985 ^	1,138	1,327	1,551	1,787 ^	1,946 ^	1055	16.5 ^	7.23
SBP nonparticipants	354	1,248	74.5	755 ^	843	1,001	1,212	1,453	1,697	1,869 ^	1055	31.1	6.42
14 to 18 Years ^b											1055		
SBP participants	172	1,503	92.5	813 ^	926 ^	1,136	1,434	1,787	2,181 ^	2,444 ^	1055	18.7	9.83
SBP nonparticipants	695	1,430	46.6	710	820	1,038	1,344	1,717	2,142	2,445	1055	25.8	2.82
14 to 18 Years, Male ^b											1055		
SBP participants	105	1,734	128.8	1,009 ^	1,134 ^	1,374	1,675	2,033	2,416 ^	2,657 ^	1055	6.7 ^	6.38
SBP nonparticipants	354	1,638	76.5	870 ^	995	1,231	1,554	1,955	2,382	2,690 ^	1055	12.9	3.79
14 to 18 Years, Female ^b											1055		
SBP participants	67	--	--	--	--	--	--	--	--	--	1055	--	--
SBP nonparticipants	341	1,145	33.2	617 ^	711	878	1,098	1,365	1,648	1,833 ^	1055	44.5	3.73
All Students											—		
SBP participants	503	1,389	33.3	1,066	1,130	1,241	1,378	1,524	1,664	1,755	—	<3	2.72
SBP nonparticipants	1,654	1,370	31.4	853	945	1,113	1,332	1,585	1,844	2,015	—	13.3	2.24
All Students, Male											—		
SBP participants	287	1,476	41.0	1,033 ^	1,116	1,266	1,455	1,657	1,865	2,003 ^	—	4.2 ^	1.68
SBP nonparticipants	832	1,469	35.3	943	1,035	1,212	1,434	1,685	1,943	2,117	—	7.7	2.52
All Students, Female											—		
SBP participants	218	1,293	40.2	922 ^	995	1,124	1,278	1,447	1,613	1,722 ^	—	11.2	6.70
SBP nonparticipants	822	1,239	36.3	764	848	1,006	1,204	1,435	1,676	1,837	—	21.3	2.97

Phosphorus Intakes (mg)											EAR (mg) % Below EAR SE		
Percentiles													
N	Mean	SE	5	10	25	50	75	90	95				
By School Type and Gender													
Elementary School Students													
SBP participants	227	1,376	32.7	1,058 ^	1,117	1,229	1,367	1,511	1,646	1,737 ^	—	<3	1.94
SBP nonparticipants	520	1,365	39.2	885	979	1,139	1,337	1,563	1,787	1,928	—	7.3	2.11
Elementary School Students, Male													
SBP participants	118	1,470	39.4	1,026 ^	1,109 ^	1,257	1,447	1,654	1,863 ^	2,002 ^	—	<3	0.98
SBP nonparticipants	258	1,417	44.4	976 ^	1,067	1,220	1,400	1,597	1,794	1,914 ^	—	4.4 ^	2.67
Elementary School Students, Female													
SBP participants	110	1,331	56.0	961 ^	1,035 ^	1,164	1,317	1,481	1,646 ^	1,751 ^	—	5.8 ^	3.88
SBP nonparticipants	262	1,315	53.8	812 ^	900	1,067	1,279	1,523	1,775	1,943 ^	—	10.5	2.95
Middle School Students													
SBP participants	144	1,425	46.2	969 ^	1,056 ^	1,209	1,404	1,610	1,829 ^	1,970 ^	—	9.9 ^	6.11
SBP nonparticipants	570	1,257	24.3	767	850	1,012	1,222	1,463	1,706	1,873	—	29.8	3.47
Middle School Students, Male													
SBP participants	92	1,552	89.2	1,060 ^	1,156 ^	1,327	1,528	1,757	1,972 ^	2,111 ^	—	4.8 ^	5.86
SBP nonparticipants	291	1,375	36.4	895 ^	977	1,140	1,344	1,574	1,810	1,975 ^	—	16.1	5.01
Middle School Students, Female													
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	1,091	25.4	652 ^	727	872	1,059	1,275	1,490	1,635 ^	—	49.4	4.15
High School Students													
SBP participants	139	1,543	100.7	824 ^	954 ^	1,173	1,475	1,835	2,237 ^	2,490 ^	—	16.2	9.30
SBP nonparticipants	564	1,461	54.6	713	830	1,057	1,372	1,768	2,206	2,522	—	24.3	2.93
High School Students, Male													
SBP participants	83	1,776	157.5	1,099 ^	1,222 ^	1,444	1,730	2,062	2,405 ^	2,606 ^	—	3.8 ^	5.98
SBP nonparticipants	283	1,664	83.8	888 ^	1,018	1,258	1,587	1,981	2,415	2,714 ^	—	11.7	3.51
High School Students, Female													
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	1,160	38.2	576 ^	671	867	1,109	1,398	1,702	1,917 ^	—	43.2	4.12

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (580 mg for both groups).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.38. Usual Daily Zinc Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Zinc Intakes (mg)										EAR (mg) % Below EAR SE		
	N	Mean	SE	Percentiles									
				5	10	25	50	75	90	95			
By Age/Gender Groups													
6 to 8 Years ^a											4.0		
SBP participants	117	10.1	0.29	7.5 ^	8.1 ^	8.9	9.9	11.1	12.3 ^	13.1 ^	4.0	<3	0.00
SBP nonparticipants	240	11.2	0.41	6.6 ^	7.4	8.8	10.8	13.1	15.6	17.3 ^	4.0	<3	0.10
9 to 13 Years											7.0		
SBP participants	220	11.2	0.39	7.7 ^	8.3	9.5	11.0	12.6	14.3	15.4 ^	7.0	<3	2.50
SBP nonparticipants	719	10.5	0.42	6.3	7.0	8.3	10.1	12.1	14.3	15.8	7.0	10.0	4.44
9 to 13 Years, Male											7.0		
SBP participants	129	11.7	0.45	8.4 ^	9.0 ^	10.1	11.6	13.1	14.6 ^	15.6 ^	7.0	<3	1.17
SBP nonparticipants	365	10.9	0.34	7.4 ^	8.0	9.2	10.6	12.3	14.1	15.2 ^	7.0	3.0 ^	4.42
9 to 13 Years, Female											7.0		
SBP participants	91	10.5	0.58	7.1 ^	7.7 ^	8.9	10.3	11.9	13.5 ^	14.5 ^	7.0	4.6 ^	4.05
SBP nonparticipants	354	9.8	0.69	5.2 ^	5.9	7.3	9.3	11.7	14.4	16.4 ^	7.0	21.6	4.09
14 to 18 Years ^b											—		
SBP participants	172	12.4	1.04	6.6 ^	7.6 ^	9.3	11.8	14.8	18.2 ^	20.4 ^	—	13.3	7.87
SBP nonparticipants	695	11.3	0.45	5.2	6.1	7.9	10.5	13.7	17.5	20.3	—	26.1	3.64
14 to 18 Years, Male ^b											8.5		
SBP participants	105	14.4	1.58	9.3 ^	10.2 ^	11.9	14.0	16.4	19.0 ^	20.6 ^	8.5	<3	9.18
SBP nonparticipants	354	13.1	0.61	7.0 ^	8.0	9.9	12.4	15.6	18.9	21.3 ^	8.5	13.6	6.12
14 to 18 Years, Female ^b											7.3		
SBP participants	67	--	--	--	--	--	--	--	--	--	7.3	--	--
SBP nonparticipants	341	8.9	0.50	4.1 ^	4.8	6.2	8.2	10.8	14.0	16.2 ^	7.3	39.1	5.83
All Students											—		
SBP participants	511	11.1	0.31	7.8	8.4	9.5	10.9	12.5	14.1	15.2	—	<3	2.52
SBP nonparticipants	1,654	10.8	0.27	6.4	7.1	8.5	10.4	12.7	15.1	16.7	—	9.3	1.77
All Students, Male											—		
SBP participants	286	11.7	0.37	8.2 ^	8.9	10.0	11.5	13.2	14.8	16.0 ^	—	<3	1.74
SBP nonparticipants	832	11.6	0.24	7.5	8.2	9.6	11.3	13.2	15.3	16.6	—	4.7	2.79
All Students, Female											—		
SBP participants	218	10.1	0.35	6.8 ^	7.4	8.5	9.9	11.5	13.1	14.1 ^	—	4.9 ^	3.88
SBP nonparticipants	822	9.8	0.41	5.3	6.0	7.4	9.3	11.7	14.4	16.4	—	15.5	3.15

	Zinc Intakes (mg)										EAR (mg)	% Below EAR	SE
	Percentiles												
	N	Mean	SE	5	10	25	50	75	90	95			
By School Type and Gender													
Elementary School Students											—		
SBP participants	228	10.7	0.34	7.4 ^	8.0	9.1	10.5	12.1	13.7	14.7 ^	—	<3	1.65
SBP nonparticipants	520	10.8	0.32	6.7	7.5	8.7	10.4	12.4	14.6	16.0	—	3.0 ^	1.80
Elementary School Students, Male											—		
SBP participants	118	10.9	0.37	7.6 ^	8.3 ^	9.3	10.7	12.2	13.7 ^	14.7 ^	—	<3	1.11
SBP nonparticipants	258	11.0	0.37	7.9 ^	8.5	9.6	10.9	12.3	13.7	14.6 ^	—	<3	1.70
Elementary School Students, Female											—		
SBP participants	110	10.3	0.49	6.9 ^	7.6 ^	8.7	10.1	11.6	13.2 ^	14.2 ^	—	<3	2.43
SBP nonparticipants	262	10.5	0.52	5.9 ^	6.6	8.0	10.0	12.4	15.1	17.0 ^	—	6.0 ^	2.20
Middle School Students											—		
SBP participants	144	12.3	0.73	6.7 ^	7.6 ^	9.3	11.7	14.5	17.9 ^	20.3 ^	—	8.1 ^	4.52
SBP nonparticipants	570	10.1	0.29	7.1	7.6	8.7	10.0	11.4	12.8	13.7	—	7.0	6.91
Middle School Students, Male											—		
SBP participants	92	13.6	1.10	7.3 ^	8.3 ^	10.3	12.8	16.1	19.6 ^	22.0 ^	—	5.3 ^	4.26
SBP nonparticipants	291	11.1	0.33	7.3 ^	7.9	9.2	10.8	12.7	14.6	15.9 ^	—	6.4 ^	4.29
Middle School Students, Female											—		
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	279	8.5	0.43	4.5 ^	5.1	6.3	8.0	10.2	12.5	14.2 ^	—	35.8	5.69
High School Students											—		
SBP participants	139	12.4	1.14	6.6 ^	7.7 ^	9.4	11.8	14.8	18.1 ^	20.2 ^	—	12.5 ^	8.73
SBP nonparticipants	564	11.3	0.54	5.2	6.1	7.8	10.4	13.8	17.7	20.7	—	26.6	3.60
High School Students, Male											—		
SBP participants	78	13.0	1.40	9.2 ^	9.9 ^	11.2	12.8	14.6	16.5 ^	17.8 ^	—	<3	3.53
SBP nonparticipants	283	13.0	0.66	6.9 ^	7.9	9.8	12.3	15.5	19.0	21.4 ^	—	14.4	6.48
High School Students, Female											—		
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--
SBP nonparticipants	281	8.9	0.61	3.7 ^	4.4	5.9	8.0	10.8	14.2	16.8 ^	—	41.4	5.36

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing the prevalence of inadequate usual daily intakes, the EAR for males and females 19 to 30 years was used for these students (9.4 mg and 6.8 mg, respectively).

DRI = Dietary Reference Intake; EAR = Estimated Average Requirement; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.39. Usual Daily Potassium Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Potassium Intakes (mg)										AI (mg)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By Age/Gender Groups											
6 to 8 Years ^a											3800
SBP participants	119	2,471	65.2	1,781 ^	1,909 ^	2,153	2,441	2,756	3,070 ^	3,260 ^	3800
SBP nonparticipants	240	2,419	73.9	1,595 ^	1,753	2,018	2,367	2,762	3,153	3,408 ^	3800
9 to 13 Years											4500
SBP participants	220	2,505	93.9	1,905 ^	2,025	2,235	2,485	2,752	3,012	3,172 ^	4500
SBP nonparticipants	719	2,352	63.6	1,528	1,678	1,955	2,300	2,687	3,088	3,347	4500
9 to 13 Years, Male											4500
SBP participants	129	2,634	77.0	1,929 ^	2,069 ^	2,306	2,613	2,932	3,229 ^	3,411 ^	4500
SBP nonparticipants	365	2,462	67.7	1,740 ^	1,872	2,120	2,424	2,757	3,098	3,308 ^	4500
9 to 13 Years, Female											4500
SBP participants	91	2,418	175.8	1,458 ^	1,626 ^	1,945	2,342	2,812	3,307 ^	3,639 ^	4500
SBP nonparticipants	354	2,200	102.8	1,309 ^	1,466	1,751	2,133	2,571	3,019	3,336 ^	4500
14 to 18 Years ^b											4700
SBP participants	172	2,614	140.9	1,338 ^	1,550 ^	1,941	2,494	3,142	3,855 ^	4,325 ^	4700
SBP nonparticipants	695	2,450	75.0	1,395	1,569	1,901	2,349	2,874	3,451	3,850	4700
14 to 18 Years, Male ^b											4700
SBP participants	105	2,921	191.1	1,493 ^	1,730 ^	2,194	2,791	3,511	4,291 ^	4,786 ^	4700
SBP nonparticipants	354	2,743	123.3	1,714 ^	1,893	2,219	2,651	3,169	3,704	4,084 ^	4700
14 to 18 Years, Female ^b											4700
SBP participants	67	--	--	--	--	--	--	--	--	--	4700
SBP nonparticipants	341	2,043	58.0	1,187 ^	1,350	1,633	1,989	2,401	2,820	3,084 ^	4700
All Students											—
SBP participants	511	2,501	56.4	1,814	1,946	2,182	2,474	2,787	3,089	3,286	—
SBP nonparticipants	1,654	2,387	44.2	1,571	1,722	1,992	2,337	2,727	3,118	3,372	—
All Students, Male											—
SBP participants	293	2,631	70.8	1,955 ^	2,087	2,318	2,607	2,914	3,210	3,395 ^	—
SBP nonparticipants	832	2,512	49.3	1,746	1,885	2,147	2,469	2,826	3,186	3,423	—
All Students, Female											—
SBP participants	218	2,347	85.0	1,601 ^	1,745	2,003	2,313	2,655	2,994	3,217 ^	—
SBP nonparticipants	822	2,219	60.5	1,410	1,560	1,835	2,173	2,553	2,940	3,191	—

	Potassium Intakes (mg)										AI (mg)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By School Type and Gender											
Elementary School Students											—
SBP participants	228	2,502	68.4	1,810 ^	1,944	2,181	2,476	2,791	3,096	3,286 ^	—
SBP nonparticipants	520	2,409	59.0	1,693	1,838	2,083	2,376	2,703	3,020	3,217	—
Elementary School Students, Male											—
SBP participants	118	2,544	85.3	1,884 ^	2,011 ^	2,235	2,523	2,826	3,108 ^	3,275 ^	—
SBP nonparticipants	258	2,440	66.6	1,841 ^	1,967	2,176	2,421	2,685	2,947	3,106 ^	—
Elementary School Students, Female											—
SBP participants	110	2,438	115.6	1,687 ^	1,836 ^	2,095	2,408	2,745	3,084 ^	3,303 ^	—
SBP nonparticipants	262	2,384	91.8	1,606 ^	1,753	2,020	2,347	2,706	3,062	3,292 ^	—
Middle School Students											—
SBP participants	144	2,437	99.3	1,528 ^	1,699 ^	2,002	2,391	2,807	3,250 ^	3,536 ^	—
SBP nonparticipants	570	2,201	54.1	1,426	1,564	1,819	2,151	2,525	2,905	3,147	—
Middle School Students, Male											—
SBP participants	92	2,659	147.9	1,766 ^	1,945 ^	2,259	2,623	3,031	3,408 ^	3,649 ^	—
SBP nonparticipants	291	2,368	64.4	1,633 ^	1,760	2,011	2,323	2,672	3,028	3,278 ^	—
Middle School Students, Female											—
SBP participants	52	--	--	--	--	--	--	--	--	--	—
SBP nonparticipants	279	1,905	76.5	1,096 ^	1,229	1,492	1,834	2,232	2,671	2,951 ^	—
High School Students											—
SBP participants	139	2,664	152.0	1,375 ^	1,612 ^	2,008	2,551	3,189	3,893 ^	4,331 ^	—
SBP nonparticipants	564	2,451	86.0	1,343	1,524	1,868	2,334	2,906	3,528	3,972	—
High School Students, Male											—
SBP participants	83	2,977	240.0	1,491 ^	1,743 ^	2,215	2,848	3,607	4,413 ^	4,894 ^	—
SBP nonparticipants	283	2,713	139.4	1,606 ^	1,795	2,139	2,607	3,164	3,775	4,199 ^	—
High School Students, Female											—
SBP participants	56	--	--	--	--	--	--	--	--	--	—
SBP nonparticipants	281	2,054	69.0	1,125 ^	1,290	1,616	1,999	2,434	2,870	3,169 ^	—

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The AI for these students is the same as the AI for students 14 to 18 years.

AI = Adequate Intake; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.40. Usual Daily Sodium Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Sodium (mg)										UL			DGA = < 2,300 mg	
	Percentiles														
	N	Mean	SE	5	10	25	50	75	90	95	UL	% Above	SE	% Above	SE
By Age/Gender Groups															
6 to 8 Years ^a											1900				
SBP participants	119	2,854	106.8	2,070 ^	2,214 ^	2,491	2,819	3,179	3,538 ^	3,756 ^	1900	>97	3.10	86.0 ^	8.84
SBP nonparticipants	240	3,042	86.2	2,155 ^	2,327	2,612	2,987	3,411	3,832	4,106 ^	1900	>97	2.05	90.9	6.11
9 to 13 Years											2200				
SBP participants	220	3,167	75.6	2,308 ^	2,477	2,767	3,135	3,528	3,898	4,146 ^	2200	>97	3.09	95.2 ^	4.19
SBP nonparticipants	719	3,080	108.0	1,798	2,012	2,422	2,960	3,596	4,290	4,755	2200	84.0	3.98	80.2	4.26
9 to 13 Years, Male											2200				
SBP participants	126	3,291	119.3	2,512 ^	2,654 ^	2,933	3,263	3,615	3,964 ^	4,170 ^	2200	>97	1.75	>97	2.56
SBP nonparticipants	365	3,216	103.2	1,991 ^	2,192	2,588	3,105	3,711	4,374	4,803 ^	2200	89.8	4.97	86.5	5.37
9 to 13 Years, Female											2200				
SBP participants	91	3,026	118.4	2,154 ^	2,315 ^	2,612	2,970	3,383	3,809 ^	4,090 ^	2200	93.8	6.19 ^	90.5 ^	8.07
SBP nonparticipants	354	2,905	162.2	1,597 ^	1,814	2,217	2,777	3,446	4,154	4,672 ^	2200	75.7	8.05	71.4	8.08
14 to 18 Years ^b											2300				
SBP participants	172	3,482	195.9	1,798 ^	2,070 ^	2,579	3,306	4,174	5,145 ^	5,795 ^	2300	83.7	7.75	83.7	7.75
SBP nonparticipants	695	3,369	90.0	2,153	2,367	2,765	3,281	3,862	4,478	4,893	2300	91.8	4.17	91.8	4.17
14 to 18 Years, Male ^b											2300				
SBP participants	105	3,964	236.8	2,105 ^	2,415 ^	3,019	3,794	4,731	5,746 ^	6,392 ^	2300	92.0	4.80 ^	92.0 ^	4.80
SBP nonparticipants	354	3,720	139.4	2,285 ^	2,544	3,009	3,613	4,316	5,024	5,515 ^	2300	94.8	3.44 ^	94.8 ^	3.44
14 to 18 Years, Female ^b											2300				
SBP participants	67	--	--	--	--	--	--	--	--	--	2300	--	--	--	--
SBP nonparticipants	339	2,897	97.6	2,105 ^	2,262	2,520	2,854	3,223	3,606	3,842 ^	2300	88.1	13.07	88.1	13.07
All Students											—				
SBP participants	511	3,112	84.7	2,274	2,433	2,721	3,077	3,461	3,835	4,078	—	96.9	3.57 ^	94.4	5.58
SBP nonparticipants	1,654	3,129	57.5	2,213	2,383	2,687	3,073	3,510	3,949	4,235	—	95.8	3.51	92.8	4.99
All Students, Male											—				
SBP participants	283	3,271	96.1	2,461 ^	2,613	2,901	3,246	3,607	3,961	4,175 ^	—	>97	1.92	>97	3.19
SBP nonparticipants	832	3,278	74.5	2,265	2,444	2,786	3,212	3,692	4,185	4,515	—	96.6	2.93	94.2	4.37
All Students, Female											—				
SBP participants	218	2,841	119.5	2,028 ^	2,189	2,473	2,810	3,177	3,535	3,769 ^	—	90.9	7.33 ^	85.0	10.35
SBP nonparticipants	822	2,939	66.5	2,130	2,280	2,555	2,891	3,271	3,660	3,915	—	93.6	7.47	89.1	10.45

	Sodium (mg)										UL			DGA = < 2,300 mg	
	Percentiles														
	N	Mean	SE	5	10	25	50	75	90	95	UL	% Above	SE	% Above	SE
By School Type and Gender															
Elementary School Students											—				
SBP participants	228	2,970	86.9	2,160 ^	2,316	2,593	2,938	3,307	3,666	3,891 ^	—	96.6	3.57 ^	90.6	7.17
SBP nonparticipants	520	3,044	83.0	2,204	2,372	2,657	3,002	3,390	3,770	4,009	—	>97	3.25	92.5	6.18
Elementary School Students, Male											—				
SBP participants	118	3,103	108.2	2,362 ^	2,500 ^	2,769	3,084	3,407	3,736 ^	3,935 ^	—	>97	1.95	96.4 ^	4.89
SBP nonparticipants	258	3,102	96.8	2,268 ^	2,421	2,715	3,062	3,443	3,818	4,067 ^	—	>97	3.03	94.2 ^	6.21
Elementary School Students, Female											—				
SBP participants	110	2,769	148.2	1,988 ^	2,145 ^	2,418	2,742	3,087	3,432 ^	3,653 ^	—	92.4	6.58 ^	82.4 ^	11.91
SBP nonparticipants	262	3,020	101.2	2,015 ^	2,200	2,541	2,964	3,435	3,912	4,224 ^	—	93.9	6.06 ^	86.2	9.94
Middle School Students											—				
SBP participants	144	3,224	111.9	2,363 ^	2,525 ^	2,821	3,182	3,582	3,965 ^	4,229 ^	—	>97	2.73	96.2 ^	3.61
SBP nonparticipants	565	2,846	58.8	2,128	2,259	2,504	2,812	3,146	3,480	3,688	—	91.8	8.58	88.1	10.75
Middle School Students, Male											—				
SBP participants	88	3,296	191.4	2,512 ^	2,660 ^	2,941	3,275	3,621	3,941 ^	4,150 ^	—	>97	1.67	>97	2.55
SBP nonparticipants	291	3,092	74.5	2,275 ^	2,422	2,706	3,052	3,430	3,810	4,072 ^	—	96.0	4.32 ^	94.2 ^	5.24
Middle School Students, Female											—				
SBP participants	52	--	--	--	--	--	--	--	--	--	—	--	--	--	--
SBP nonparticipants	279	2,481	104.3	1,880 ^	1,991	2,199	2,451	2,724	3,008	3,181 ^	—	73.6	15.84	65.6	19.27
High School Students											—				
SBP participants	139	3,554	207.8	1,746 ^	2,067 ^	2,614	3,377	4,290	5,313 ^	5,956 ^	—	84.4	7.49	84.3	7.49
SBP nonparticipants	564	3,441	109.3	2,120	2,357	2,790	3,346	3,989	4,650	5,102	—	91.4	2.96	91.4	2.98
High School Students, Male											—				
SBP participants	83	4,019	258.3	2,210 ^	2,531 ^	3,119	3,888	4,786	5,719 ^	6,267 ^	—	94.0	5.38 ^	94.0 ^	5.39
SBP nonparticipants	283	3,762	165.6	2,357 ^	2,622	3,084	3,679	4,342	5,023	5,471 ^	—	95.9	3.66 ^	95.9 ^	3.67
High School Students, Female											—				
SBP participants	56	--	--	--	--	--	--	--	--	--	—	--	--	--	--
SBP nonparticipants	281	2,966	142.3	1,888 ^	2,077	2,451	2,893	3,403	3,925	4,289 ^	—	81.9	11.09	81.9	11.10

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans*; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

[^] = Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 97 and 100 percent are displayed as >97.

Table L.41. Usual Daily Dietary Fiber Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Dietary Fiber Intakes (g)										AI (g)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By Age/Gender Groups											
6 to 8 Years ^a											25
SBP participants	119	18	0.8	11 ^	12 ^	15	18	21	25 ^	27 ^	25
SBP nonparticipants	240	17	0.5	11 ^	12	14	17	20	23	25 ^	25
9 to 13 Years											—
SBP participants	220	17	0.7	10 ^	12	14	17	20	23	25 ^	—
SBP nonparticipants	719	17	0.5	10	11	13	16	19	22	24	—
9 to 13 Years, Male											31
SBP participants	129	18	1.1	10 ^	12 ^	14	17	21	24 ^	26 ^	31
SBP nonparticipants	365	18	0.7	11 ^	12	14	17	20	24	26 ^	31
9 to 13 Years, Female											26
SBP participants	91	16	0.8	11 ^	12 ^	14	16	18	21 ^	22 ^	26
SBP nonparticipants	354	15	0.7	10 ^	11	13	15	18	20	22 ^	26
14 to 18 Years ^b											—
SBP participants	172	18	1.0	8 ^	10 ^	13	17	22	28 ^	31 ^	—
SBP nonparticipants	695	17	0.7	9	10	13	16	20	24	27	—
14 to 18 Years, Male ^b											38
SBP participants	105	20	1.4	9 ^	10 ^	14	18	24	31 ^	35 ^	38
SBP nonparticipants	354	18	0.9	11 ^	13	15	18	21	25	27 ^	38
14 to 18 Years, Female ^b											26
SBP participants	67	--	--	--	--	--	--	--	--	--	26
SBP nonparticipants	341	14	0.6	7 ^	9	11	14	17	20	23 ^	26
All Students											—
SBP participants	511	17	0.5	10	12	14	17	20	24	26	—
SBP nonparticipants	1,654	17	0.3	10	12	14	16	19	22	24	—
All Students, Male											—
SBP participants	293	18	0.7	10 ^	12	14	18	22	26	29 ^	—
SBP nonparticipants	832	17	0.4	11	12	14	17	20	23	25	—
All Students, Female											—
SBP participants	218	16	0.5	11 ^	12	14	16	19	21	23 ^	—
SBP nonparticipants	822	16	0.4	10	11	13	15	18	21	23	—

	Dietary Fiber Intakes (g)										AI (g)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By School Type and Gender											
Elementary School Students											—
SBP participants	228	17	0.7	12 ^	13	15	17	20	22	24 ^	—
SBP nonparticipants	520	17	0.4	12	13	15	17	19	21	23	—
Elementary School Students, Male											—
SBP participants	118	18	1.0	11 ^	13 ^	15	18	21	24 ^	26 ^	—
SBP nonparticipants	258	17	0.6	12 ^	13	15	17	19	22	23 ^	—
Elementary School Students, Female											—
SBP participants	110	17	0.7	11 ^	12 ^	14	17	19	22 ^	24 ^	—
SBP nonparticipants	262	17	0.6	12 ^	13	15	17	20	23	24 ^	—
Middle School Students											—
SBP participants	144	17	0.7	11 ^	12 ^	14	17	20	23 ^	25 ^	—
SBP nonparticipants	570	15	0.4	10	11	13	15	17	20	22	—
Middle School Students, Male											—
SBP participants	92	18	1.3	10 ^	11 ^	14	18	22	26 ^	29 ^	—
SBP nonparticipants	291	16	0.4	11 ^	12	13	16	19	21	23 ^	—
Middle School Students, Female											—
SBP participants	52	--	--	--	--	--	--	--	--	--	—
SBP nonparticipants	279	13	0.6	7 ^	8	10	13	16	19	22 ^	—
High School Students											—
SBP participants	139	18	1.0	8 ^	10 ^	13	17	22	27 ^	31 ^	—
SBP nonparticipants	564	17	0.7	9	10	12	16	20	24	27	—
High School Students, Male											—
SBP participants	83	19	1.5	9 ^	10 ^	13	18	23	30 ^	34 ^	—
SBP nonparticipants	283	18	1.1	11 ^	12	14	17	21	25	28 ^	—
High School Students, Female											—
SBP participants	56	--	--	--	--	--	--	--	--	--	—
SBP nonparticipants	281	14	0.6	7 ^	9	11	14	17	20	22 ^	—

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. In assessing usual daily intakes relative to the AI, the AI for males and females was used for these students (38 g and 25 g, respectively)

AI = Adequate Intake; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table. When the DRI varies by gender, the reference value is not listed for the combined group of students.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.42. Usual Daily Dietary Fiber Intakes, Per 1,000 Calories: SBP Participants and Matched Comparison Group of Nonparticipants

	Dietary Fiber Intakes (g per 1,000 kcal)										AI (g)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By Age/Gender Groups											
6 to 8 Years ^a											14
SBP participants	119	10	0.5	7 ^	7 ^	8	10	11	13 ^	14 ^	14
SBP nonparticipants	240	9	0.3	7 ^	7	8	9	10	12	12 ^	14
9 to 13 Years											14
SBP participants	220	9	0.3	5 ^	6	7	8	10	11	12 ^	14
SBP nonparticipants	719	9	0.3	6	7	7	9	10	12	12	14
9 to 13 Years, Male											14
SBP participants	129	8	0.4	5 ^	6 ^	7	8	10	11 ^	12 ^	14
SBP nonparticipants	365	9	0.3	6 ^	6	7	9	10	12	13 ^	14
9 to 13 Years, Female											14
SBP participants	91	9	0.4	6 ^	6 ^	7	8	10	11 ^	12 ^	14
SBP nonparticipants	354	9	0.3	6 ^	7	8	9	10	11	12 ^	14
14 to 18 Years ^b											14
SBP participants	172	9	0.4	5 ^	6 ^	7	8	10	12 ^	13 ^	14
SBP nonparticipants	695	8	0.2	6	6	7	8	9	11	11	14
14 to 18 Years, Male ^b											14
SBP participants	105	8	0.6	6 ^	6 ^	7	8	9	11 ^	12 ^	14
SBP nonparticipants	354	8	0.2	6 ^	7	7	8	9	10	11 ^	14
14 to 18 Years, Female ^b											14
SBP participants	67	--	--	--	--	--	--	--	--	--	14
SBP nonparticipants	341	8	0.4	5 ^	6	7	8	10	11	12 ^	14
All Students											—
SBP participants	511	9	0.3	6	6	7	9	10	12	13	—
SBP nonparticipants	1,654	9	0.2	6	7	8	9	10	12	12	—
All Students, Male											—
SBP participants	293	9	0.3	5 ^	6	7	9	10	12	14 ^	—
SBP nonparticipants	832	9	0.2	6	7	8	9	10	11	12	—
All Students, Female											—
SBP participants	218	9	0.4	6 ^	7	8	9	10	12	13 ^	—
SBP nonparticipants	822	9	0.2	6	6	7	9	10	12	13	—

	Dietary Fiber Intakes (g per 1,000 kcal)										AI (g)
	N	Mean	SE	Percentiles							
				5	10	25	50	75	90	95	
By School Type and Gender											
Elementary School Students											—
SBP participants	228	9	0.4	6 ^	6	8	9	11	13	14 ^	—
SBP nonparticipants	520	9	0.3	6	7	8	9	11	12	13	—
Elementary School Students, Male											—
SBP participants	118	10	0.5	5 ^	6 ^	7	9	11	14 ^	16 ^	—
SBP nonparticipants	258	9	0.3	6 ^	7	8	9	10	12	13 ^	—
Elementary School Students, Female											—
SBP participants	110	9	0.5	6 ^	7 ^	8	9	10	12 ^	13 ^	—
SBP nonparticipants	262	10	0.4	6 ^	7	8	9	11	13	14 ^	—
Middle School Students											—
SBP participants	144	9	0.3	6 ^	7 ^	8	9	10	11 ^	12 ^	—
SBP nonparticipants	570	9	0.2	6	6	7	9	10	11	12	—
Middle School Students, Male											—
SBP participants	92	9	0.4	6 ^	6 ^	7	9	10	11 ^	12 ^	—
SBP nonparticipants	291	9	0.3	7 ^	7	8	9	10	11	11 ^	—
Middle School Students, Female											—
SBP participants	52	--	--	--	--	--	--	--	--	--	—
SBP nonparticipants	279	9	0.3	5 ^	6	7	8	10	12	13 ^	—
High School Students											—
SBP participants	139	8	0.4	5 ^	6 ^	7	8	10	11 ^	12 ^	—
SBP nonparticipants	564	8	0.2	6	6	7	8	9	10	11	—
High School Students, Male											—
SBP participants	83	8	0.4	6 ^	6 ^	7	8	9	9 ^	10 ^	—
SBP nonparticipants	283	8	0.3	6 ^	6	7	8	9	10	11 ^	—
High School Students, Female											—
SBP participants	56	--	--	--	--	--	--	--	--	--	—
SBP nonparticipants	281	8	0.4	5 ^	6	7	8	9	10	11 ^	—

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old. The AI for these students is the same as the AI for students 14 to 18 years.

AI = Adequate Intake; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

– Not applicable. There is no single DRI reference value for subgroups of students defined by school type or school type and gender. The DRIs include reference values for population subgroups defined by age and gender. These subgroups and the relevant reference values are shown in the top panel of the table.

-- Sample size is too small to produce reliable estimate.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table L.43. Usual Daily Cholesterol Intakes: SBP Participants and Matched Comparison Group of Nonparticipants

	Cholesterol Intakes (mg)										DGA = < 300 mg	
	Percentiles											
	N	Mean	SE	5	10	25	50	75	90	95	% Above DGA	SE
By Age/Gender Groups												
6 to 8 Years ^a												
SBP participants	119	152	11.3	90 ^	101 ^	122	147	177	210 ^	231 ^	<3	2.26
SBP nonparticipants	239	181	9.4	110 ^	122	146	176	210	246	272 ^	<3	2.49
9 to 13 Years												
SBP participants	220	209	11.6	117 ^	132	160	200	248	299	336 ^	9.8	5.44
SBP nonparticipants	716	203	10.0	125	138	164	197	236	275	301	5.1	4.39
9 to 13 Years, Male												
SBP participants	129	222	14.2	138 ^	152 ^	179	215	258	301 ^	329 ^	10.3 ^	7.84
SBP nonparticipants	365	214	10.1	135 ^	148	174	208	248	288	315 ^	7.5	4.88
9 to 13 Years, Female												
SBP participants	91	191	15.4	119 ^	131 ^	154	185	221	257 ^	286 ^	3.7 ^	4.34
SBP nonparticipants	354	186	17.7	109 ^	123	148	181	218	256	283 ^	3.1 ^	6.42
14 to 18 Years ^b												
SBP participants	170	221	21.7	124 ^	139 ^	170	210	261	316 ^	356 ^	13.0	7.70
SBP nonparticipants	695	226	10.3	110	129	165	215	273	335	378	17.0	6.12
14 to 18 Years, Male ^b												
SBP participants	104	284	27.9	177 ^	196 ^	230	274	327	383 ^	422 ^	36.9	18.10
SBP nonparticipants	354	256	16.3	132 ^	153	192	245	308	375	422 ^	27.7	8.04
14 to 18 Years, Female ^b												
SBP participants	66	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	341	184	9.7	95 ^	111	139	176	221	270	301 ^	5.1 ^	6.65
All Students												
SBP participants	508	197	10.3	105	119	147	186	235	288	326	8.0	4.64
SBP nonparticipants	1,644	200	6.7	122	135	161	194	233	273	301	5.1	4.19
All Students, Male												
SBP participants	291	220	11.2	123 ^	139	169	210	260	314	352 ^	12.8	6.06
SBP nonparticipants	829	212	8.3	130	143	171	205	246	290	319	7.9	4.53
All Students, Female												
SBP participants	217	170	11.0	95 ^	107	130	162	201	243	274 ^	<3	2.59
SBP nonparticipants	815	184	8.8	111	124	147	178	215	253	277	2.6	2.96

	Cholesterol Intakes (mg)										DGA = < 300 mg	
	Percentiles											
	N	Mean	SE	5	10	25	50	75	90	95	% Above DGA	SE
By School Type and Gender												
Elementary School Students												
SBP participants	227	180	11.5	98 ^	111	135	171	214	262	294 ^	4.5 ^	3.45
SBP nonparticipants	518	190	7.9	116	129	153	184	221	258	284	3.1 ^	3.26
Elementary School Students, Male												
SBP participants	118	177	10.2	107 ^	120 ^	143	173	206	240 ^	263 ^	<3	2.74
SBP nonparticipants	258	194	10.8	122 ^	134	158	188	224	262	287 ^	3.3 ^	3.45
Elementary School Students, Female												
SBP participants	110	169	15.8	103 ^	115 ^	135	163	196	231 ^	256 ^	<3	2.39
SBP nonparticipants	260	184	10.3	113 ^	126	149	179	213	248	272 ^	<3	3.04
Middle School Students												
SBP participants	144	217	14.1	118 ^	133 ^	163	205	258	314 ^	358 ^	12.7 ^	6.30
SBP nonparticipants	568	182	8.0	112	124	147	177	212	247	271	<3	2.47
Middle School Students, Male												
SBP participants	92	237	21.5	146 ^	160 ^	189	229	275	324 ^	359 ^	15.6 ^	10.69
SBP nonparticipants	291	204	11.4	128 ^	141	166	198	235	272	297 ^	4.8 ^	3.46
Middle School Students, Female												
SBP participants	52	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	277	152	9.7	94 ^	104	122	148	176	206	226 ^	<3	1.04
High School Students												
SBP participants	137	224	21.2	121 ^	137 ^	169	212	266	325 ^	369 ^	14.9	7.70
SBP nonparticipants	564	226	10.7	110	130	166	215	274	337	381	17.4	5.64
High School Students, Male												
SBP participants	82	300	28.3	184 ^	204 ^	242	289	347	409 ^	453 ^	44.4	16.38
SBP nonparticipants	283	256	15.7	145 ^	165	200	247	302	359	398 ^	25.5	9.62
High School Students, Female												
SBP participants	55	--	--	--	--	--	--	--	--	--	--	--
SBP nonparticipants	281	181	13.4	79 ^	95	128	170	222	277	317 ^	6.6 ^	5.34

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Sample sizes for some subgroups of students may differ from the total sample size for the group because outliers had to be omitted (either for a subgroup or for the total group) in order to estimate usual intake distributions for specific nutrients.

This analysis made comparisons to the 2010 *Dietary Guidelines for Americans* recommended limit on cholesterol because these recommendations were in effect when data for this study were collected. The 2015–2020 *Dietary Guidelines for Americans* do not place a limit on cholesterol.

^aThe DRI age group is 4 to 8 years; however, the dietary recall sample does not include 4- and 5-year-olds. This age group is not broken out by gender because of small sample sizes.

^bIncludes 13 students (9 males and 4 females) that were 19 years old.

DGA = 2010 *Dietary Guidelines for Americans*; DRI = Dietary Reference Intake; N = number (sample size); NCI = National Cancer Institute; SBP = School Breakfast Program; SE = standard error.

-- Sample size is too small to produce reliable estimate.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table L.44. Percentage of SBP Participants and Matched Comparison Group of Nonparticipants with Acceptable, Inadequate, or Excessive Usual Daily Nutrient Intakes

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Macronutrients								
Total Fat								
% within AMDR	86.4	91.0	88.8 ^	85.5	89.0 ^	65.4	90.9	81.0
% > AMDR	8.3 ^	6.4	10.4 ^	11.9	9.9 ^	29.0	7.0	14.7
% < AMDR	5.3 ^	<3	<3	<3	<3	5.6	<3	4.2
Saturated Fat								
% > DGA	50.7	56.0	69.6	56.1	65.3	60.3	57.7	62.9
Linoleic Acid								
% within AMDR	94.2 ^	88.1	95.0 ^	96.5 ^	92.1 ^	91.1	95.4	90.2
% > AMDR	<3	<3	<3	<3	<3	3.5 ^	<3	1.5
% < AMDR	5.4 ^	11.2	4.6 ^	<3	6.0 ^	5.4	4.2	8.3
Alpha-Linolenic Acid								
% within AMDR	64.5	58.3	60.6	64.3	59.1	62.4	65.0	58.8
% > AMDR	<3	<3	<3	<3	<3	<3	<3	<3
% < AMDR	35.2	41.7	39.4	35.7	40.9	37.6	35.0	41.2
Carbohydrate								
% < EAR	<3	<3	<3	<3	<3	<3	<3	<3
% within AMDR	>97	>97	>97	>97	>97	87.9*	>97	97.4
% > AMDR	<3	<3	<3	<3	<3	<3	<3	<3
% < AMDR	<3	<3	<3	<3	<3	10.4*	<3	1.8
Protein								
% < EAR	<3	6.6	5.8 ^	12.4	30.7	23.5	11.9	14.1
% within AMDR	>97	>97	>97	>97	>97	>97	>97	98.5
% > AMDR	<3	<3	<3	<3	<3	<3	<3	<3
% < AMDR	<3	<3	<3	<3	<3	<3	<3	1.4*
Vitamins and Minerals with EARs (Percentage < EAR)								
Vitamin A	6.4 ^	11.2	31.8	37.9	49.6	54.6	19.3	28.0
Vitamin C ^a	<3	3.6 ^	19.4	24.5	35.2	49.6	9.9	16.7
Vitamin D	61.6	72.1	76.5	77.3	72.7	79.1	66.7	73.2
Vitamin E	61.0	58.7	84.3	86.5	83.7	89.6	70.4	70.3
Vitamin B ₆	<3	<3	<3	<3	14.4	4.3	<3	<3
Vitamin B ₁₂	<3	<3	<3	<3	<3	9.9	<3	2.4***
Folate	<3	<3	6.5 ^	9.1	17.6	21.6	3.8 ^	6.2
Niacin ^b	<3	<3	<3	<3	3.7 ^	<3	<3	<3
Riboflavin	<3	<3	<3	<3	4.1 ^	8.0	<3	<3

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Thiamin	<3	<3	<3	<3	9.6 ^	8.9	<3	1.4
Calcium	23.8	34.2	49.3	66.3*	41.3	57.0	30.8	46.4
Iron ^c	<3	<3	<3	<3	<3	<3	<3	<3
Magnesium	3.7 ^	5.8	26.4	30.7	64.5	72.0	24.7	30.5
Phosphorus	<3	7.3	9.9 ^	29.8**	16.2	24.3	<3	13.3**
Zinc	<3	3.0 ^	8.1 ^	7.0	12.5 ^	26.6	<3	9.3*
Sodium and Cholesterol (% > UL or DGA)								
Sodium (% > UL)	96.6 ^	>97	>97	91.8	84.4	91.4	96.9 ^	95.8
Sodium (% > DGA)	90.6	92.5	96.2 ^	88.1	84.3	91.4	94.4	92.8
Cholesterol (% > DGA) ^d	4.5 ^	3.1 ^	12.7 ^	<3	14.9	17.4	8.0	5.1
Potassium and Dietary Fiber (mean % of AI)^e								
Potassium	60.9	58.8	53.7	48.5*	56.7	52.2	58.1	55.4
Dietary Fiber	66.1	65.0	58.3	51.0**	55.4	50.7	62.0	58.9
Dietary Fiber Density (g/1,000 calories)	67.3	67.1	62.4	62.9	59.9	58.0	64.5	63.8
Number of Students	228	520	144	570	139	564	511	1,654

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010). Actual sample sizes for some nutrients and subgroups of students differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by student subgroup basis, in order to estimate usual nutrient intake distributions.

^aThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^bNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^cComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^dThis analysis made comparisons to the 2010 *Dietary Guidelines for Americans* recommended limit on cholesterol because these recommendations were in effect when data for this study were collected. The 2015–2020 *Dietary Guidelines for Americans* do not place a limit on cholesterol.

^eThe AI cannot be used to estimate the prevalence of inadequate intakes of potassium and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = *2010 Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; NCI = National Cancer Institute; SBP = School Breakfast Program; UL = Tolerable Upper Intake Level.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

Table L.45. Mean Proportion of 24-Hour Nutrient Intakes Contributed by Breakfast: SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Calories	20.9	20.6	19.8	19.5	20.5	20.2
Macronutrients						
Total Fat	16.2	19.0*	15.3	17.4	15.9	18.5*
Saturated Fat	18.4	22.2*	16.9	19.3	18.0	21.2*
Monounsaturated Fat	15.7	18.9*	14.4	17.4*	15.3	18.4**
Polyunsaturated Fat	15.3	15.1	15.9	15.9	15.5	15.4
Linoleic acid	15.1	15.1	15.9	15.9	15.3	15.4
Alpha-linolenic acid	17.0	16.4	16.9	15.2	17.0	16.0
Carbohydrate	24.5	23.0	23.4	21.8	24.2	22.6
Protein	17.6	16.7	17.3	16.7	17.5	16.7
Vitamins						
Vitamin A	33.0	35.9	35.2	34.8	33.6	35.5
Vitamin C	32.8	25.2**	29.3	23.4*	31.8	24.5***
Vitamin D	34.9	35.1	36.3	36.2	35.3	35.5
Vitamin E	15.2	16.8	15.1	17.3	15.2	16.9
Vitamin B ₆	27.2	29.5	28.2	27.4	27.4	28.8
Vitamin B ₁₂	29.9	34.2	31.0	32.9	30.2	33.7
Folate	28.5	35.9***	29.7	30.2	28.8	33.9**
Niacin	21.7	26.0*	22.6	22.4	22.0	24.7
Riboflavin	31.6	33.1	32.5	31.0	31.8	32.4
Thiamin	27.4	30.5	28.7	27.0	27.7	29.3
Minerals						
Calcium	29.6	27.3	29.5	25.8	29.6	26.8
Iron	27.1	32.4*	29.1	28.8	27.7	31.1
Magnesium	23.2	21.0	22.1	20.9	22.9	21.0
Phosphorus	22.9	21.8	23.2	21.5	23.0	21.7
Potassium	23.1	20.6*	20.9	19.9	22.4	20.3*
Sodium	15.6	16.6	16.4	15.5	15.8	16.2
Zinc	23.7	26.8	23.5	23.7	23.6	25.8

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Other Dietary Components						
Dietary Fiber	19.1	17.9	19.3	17.8	19.2	17.9
Cholesterol	16.7	17.8	18.8	19.8	17.3	18.5
Number of Students	354	498	149	838	503	1,336

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls, Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level and students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

SBP = School Breakfast Program.

Table L.46. Percentage of SBP Participants and Matched Comparison Group of Nonparticipants with Acceptable, Inadequate, or Excessive Usual Daily Nutrient Intakes, by Household Poverty Level

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Macronutrients						
Total Fat						
% within AMDR	91.4	82.8	77.1	77.4	90.9	81.0
% > AMDR	6.0	12.1	17.2	20.4	6.9	14.9
% < AMDR	<3	5.1	5.7 ^	2.2	<3	4.1
Saturated Fat						
% > DGA	56.0	59.8	59.7	67.4	57.7	63.6
Linoleic Acid						
% within AMDR	94.8 ^	90.4	88.3 ^	89.2	95.3	90.3
% > AMDR	<3	<3	3.7 ^	2.8	<3	1.5
% < AMDR	4.9 ^	8.5	8.1 ^	8.0	4.3	8.2
Alpha-Linolenic Acid						
% within AMDR	62.4	60.1	70.0	54.9	64.5	59.1
% > AMDR	<3	<3	<3	<3	<3	<3
% < AMDR	37.5	39.9	29.9	45.1	35.4	40.9
Carbohydrate						
% < EAR	<3	<3	<3	<3	<3	<3
% within AMDR	>97	>97	>97	95.0	>97	97.5
% > AMDR	<3	<3	<3	<3	<3	<3
% < AMDR	<3	<3	<3	4.0	<3	1.8
Protein						
% < EAR	13.5	14.9	6.4 ^	12.4	12.0	14.3
% within AMDR	>97	>97	>97	>97	>97	98.7
% > AMDR	<3	<3	<3	<3	<3	<3
% < AMDR	<3	<3	<3	<3	<3	1.3
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	18.9	26.7	17.9	27.6	19.1	27.2
Vitamin C ^a	8.4	10.1	13.0 ^	26.6	9.9	16.1
Vitamin D	67.5	69.3	66.6	80.6	66.9	73.1
Vitamin E	71.8	71.3	69.0	64.8	70.7	69.5
Vitamin B ₆	<3	<3	<3	2.3	<3	<3
Vitamin B ₁₂	<3	<3	<3	3.8	<3	2.4***
Folate	3.4 ^	5.9	4.3 ^	5.8	4.0	6.2

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Niacin ^b	<3	<3	<3	<3	<3	<3
Riboflavin	<3	<3	<3	<3	<3	<3
Thiamin	<3	<3	<3	<3	<3	1.4
Calcium	29.8	44.5	31.8	47.5	30.4	45.7
Iron ^c	<3	<3	<3	<3	<3	<3
Magnesium	23.3	24.5	26.9	36.9	24.4	30.1
Phosphorus	<3	11.0	<3	17.0***	<3	13.5**
Zinc	5.1 ^	8.1	3.4 ^	11.3	<3	9.5*
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	94.5 ^	95.3	>97	92.0	96.7 ^	95.6
Sodium (% > DGA)	90.5	91.6	95.3 ^	89.1	94.3	92.6
Cholesterol (% > DGA) ^d	7.0	4.3	9.9 ^	9.9	7.5	4.9
Potassium and Dietary Fiber (Mean % of AI)^e						
Potassium	58.1	55.4	58.6	55.6	58.1	55.5
Dietary Fiber (mean % of AI)	62.0	58.5	62.1	59.0	62.0	59.1
Dietary Fiber Density (g/1,000 calories)	65.4	64.5	62.4	62.6	64.5	63.9
Number of Students	354	650	149	970	503	1,620

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1 and Day 2, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a breakfast, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

Usual nutrient intakes were estimated using the NCI method (Tooze et al 2010; Freedman et al. 2010).

Actual sample sizes for some nutrients and subgroups of students differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by student subgroup basis, in order to estimate usual nutrient intake distributions.

^aThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^bNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^cComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^dThis analysis made comparisons to the 2010 *Dietary Guidelines for Americans* recommended limit on cholesterol because these recommendations were in effect when data for this study were collected. The 2015–2020 *Dietary Guidelines for Americans* do not place a limit on cholesterol.

^eThe AI cannot be used to estimate the prevalence of inadequate intakes of potassium and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = *2010 Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; NCI = National Cancer Institute; SBP = School Breakfast Program; UL = Tolerable Upper Intake Level.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97.

This page has been left blank for double-sided copying.

APPENDIX M

CHAPTER 12 SUPPLEMENTAL TABLES

This page has been left blank for double-sided copying.

TABLES

M.1	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Breakfasts Consumed by SBP Participants and Matched Comparison Group of Nonparticipants: All Students.....	M.5
M.2	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Breakfasts Consumed by SBP Participants and Matched Comparison Group of Nonparticipants: Elementary School Students	M.6
M.3	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Breakfasts Consumed by SBP Participants and Matched Comparison Group of Nonparticipants: Middle School Students	M.7
M.4	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Breakfasts Consumed by SBP Participants and Matched Comparison Group of Nonparticipants: High School Students	M.8
M.5	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants: All Students	M.9
M.6	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants: Elementary School Students.....	M.10
M.7	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants: Middle School Students	M.11
M.8	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants: High School Students.....	M.12
M.9	Mean Healthy Eating Index-2010 Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level.....	M.13
M.10	Mean Healthy Eating Index-2010 Scores, as a Percentage of Maximum Scores, for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level	M.15

This page has been left blank for double-sided copying.

Table M.1. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Breakfasts Consumed by SBP Participants and Matched Comparison Group of Nonparticipants: All Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	5.0	5.0	100.0	99.9
Whole Fruit	5	5.0	4.9	99.3	98.3
Total Vegetables	5	0.3	0.4 ^	6.1	8.4 ^
Greens and Beans	5	0.0 ^	0.0 ^	0.4 ^	0.9 ^
Whole Grains	10	9.8	6.8***	97.6	67.7***
Dairy	10	10.0	10.0	100.0	100.0
Total Protein Foods	5	1.9	2.1	37.1	42.3
Seafood and Plant Proteins	5	1.3	1.6	25.8	32.7
Fatty Acids	10	2.1	1.6	21.1	15.6
Moderation (higher score indicates lower consumption)					
Refined Grains	10	7.8	6.1**	78.3	60.6**
Sodium	10	8.7	7.9	87.4	79.0
Empty Calories	20	14.2	12.5*	70.9	62.3*
Total Score	100	66.1	58.9***	66.1	58.9***
Number of Students		511	1,360	511	1,360

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

HEI scores are based on breakfast intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table M.2. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Breakfasts Consumed by SBP Participants and Matched Comparison Group of Nonparticipants: Elementary School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	5.0	5.0	100.0	99.4
Whole Fruit	5	5.0	4.8	99.6	96.6
Total Vegetables	5	0.3 ^	0.4 ^	5.4 ^	8.6 ^
Greens and Beans	5	0.0 ^	0.0 ^	0.8 ^	1.0 ^
Whole Grains	10	9.7	7.7*	96.6	76.8*
Dairy	10	10.0	10.0	100.0	100.0
Total Protein Foods	5	1.5	1.7	30.1	33.5
Seafood and Plant Proteins	5	1.2	1.1	23.1	21.2
Fatty Acids	10	3.0	1.6	30.3	15.6
Moderation (higher score indicates lower consumption)					
Refined Grains	10	8.2	6.2*	82.0	61.7*
Sodium	10	9.6	8.2	95.5	82.2
Empty Calories	20	14.4	12.3	72.1	61.4
Total Score	100	67.8	58.9**	67.8	58.9**
Number of Students		228	466	228	466

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

HEI scores are based on breakfast intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the ** 0.01 level or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table M.3. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Breakfasts Consumed by SBP Participants and Matched Comparison Group of Nonparticipants: Middle School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	5.0	4.9	99.6	97.8
Whole Fruit	5	3.9	4.3	77.7	86.8
Total Vegetables	5	0.2 ^	0.2 ^	3.5 ^	3.6 ^
Greens and Beans	5	0.0	0.0 ^	0.0	0.3 ^
Whole Grains	10	9.6	6.0***	95.9	60.3***
Dairy	10	10.0	10.0	100.0	100.0
Total Protein Foods	5	2.0	2.4	39.4	47.6
Seafood and Plant Proteins	5	1.2 ^	2.1 ^	23.1 ^	42.6 ^
Fatty Acids	10	1.5 ^	0.5 ^	14.9 ^	4.7 ^
Moderation (higher score indicates lower consumption)					
Refined Grains	10	7.6	7.5	75.5	74.7
Sodium	10	9.0	8.1	90.0	81.4
Empty Calories	20	12.9	12.8	64.6	63.8
Total Score	100	62.7	58.8	62.7	58.8
Number of Students		144	459	144	459

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

HEI scores are based on breakfast intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table M.4. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for Breakfasts Consumed by SBP Participants and Matched Comparison Group of Nonparticipants: High School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	5.0	4.9	100.0	97.0
Whole Fruit	5	4.8	4.8	96.6	95.8
Total Vegetables	5	0.5	0.3 ^{**}	9.4	5.0 ^{**}
Greens and Beans	5	0.0	0.0	0.0	0.0
Whole Grains	10	9.6	5.5 ^{***}	95.8	55.4 ^{***}
Dairy	10	10.0	10.0	100.0	100.0
Total Protein Foods	5	2.5	2.5	50.4	49.9
Seafood and Plant Proteins	5	1.7	2.0	33.4	39.4
Fatty Acids	10	1.0 [^]	2.1	10.2 [^]	20.7
Moderation (higher score indicates lower consumption)					
Refined Grains	10	7.3	5.9	72.5	59.0
Sodium	10	6.7	8.0	67.0	79.8
Empty Calories	20	14.6	12.0 ^{***}	73.1	60.2 ^{***}
Total Score	100	63.7	57.9 [*]	63.7	57.9 [*]
Number of Students		139	435	139	435

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes students who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Breakfast intakes for both SBP participants and the matched comparison group of nonparticipants include all foods and beverages consumed at breakfast. For SBP participants, this may include, in addition to foods and beverages obtained as part of a reimbursable breakfast, foods and beverages obtained from non-reimbursable sources at school, from home, and/or from other sources outside of school.

HEI scores are based on breakfast intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table M.5. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants: All Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.8	4.3	96.3	86.4
Whole Fruit	5	5.0	5.0	100.0	100.0
Total Vegetables	5	2.2	2.3	44.1	46.2
Greens and Beans	5	0.8	1.5	16.2	30.1
Whole Grains	10	6.0	4.8*	59.9	48.2*
Dairy	10	9.5	9.2	95.5	92.2
Total Protein Foods	5	4.7	5.0	94.6	99.8
Seafood and Plant Proteins	5	3.1	3.0	61.3	59.5
Fatty Acids	10	4.1	4.0	41.2	40.2
Moderation (higher score indicates lower consumption)					
Refined Grains	10	6.0	5.3	60.0	53.3
Sodium	10	5.0	4.2**	50.0	41.7**
Empty Calories	20	14.3	14.1	71.7	70.7
Total Score	100	65.6	62.8	65.6	62.8
Number of Students		511	1,654	511	1,654

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the ** 0.01 level or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

Table M.6. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants: Elementary School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.9	4.7	99.0	93.0
Whole Fruit	5	5.0	5.0	100.0	100.0
Total Vegetables	5	2.3	2.2	45.7	44.3
Greens and Beans	5	1.0	1.0	19.5	19.6
Whole Grains	10	6.3	4.9*	62.7	48.9*
Dairy	10	9.8	9.9	97.6	99.2
Total Protein Foods	5	4.3	4.8	86.2	95.4
Seafood and Plant Proteins	5	2.7	3.6	54.5	71.3
Fatty Acids	10	4.3	3.8	43.0	37.6
Moderation (higher score indicates lower consumption)					
Refined Grains	10	6.0	5.2	59.6	52.0
Sodium	10	5.4	4.4*	53.7	44.4*
Empty Calories	20	14.5	14.0	72.4	70.2
Total Score	100	66.4	63.4	66.4	63.4
Number of Students		228	520	228	520

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

Table M.7. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants: Middle School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.4	4.8	88.8	96.0
Whole Fruit	5	4.9	5.0	98.7	99.9
Total Vegetables	5	2.2	2.2	43.8	43.5
Greens and Beans	5	0.9 ^	1.0 ^	17.5 ^	19.8 ^
Whole Grains	10	6.0	5.4	59.7	54.2
Dairy	10	9.0	9.1	90.3	91.1
Total Protein Foods	5	4.9	5.0	98.3	99.3
Seafood and Plant Proteins	5	2.6	2.9	52.7	57.7
Fatty Acids	10	4.1	4.5	41.2	44.6
Moderation (higher score indicates lower consumption)					
Refined Grains	10	6.1	5.7	60.9	57.2
Sodium	10	4.7	4.3	46.9	42.6
Empty Calories	20	13.8	15.1	69.1	75.5
Total Score	100	63.7	64.9	63.7	64.9
Number of Students		144	570	144	570

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality. Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

None of the difference between participants and the matched comparison group of nonparticipants are significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table M.8. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants: High School Students

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.3	3.4*	85.6	68.3*
Whole Fruit	5	4.7	4.5	93.3	89.0
Total Vegetables	5	2.2	2.3	43.5	46.7
Greens and Beans	5	1.1	1.8	23.0	35.7
Whole Grains	10	5.3	4.5	53.4	44.7
Dairy	10	9.3	8.1	92.6	81.2
Total Protein Foods	5	5.0	5.0	99.8	100.0
Seafood and Plant Proteins	5	3.4	2.6	68.2	51.5
Fatty Acids	10	3.7	4.5	37.3	44.5
Moderation (higher score indicates lower consumption)					
Refined Grains	10	6.0	5.4	59.8	53.8
Sodium	10	4.4	3.9	43.7	38.6
Empty Calories	20	14.4	14.0	72.2	70.0
Total Score	100	63.8	59.8*	63.8	59.8*
Number of Students		139	564	139	564

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Mean component scores may not sum to the total score due to rounding.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

Table M.9. Mean Healthy Eating Index-2010 Scores for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level

HEI-2010 Component	Maximum Score	Students from Lower Income Households		Students from Higher Income Households		All Students	
		Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)							
Total Fruit	5	4.9	4.3	4.5	4.3	4.8	4.3
Whole Fruit	5	5.0	5.0	4.9	5.0	5.0	5.0
Total Vegetables	5	2.3	2.3	2.1	2.2	2.2	2.3
Greens and Beans	5	0.9	1.4 ^	1.0 ^	1.5	0.8	1.4
Whole Grains	10	6.0	4.9	6.1	4.7*	6.0	4.8**
Dairy	10	9.6	9.5	9.3	8.7	9.6	9.2
Total Protein Foods	5	4.6	5.0	4.9	5.0	4.7	5.0
Seafood and Plant Proteins	5	2.7	2.9	3.7	3.4	3.1	3.1
Fatty Acids	10	4.1	4.0	4.0	3.9	4.1	4.0
Moderation (higher score indicates lower consumption)							
Refined Grains	10	5.6	5.5	7.0	4.9***	6.0	5.3
Sodium	10	4.9	4.2	5.3	4.1*	5.0	4.2**
Empty Calories	20	14.4	13.9	14.2	14.5	14.3	14.1
Total Score	100	64.9	63.1	67.0	62.2*	65.6	62.8
Number of Students		354	650	149	970	503	1,620

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a breakfast, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality. Mean component scores may not sum to the total score due to rounding.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table M.10. Mean Healthy Eating Index-2010 Scores, as a Percentage of Maximum Scores, for 24-Hour Intakes for SBP Participants and Matched Comparison Group of Nonparticipants, by Household Poverty Level

HEI-2010 Component	Maximum Score	Students from Lower Income Households		Students from Higher Income Households		All Students	
		Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Adequacy (higher score indicates higher consumption)							
Total Fruit	5	97.5	86.9	89.3	85.9	96.2	86.5
Whole Fruit	5	99.9	99.4	98.7	100.0	100.0	100.0
Total Vegetables	5	45.1	46.9	42.5	44.0	44.0	45.9
Greens and Beans	5	17.2	28.3 ^	19.5 ^	29.8	16.1	28.8
Whole Grains	10	59.7	48.5	61.0	46.6*	60.0	47.9**
Dairy	10	96.4	94.8	93.4	87.1	95.7	92.3
Total Protein Foods	5	91.8	99.3	97.8	99.7	94.5	99.7
Seafood and Plant Proteins	5	53.9	58.3	73.2	68.6	61.5	61.8
Fatty Acids	10	41.4	40.4	40.4	39.3	41.0	40.0
Moderation (higher score indicates lower consumption)							
Refined Grains	10	55.6	55.4	69.7	49.0***	59.8	53.3
Sodium	10	48.7	42.4	53.2	41.2*	50.0	42.0**
Empty Calories	20	72.1	69.7	70.8	72.3	71.7	70.6
Total Score	100	64.9	63.1	67.0	62.2*	65.6	62.8
Number of Students		354	650	149	970	503	1,620

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a breakfast, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

HEI scores are based on daily intakes. Higher HEI scores reflect higher diet quality.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

APPENDIX N

CHAPTER 13 SUPPLEMENTAL TABLES

This page has been left blank for double-sided copying.

TABLES

N.1	Proportion of NSLP Participants and Matched Comparison Group of Nonparticipants Who Consumed One or More Competitive Foods, by Source and Time of Day	N.5
N.2	Mean Nutrient Content of Competitive Foods Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants.....	N.6
N.3	Mean Content of USDA Food Pattern Food Groups in Competitive Foods Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants	N.8
N.4	Mean Proportion of Lunch and 24-Hour Nutrient Intakes Contributed by Competitive Foods: NSLP Participants and Matched Comparison Group of Nonparticipants	N.10
N.5	Mean Proportion of Lunch and 24-Hour Food Group Intakes Contributed by Competitive Foods: NSLP Participants and Matched Comparison Group of Nonparticipants	N.12
N.6	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores among NSLP Participants and Matched Comparison Group of Nonparticipants, by Consumption of Competitive Foods	N.14
N.7	Proportion of SBP Participants and Matched Comparison Group Nonparticipants Who Consumed One or More Competitive Foods, by Source and Time of Day	N.16
N.8	Mean Nutrient Content of Competitive Foods Consumed by SBP Participants and Matched Comparison Group of Nonparticipants.....	N.17
N.9	Mean USDA Food Pattern Food Group Content in Competitive Foods Consumed by SBP Participants and Matched Comparison Group of Nonparticipants.....	N.19
N.10	Mean Proportion of Breakfast and 24-Hour Nutrient Intakes Contributed by Competitive Foods: SBP Participants and Matched Comparison Group of Nonparticipants	N.21
N.11	Mean Proportion of Breakfast and 24-Hour Intakes of USDA Food Pattern Food Groups Contributed by Competitive Foods: SBP Participants and Matched Comparison Group of Nonparticipants	N.23
N.12	Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores among SBP Participants and Matched Comparison Group of Nonparticipants, by Consumption of Competitive Foods	N.25
N.13	Proportion of NSLP Participants and Matched Comparison Group of Nonparticipants Who Consumed One or More Competitive Foods, by Source and Time of Day and by Household Poverty Level	N.27
N.14	Proportion of SBP Participants and Matched Comparison Group Nonparticipants Who Consumed One or More Competitive Foods, by Source and Time of Day and by Household Poverty Level	N.28
N.15	Relationships between Students' Consumption of Competitive Foods and Characteristics of Students, Schools, and SFAs: Regression-Adjusted Percentage of Students that Consumed Competitive Foods.....	N.29
N.16	Regression Coefficient Estimates for the Relationships between Students' Consumption of Competitive Foods and Characteristics of Students, Schools, and SFAs	N.32

This page has been left blank for double-sided copying.

Table N.1. Proportion of NSLP Participants and Matched Comparison Group of Nonparticipants Who Consumed One or More Competitive Foods, by Source and Time of Day

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Consumed Competitive Food(s) from:								
Any Source	23.4	19.0	30.0	24.7	42.7	26.0**	29.3	21.2**
Vending Machine	0.2	0.0	1.5	2.0	8.5	5.1	2.5	2.1
In cafeteria	0.0	0.0	1.0	0.4	4.4	2.2	1.2	0.9
Within 20 feet of cafeteria	0.1	0.0	0.3	0.2	2.0	2.7	0.6	0.9
Other location	0.1	0.0	0.2	1.4	3.3	0.2*	0.9	0.3
School Store	2.9	0.0	0.6	0.6	0.1	2.7	1.8	1.0
Snack Bar, Food Cart, Other A la Carte-Only Source	1.4	3.7	3.8	1.2	3.9	2.5	2.5	2.2
Cafeteria Line Selling A la Carte and Reimbursable	15.0	13.6	24.2	19.9	29.7	14.9**	20.3	14.0*
Fundraisers, Class Parties, Rewards, Other	5.2	1.8*	1.3	1.9	4.1	2.7	4.2	2.6
Number of Students	540	208	406	308	308	395	1,254	911
Among Students Who Consumed Competitive Foods, When Food Was Consumed:								
As Part of Breakfast	14.0	--	6.8	--	14.8	11.5	12.9	8.7
As Part of Lunch	79.4	--	80.2	--	81.9	83.1	80.5	86.7
Other Time, at School	9.5	--	5.5	--	11.5	12.4	9.4	7.1
Other Time, Outside of School	4.0	--	13.7	--	7.6	6.6	7.2	3.4*
Number of Students	135	37	107	74	119	110	361	221

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Note: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the ** 0.01 level or * 0.05 level.

-- Sample size is too small to produce reliable estimate.

NSLP = National School Lunch Program.

Table N.2. Mean Nutrient Content of Competitive Foods Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants

	All Students	
	Participants	Nonparticipants
All Competitive Foods		
Calories (kcal)	158	175
Total Fat (g)	6	5
Saturated Fat (g)	2	2
Vitamin A (mcg RAE)	38	45
Vitamin C (mg)	3	5
Vitamin D (mcg)	0.2	0.7**
Folate (mcg DFE)	28	27
Calcium (mg)	67	105*
Iron (mg)	0.9	0.8
Magnesium (mg)	20	21
Potassium (mg)	131	214**
Sodium (mg)	155	186
Dietary Fiber (g)	1	1
Competitive Foods Consumed at Lunch		
Calories (kcal)	118	136
Total Fat (g)	5	4
Saturated Fat (g)	1	1
Vitamin A (mcg RAE)	21	37
Vitamin C (mg)	2	4
Vitamin D (mcg)	0.1 ^	0.5**
Folate (mcg DFE)	18	22
Calcium (mg)	43	89**
Iron (mg)	0.6	0.7
Magnesium (mg)	14	18
Potassium (mg)	98	178*
Sodium (mg)	111	155
Dietary Fiber (g)	1	1
Competitive Foods Consumed at Other Times of Day		
Calories (kcal)	39	39
Total Fat (g)	2	1 ^
Saturated Fat (g)	1 ^	0
Vitamin A (mcg RAE)	17 ^	8 ^
Vitamin C (mg)	1 ^	1 ^
Vitamin D (mcg)	0.1 ^	0.1 ^
Folate (mcg DFE)	11	4**
Calcium (mg)	24	17 ^
Iron (mg)	0.3	0.2 ^
Magnesium (mg)	6	4
Potassium (mg)	33	36
Sodium (mg)	43	31
Dietary Fiber (g)	0	0**

	All Students	
	Participants	Nonparticipants
Low-Nutrient/Energy-Dense Competitive Foods^a		
Calories (kcal)	104	77
Total Fat (g)	4	2 ^{**}
Saturated Fat (g)	1	1 ^{**}
Vitamin A (mcg RAE)	11	5 [^]
Vitamin C (mg)	1	2 [^]
Vitamin D (mcg)	0.02 [^]	0.00 [^]
Folate (mcg DFE)	11	9
Calcium (mg)	20	7 ^{***}
Iron (mg)	0.4	0.3
Magnesium (mg)	8	4 ^{**}
Potassium (mg)	61	48
Sodium (mg)	73	63
Dietary Fiber (g)	0	0
Number of Students	361	221

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes students who consumed at least one competitive food, including those who did not consume a lunch.

Note: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

^aLow-nutrient/energy-dense foods include all candy, cakes/cookies/brownies and other baked desserts, pies, muffins, donuts, sweet rolls, toaster pastries, frozen desserts, snack chips (unless low-fat), French fries, and caloric beverages other than milk or 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

DFE = dietary folate equivalents; NSLP = National School Lunch Program; RAE = retinol activity equivalents.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table N.3. Mean Content of USDA Food Pattern Food Groups in Competitive Foods Consumed by NSLP Participants and Matched Comparison Group of Nonparticipants

	All Students	
	Participants	Nonparticipants
All Competitive Foods		
Vegetables (cups)	0.05	0.05
Fruits (cups) ^a	0.08	0.19 ^
Grains (oz)	0.44	0.54
Whole grains (oz)	0.09	0.04 ^
Dairy (cups)	0.11	0.27**
Protein Foods (oz)	0.15 ^	0.16 ^
Oils (tsp)	0.44	0.43
Empty Calories (kcal)	67.3	61.3
Calories from solid fats (kcal)	28.8	22.1
Calories from added sugars (kcal)	38.5	39.1
Competitive Foods Consumed at Lunch		
Vegetables (cups)	0.04	0.04 ^
Fruits (cups) ^a	0.05	0.18 ^
Grains (oz)	0.30	0.46
Whole grains (oz)	0.06	0.04 ^
Dairy (cups)	0.07	0.22**
Protein Foods (oz)	0.13 ^	0.15 ^
Oils (tsp)	0.34	0.38
Empty Calories (kcal)	51.6	39.8
Calories from solid fats (kcal)	20.9	16.7
Calories from added sugars (kcal)	30.7	23.1
Competitive Foods Consumed at Other Times of Day		
Vegetables (cups)	0.01 ^	0.00 ^
Fruits (cups) ^a	0.03 ^	0.01 ^
Grains (oz)	0.14	0.08 ^
Whole grains (oz)	0.03 ^	0.00*^
Dairy (cups)	0.04 ^	0.05 ^
Protein Foods (oz)	0.02 ^	0.01 ^
Oils (tsp)	0.10	0.05 ^
Empty Calories (kcal)	15.7	21.5
Calories from solid fats (kcal)	7.9 ^	5.5 ^
Calories from added sugars (kcal)	7.8	16.0
Low-Nutrient/Energy-Dense Competitive Foods^b		
Vegetables (cups)	0.01 ^	0.03 ^
Fruits (cups) ^a	0.03 ^	0.01 ^
Grains (oz)	0.25	0.18
Whole grains (oz)	0.04 ^	0.01*^
Dairy (cups)	0.03	0.01***^
Protein Foods (oz)	0.03 ^	0.01 ^
Oils (tsp)	0.25	0.17

	All Students	
	Participants	Nonparticipants
Empty Calories (kcal)	57.5	43.4
Calories from solid fats (kcal)	22.8	13.1*
Calories from added sugars (kcal)	34.6	30.2
Number of Students	361	221

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes students who consumed at least one competitive food, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Means for food groups are rounded to two decimal places rather than one because some values that were significantly different were identical when rounded to one decimal place.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning NSLP lunches, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

Vegetable subgroups are not included in the table because means for all subgroups in all panels of the table were 0 to < 0.1 cup equivalents.

^aIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

^bLow-nutrient/energy-dense foods include all candy, cakes/cookies/brownies and other baked desserts, pies, muffins, donuts, sweet rolls, toaster pastries, frozen desserts, snack chips (unless low-fat), French fries, and caloric beverages other than milk or 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

cups = cup equivalents; oz = ounce equivalent; NSLP = National School Lunch Program; tsp = teaspoon.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table N.4. Mean Proportion of Lunch and 24-Hour Nutrient Intakes Contributed by Competitive Foods: NSLP Participants and Matched Comparison Group of Nonparticipants

	All Students	
	Participants	Nonparticipants
Proportion of Lunch Intakes Contributed by Competitive Foods Consumed^a		
Calories	19.4	33.0**
Total Fat	19.9	30.2*
Saturated Fat	19.0	31.4*
Vitamin A	9.1	36.4***
Vitamin C	11.4	29.2**
Vitamin D	4.3 ^	26.5***
Folate	14.2	31.5***
Calcium	14.2	34.8***
Iron	14.2	31.0***
Magnesium	14.2	31.4***
Potassium	12.0	33.4***
Sodium	13.3	29.1**
Dietary Fiber	12.6	30.9**
Proportion of Lunch Intakes Contributed by Low-Nutrient/Energy-Dense Competitive Foods Consumed^{a,b}		
Calories	13.9	8.4***^
Total Fat	14.4	7.6***^
Saturated Fat	14.1	7.7***^
Vitamin A	5.4 ^	4.8 ^
Vitamin C	6.3	4.5 ^
Vitamin D	<3	<3
Folate	9.1	6.1 ^
Calcium	4.9 ^	<3*
Iron	9.1	6.8 ^
Magnesium	6.9	4.3***^
Potassium	6.6	5.1 ^
Sodium	7.4	5.6 ^
Dietary Fiber	6.5	4.9 ^
Sample Size	361	217
Proportion of 24-Hour Intakes Contributed by Competitive Foods		
Calories	8.0	10.0
Total Fat	8.8	9.0 ^
Saturated Fat	8.3	9.3
Vitamin A	5.3 ^	9.9
Vitamin C	5.5 ^	9.2*
Vitamin D	<3	11.9**
Folate	5.3 ^	6.3 ^
Calcium	6.2	11.3**
Iron	6.0	7.1 ^
Magnesium	6.8	9.4*
Potassium	5.1 ^	10.3***
Sodium	5.0 ^	6.8 ^
Dietary Fiber	6.6	10.1

	All Students	
	Participants	Nonparticipants
Proportion of 24-Hour Intakes Contributed by Low-Nutrient/Energy-Dense Competitive Foods^b		
Calories	5.4 [^]	4.1 [^]
Total Fat	6.3	4.0 [^]
Saturated Fat	6.3	3.8 ^{**}
Vitamin A	<3	<3
Vitamin C	<3	<3
Vitamin D	<3	<3
Folate	<3	<3
Calcium	<3	<3 [*]
Iron	3.1 [^]	3.1 [^]
Magnesium	<3	<3
Potassium	<3	<3
Sodium	<3	<3
Dietary Fiber	3.0 [^]	<3
Number of Students	361	221

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes students who consumed at least one competitive food, including those who did not consume a lunch.

Note: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

^aSample includes only students who consumed a lunch.

^bLow-nutrient/energy-dense foods include all candy, cakes/cookies/brownies and other baked desserts, pies, muffins, donuts, sweet rolls, toaster pastries, frozen desserts, snack chips (unless low-fat), French fries, and caloric beverages other than milk or 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

NSLP = National School Lunch Program.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table N.5. Mean Proportion of Lunch and 24-Hour Food Group Intakes Contributed by Competitive Foods: NSLP Participants and Matched Comparison Group of Nonparticipants

	All Students	
	Participants	Nonparticipants
Proportion of Lunch Intakes Contributed by Competitive Foods^a		
Vegetables	6.4	10.6
Fruits ^b	6.2	19.9 [*]
Grains	13.1	19.9
Whole grains	6.0	3.9 [^]
Dairy	7.7	26.4 ^{***}
Protein Foods	4.8 [^]	8.6 [^]
Oils	14.3	19.2
Empty Calories	27.7	36.0
Calories from solid fats	23.4	27.3
Calories from added sugars	28.6	27.9
Proportion of Lunch Intakes Contributed by Low-Nutrient/Energy-Dense Competitive Foods^{a,c}		
Vegetables	<3	4.5 [^]
Fruits ^b	3.3 [^]	<3 [*]
Grains	9.2	6.3 [^]
Whole grains	3.5 [^]	<3
Dairy	4.6 [^]	3.3 [^]
Protein Foods	<3	<3
Oils	8.1	6.1 [^]
Empty Calories	24.0	15.4 [*]
Calories from solid fats	19.2	10.5 [*]
Calories from added sugars	25.4	14.0 ^{**}
Sample Size	361	217
Proportion of 24-Hour Intakes Contributed by Competitive Foods		
Vegetables	3.8 [^]	4.3 [^]
Fruits ^b	5.3 [^]	14.1
Grains	6.3	8.7 [^]
Whole grains	5.2 [^]	3.5 [^]
Dairy	5.2 [^]	15.1 ^{**}
Protein Foods	<3	3.3 [^]
Oils	8.8	11.6
Empty Calories	12.9	11.2
Calories from solid fats	11.0	10.0
Calories from added sugars	15.0	13.2
Proportion of 24-Hour Intakes Contributed by Low-Nutrient/Energy-Dense Competitive Foods^c		
Vegetables	<3	<3
Fruits ^b	<3	<3
Grains	3.8 [^]	3.3 [^]
Whole grains	<3	<3
Dairy	<3	<3
Protein Foods	<3	<3
Oils	5.0 [^]	4.3 [^]

	All Students	
	Participants	Nonparticipants
Empty Calories	11.1	7.9 [^]
Calories from solid fats	9.3	5.9 [^]
Calories from added sugars	13.4	10.2
Number of Students	361	221

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes students who consumed at least one competitive food, including those who did not consume a lunch.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning NSLP lunches, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

Vegetable subgroups are not included in the table because point estimates were unreliable for all subgroups in all panels of the table.

^aSample includes only students who consumed a lunch.

^bIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

^cLow-nutrient/energy-dense foods include all candy, cakes/cookies/brownies and other baked desserts, pies, muffins, donuts, sweet rolls, toaster pastries, frozen desserts, snack chips (unless low-fat), French fries, and caloric beverages other than milk or 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

NSLP = National School Lunch Program.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table N.6. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores among NSLP Participants and Matched Comparison Group of Nonparticipants, by Consumption of Competitive Foods

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Consumed Competitive Food	Did Not Consume Competitive Food	Consumed Competitive Food	Did Not Consume Competitive Food
NSLP Participants					
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.5	4.5	90.9	89.0
Whole Fruit	5	5.0	5.0	100.0	100.0
Total Vegetables	5	2.4	2.2	47.4	43.1
Greens and Beans	5	1.0^	0.7 ^	21.0^	13.5 ^
Whole Grains	10	5.9	5.7	58.5	57.3
Dairy	10	9.3	9.9	93.0	99.5
Total Protein Foods	5	4.9	4.9	97.0	97.3
Seafood and Plant Proteins	5	3.3	3.1	65.7	62.4
Fatty Acids	10	4.0	3.9	40.3	39.4
Moderation (higher score indicates lower consumption)					
Refined Grains	10	6.1	5.9	60.7	59.0
Sodium	10	4.6	4.7	46.2	46.9
Empty Calories	20	14.3	14.5	71.3	72.6
Total Score	100	65.2	65.0	65.2	65.0
Number of Students		361	893	361	893
Matched Nonparticipants					
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.6	4.1	91.6	82.9
Whole Fruit	5	5.0	5.0	99.9	99.9
Total Vegetables	5	2.3	2.2	46.0	43.5
Greens and Beans	5	2.2^	1.2	44.9^	23.5
Whole Grains	10	5.8	3.6**	58.0	35.9**
Dairy	10	8.6	8.2	85.6	82.1
Total Protein Foods	5	4.9	4.9	98.7	97.9
Seafood and Plant Proteins	5	2.6	3.9*	51.9	77.8*
Fatty Acids	10	4.7	3.8	47.0	37.7

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Consumed Competitive Food	Did Not Consume Competitive Food	Consumed Competitive Food	Did Not Consume Competitive Food
Moderation (higher score indicates lower consumption)					
Refined Grains	10	5.7	4.4	56.9	43.6
Sodium	10	3.9	4.6	39.1	45.9
Empty Calories	20	14.7	13.6	73.3	68.0
Total Score	100	65.0	59.4*	65.0	59.4*
Number of Students		221	690	221	690

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a lunch.

Notes: The comparison group of NSLP nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Higher HEI scores reflect higher diet quality.

Mean component scores may not sum to the total score due to rounding.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Difference between students who did and did not consume competitive foods is significantly different from zero at the ** 0.01 level or * 0.05 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table N.7. Proportion of SBP Participants and Matched Comparison Group Nonparticipants Who Consumed One or More Competitive Foods, by Source and Time of Day

	Elementary School Students		Middle School Students		High School Students		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Consumed Competitive Food(s) from:								
Any Source	22.9	21.9	25.2	25.5	37.6	34.1	26.7	25.8
Vending Machine	0.6	0.0	1.5	1.5	8.0	8.6	2.5	2.5
In cafeteria	0.0	0.0	0.9	0.7	3.0	5.0	0.9	1.4
Within 20 feet of cafeteria	0.3	0.0	0.6	0.2	1.2	2.4	0.6	0.7
Other location	0.3	0.0	0.0	0.6	3.7	1.5	1.0	0.5
School Store	2.3	2.1	1.3	1.0	2.4	0.9	2.2	1.6
Snack Bar, Food Cart, Other A la Carte-Only Source	1.2	2.3	3.2	2.2	4.7	3.0	2.4	1.9
Cafeteria Line Selling A la Carte and Reimbursable	15.6	14.8	17.6	20.7	19.2	20.3	16.8	17.4
Fundraisers, Class Parties, Rewards, Other	4.8	3.4	2.6	1.2	9.4	3.2	5.5	3.3
Number of Students	228	520	144	570	139	564	511	1,654
Among Students Who Consumed Competitive Foods, When Food Was Consumed:								
As Part of Breakfast	--	7.9	--	4.6	--	10.1	19.0	10.1
As Part of Lunch	--	86.1	--	86.0	--	84.9	73.7	83.3
Other Time, at School	--	6.2	--	4.5	--	10.6	11.6	8.2
Other Time, Outside of School	--	2.3	--	7.2	--	6.9	8.3	5.2
Number of Students	57	115	36	145	56	173	149	433

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

None of the differences between participants and the matched comparison group of nonparticipants are significantly different from zero at the 0.05 level.

-- Sample size is too small to produce reliable estimate.

SBP = School Breakfast Program.

Table N.8. Mean Nutrient Content of Competitive Foods Consumed by SBP Participants and Matched Comparison Group of Nonparticipants

	All Students	
	Participants	Nonparticipants
All Competitive Foods		
Calories (kcal)	125	175**
Total Fat (g)	5	7*
Saturated Fat (g)	1	2
Vitamin A (mcg RAE)	20	40
Vitamin C (mg)	3	4
Vitamin D (mcg)	0.1 ^	0.3
Folate (mcg DFE)	17	28*
Calcium (mg)	52	69
Iron (mg)	0.6	0.9*
Magnesium (mg)	15	19
Potassium (mg)	97	148*
Sodium (mg)	111	189***
Dietary Fiber (g)	1	1
Competitive Foods Consumed at Breakfast		
Calories (kcal)	14 ^	24 ^
Total Fat (g)	0 ^	1 ^
Saturated Fat (g)	0 ^	0 ^
Vitamin A (mcg RAE)	7 ^	7 ^
Vitamin C (mg)	0 ^	1 ^
Vitamin D (mcg)	0.0 ^	0.0 ^
Folate (mcg DFE)	2 ^	7 ^
Calcium (mg)	14 ^	9 ^
Iron (mg)	0.1 ^	0.2 ^
Magnesium (mg)	3 ^	2 ^
Potassium (mg)	11 ^	16 ^
Sodium (mg)	8 ^	30 ^
Dietary Fiber (g)	0 ^	0 ^
Competitive Foods Consumed at Other Times of Day		
Calories (kcal)	111	151*
Total Fat (g)	4	5
Saturated Fat (g)	1	2
Vitamin A (mcg RAE)	12	33**
Vitamin C (mg)	2 ^	3
Vitamin D (mcg)	0.1 ^	0.2
Folate (mcg DFE)	15	22
Calcium (mg)	38	60
Iron (mg)	0.5	0.7*
Magnesium (mg)	12	17
Potassium (mg)	86	132
Sodium (mg)	103	159*
Dietary Fiber (g)	1	1

	All Students	
	Participants	Nonparticipants
Low-Nutrient/Energy-Dense Competitive Foods^a		
Calories (kcal)	86	117
Total Fat (g)	3	4
Saturated Fat (g)	1	1
Vitamin A (mcg RAE)	9	9
Vitamin C (mg)	2 ^	2
Vitamin D (mcg)	0.01 ^	0.01 ^
Folate (mcg DFE)	9	12
Calcium (mg)	12	18
Iron (mg)	0.4	0.5
Magnesium (mg)	6	8
Potassium (mg)	51	67
Sodium (mg)	59	96
Dietary Fiber (g)	0	1
Number of Students	149	433

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes students who consumed at least one competitive food, including those who did not consume a breakfast.

Note: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

^aLow-nutrient/energy-dense foods include all candy, cakes/cookies/brownies and other baked desserts, pies, muffins, donuts, sweet rolls, toaster pastries, frozen desserts, snack chips (unless low-fat), French fries, and caloric beverages other than milk or 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

DFE = dietary folate equivalents; RAE = retinol activity equivalents; SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table N.9. Mean USDA Food Pattern Food Group Content in Competitive Foods Consumed by SBP Participants and Matched Comparison Group of Nonparticipants

	All Students	
	Participants	Nonparticipants
All Competitive Foods		
Vegetables (cups)	0.03 ^	0.05
Fruits (cups) ^a	0.06 ^	0.07
Grains (oz)	0.35	0.54 [*]
Whole grains (oz)	0.08 ^	0.08 ^
Dairy (cups)	0.07 ^	0.13
Protein Foods (oz)	0.09 ^	0.15 ^
Oils (tsp)	0.35	0.54
Empty Calories (kcal)	55.6	73.8
Calories from solid fats (kcal)	21.7	29.1
Calories from added sugars (kcal)	33.9	44.8
Competitive Foods Consumed at Breakfast		
Vegetables (cups)	0.00	0.00 ^
Fruits (cups) ^a	0.00 ^	0.02 ^
Grains (oz)	0.06 ^	0.12 ^
Whole grains (oz)	0.03 ^	0.00 ^
Dairy (cups)	0.01 ^	0.02 ^
Protein Foods (oz)	0.00 ^	0.00 ^
Oils (tsp)	0.00 ^	0.13 ^
Empty Calories (kcal)	6.7 ^	7.5 ^
Calories from solid fats (kcal)	2.6 ^	4.3 ^
Calories from added sugars (kcal)	4.0 ^	3.2 ^
Competitive Foods Consumed at Other Times of Day		
Vegetables (cups)	0.03 ^	0.05
Fruits (cups) ^a	0.06 ^	0.05
Grains (oz)	0.29	0.43
Whole grains (oz)	0.06 ^	0.07 ^
Dairy (cups)	0.06 ^	0.12
Protein Foods (oz)	0.09 ^	0.15 ^
Oils (tsp)	0.35	0.42
Empty Calories (kcal)	49.0	66.4
Calories from solid fats (kcal)	19.1	24.8
Calories from added sugars (kcal)	29.9	41.6
Low-Nutrient/Energy-Dense Competitive Foods^b		
Vegetables (cups)	0.02 ^	0.02 ^
Fruits (cups) ^a	0.01 ^	0.01 ^
Grains (oz)	0.19	0.29
Whole grains (oz)	0.02 ^	0.05 ^
Dairy (cups)	0.02	0.03
Protein Foods (oz)	0.02 ^	0.04 ^
Oils (tsp)	0.22	0.36 ^

	All Students	
	Participants	Nonparticipants
Empty Calories (kcal)	47.5	63.6
Calories from solid fats (kcal)	17.6	22.3
Calories from added sugars (kcal)	29.9	41.2
Number of Students	149	433

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes students who consumed at least one competitive food, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used. Means for food groups are rounded to two decimal places rather than one because in the equivalent NSLP table (Table N.3), some values that were significantly different were identical when rounded to one decimal place.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning SBP breakfasts, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

Vegetable subgroups are not included in the table because means for all subgroups in all panels of the table were 0 to < 0.1 cup equivalents.

None of the differences between participants and the matched comparison group of nonparticipants are significantly different from zero at the 0.05 level.

^aIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

^bLow-nutrient/energy-dense foods include all candy, cakes/cookies/brownies and other baked desserts, pies, muffins, donuts, sweet rolls, toaster pastries, frozen desserts, snack chips (unless low-fat), French fries, and caloric beverages other than milk or 100% fruit juice.

cups = cup equivalents; oz = ounce equivalent; SBP = School Breakfast Program; tsp = teaspoon.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table N.10. Mean Proportion of Breakfast and 24-Hour Nutrient Intakes Contributed by Competitive Foods: SBP Participants and Matched Comparison Group of Nonparticipants

	All Students	
	Participants	Nonparticipants
Proportion of Breakfast Intakes Contributed by Competitive Foods Consumed^a		
Calories	5.5 [^]	9.9
Total Fat	6.0 [^]	10.2
Saturated Fat	5.3 [^]	10.0
Vitamin A	6.4 [^]	8.9
Vitamin C	3.7 [^]	6.6
Vitamin D	<3	5.7 [^]
Folate	5.5 [^]	9.0
Calcium	6.6 [^]	7.6
Iron	6.4 [^]	10.0
Magnesium	6.7 [^]	8.5
Potassium	4.4 [^]	8.8
Sodium	5.5 [^]	9.8
Dietary Fiber	6.5 [^]	8.9
Proportion of Breakfast Intakes Contributed by Low-Nutrient/Energy-Dense Competitive Foods Consumed^{a,b}		
Calories	<3	7.4
Total Fat	<3	8.0
Saturated Fat	<3	7.9
Vitamin A	<3	6.1
Vitamin C	<3	4.7 [^]
Vitamin D	<3	4.4 [^]
Folate	<3	6.0
Calcium	<3	5.2 [^]
Iron	<3	7.3
Magnesium	<3	5.7 [^]
Potassium	<3	6.1
Sodium	<3	7.6
Dietary Fiber	<3	5.6 [^]
Sample Size	149	343
Proportion of 24-Hour Intakes Contributed by Competitive Foods		
Calories	6.3 [^]	9.7 ^{**}
Total Fat	7.0 [^]	10.6
Saturated Fat	6.7 [^]	9.9
Vitamin A	3.3 [^]	6.5 [*]
Vitamin C	3.7 [^]	6.4
Vitamin D	<3	4.0 ^{*^}
Folate	3.2 [^]	6.2 ^{**}
Calcium	4.7 [^]	7.2 [*]
Iron	4.2 [^]	7.3 ^{**}
Magnesium	5.6 [^]	7.5 [*]
Potassium	3.9 [^]	6.7 ^{**}
Sodium	3.6 [^]	6.8 ^{***}
Dietary Fiber	5.5 [^]	7.8

	All Students	
	Participants	Nonparticipants
Proportion of 24-Hour Intakes Contributed by Low-Nutrient/Energy-Dense Competitive Foods^b		
Calories	4.4 [^]	6.5
Total Fat	4.9 [^]	7.7
Saturated Fat	5.1 [^]	7.0
Vitamin A	<3	<3
Vitamin C	<3	3.2 [^]
Vitamin D	<3	<3
Folate	<3	3.3 [^]
Calcium	<3	<3
Iron	<3	4.1 [^]
Magnesium	<3	3.3 [^]
Potassium	<3	<3
Sodium	<3	3.7 [^]
Dietary Fiber	<3	3.7 [^]
Number of Students	149	433

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes students who consumed at least one competitive food, including those who did not consume a breakfast.

Note: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

^aSample includes only students who consumed a breakfast.

^bLow-nutrient/energy-dense foods include all candy, cakes/cookies/brownies and other baked desserts, pies, muffins, donuts, sweet rolls, toaster pastries, frozen desserts, snack chips (unless low-fat), French fries, and caloric beverages other than milk or 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

SBP = School Breakfast Program.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table N.11. Mean Proportion of Breakfast and 24-Hour Intakes of USDA Food Pattern Food Groups Contributed by Competitive Foods: SBP Participants and Matched Comparison Group of Nonparticipants

	All Students	
	Participants	Nonparticipants
Proportion of Breakfast Intakes Contributed by Competitive Foods^a		
Vegetables	<3	<3
Fruits ^b	<3	<3
Grains	5.6 [^]	9.6
Whole grains	4.6 [^]	<3
Dairy	<3	9.5
Protein Foods	<3	7.2
Oils	<3	7.4
Empty Calories	4.1 [^]	9.7
Calories from solid fats	3.7 [^]	9.6
Calories from added sugars	4.5 [^]	8.8
Proportion of Breakfast Intakes Contributed by Low-Nutrient/Energy-Dense Competitive Foods^{a,c}		
Vegetables	<3	<3
Fruits ^b	<3	<3
Grains	<3	7.4
Whole grains	<3	<3
Dairy	<3	8.0
Protein Foods	<3	6.4
Oils	<3	5.9
Empty Calories	3.0 [^]	7.9
Calories from solid fats	<3	7.4
Calories from added sugars	3.5 [^]	7.4
Sample Size	149	343
Proportion of 24-Hour Intakes Contributed by Competitive Foods		
Vegetables	3.2 [^]	4.9
Fruits ^b	4.5 [^]	4.6
Grains	4.5 [^]	8.5**
Whole grains	3.4 [^]	6.8
Dairy	3.2 [^]	7.6**
Protein Foods	<3	3.1 [^]
Oils	8.5 [^]	11.1
Empty Calories	10.0 [^]	15.0*
Calories from solid fats	8.7 [^]	13.0
Calories from added sugars	11.8 [^]	17.3*
Proportion of 24-Hour Intakes Contributed by Low-Nutrient/Energy-Dense Competitive Foods^c		
Vegetables	<3	<3
Fruits ^b	<3	<3
Grains	<3	5.1
Whole grains	<3	4.3 [^]
Dairy	<3	<3
Protein Foods	<3	<3
Oils	5.0 [^]	7.2

	All Students	
	Participants	Nonparticipants
Empty Calories	8.3 ^a	13.0*
Calories from solid fats	7.0 ^a	10.6
Calories from added sugars	10.3 ^a	15.9*
Number of Students	149	433

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes students who consumed at least one competitive food, including those who did not consume a breakfast.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

The USDA Food Pattern food groups are largely consistent with the meal components used in planning SBP breakfasts, with two exceptions: (1) fluid milk is considered a separate meal component, and (2) other dairy foods such as yogurt and cheese are counted as meat alternates.

Vegetable subgroups are not included in the table because point estimates were unreliable for virtually all subgroups in all panels of the table.

^aSample includes only students who consumed a breakfast.

^bIntakes of fruit include both whole fruit (any fresh, canned, dried, or frozen fruit) and 100% fruit juice.

^cLow-nutrient/energy-dense foods include all candy, cakes/cookies/brownies and other baked desserts, pies, muffins, donuts, sweet rolls, toaster pastries, frozen desserts, snack chips (unless low-fat), French fries, and caloric beverages other than milk or 100% fruit juice.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the ** 0.01 level or * 0.05 level.

SBP = School Breakfast Program.

^a Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3.

Table N.12. Mean Healthy Eating Index-2010 Scores and Percentage of Maximum Scores among SBP Participants and Matched Comparison Group of Nonparticipants, by Consumption of Competitive Foods

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Consumed Competitive Food	Did Not Consume Competitive Food	Consumed Competitive Food	Did Not Consume Competitive Food
SBP Participants					
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.7	4.8	93.1	96.6
Whole Fruit	5	5.0	5.0	99.6	100.0
Total Vegetables	5	2.4	2.1	48.4	42.9
Greens and Beans	5	1.3 ^	0.7	25.9 ^	14.7
Whole Grains	10	6.2	5.9	62.4	59.0
Dairy	10	8.5	9.8**	85.4	98.3**
Total Protein Foods	5	4.9	4.6	97.9	92.3
Seafood and Plant Proteins	5	3.1	3.0	61.1	59.4
Fatty Acids	10	4.5	4.0	45.1	39.8
Moderation (higher score indicates lower consumption)					
Refined Grains	10	5.6	6.1	56.3	61.3
Sodium	10	4.4	5.2	43.8	52.3
Empty Calories	20	14.5	14.3	72.3	71.5
Total Score	100	65.0	65.7	65.0	65.7
Number of Students		149	362	149	362
Matched Nonparticipants					
Adequacy (higher score indicates higher consumption)					
Total Fruit	5	4.5	4.2	90.5	84.7
Whole Fruit	5	5.0	5.0	99.8	99.9
Total Vegetables	5	2.4	2.3	48.4	45.4
Greens and Beans	5	1.7 ^	1.5 ^	33.4 ^	29.0 ^
Whole Grains	10	5.4	4.6	53.8	46.1
Dairy	10	8.8	9.4	88.3	93.5
Total Protein Foods	5	4.9	5.0	98.5	99.8
Seafood and Plant Proteins	5	3.4	2.8	68.6	56.0
Fatty Acids	10	4.6	3.8	45.9	38.2

HEI-2010 Component	Maximum Score	Mean Score		Percentage of Maximum Score	
		Consumed Competitive Food	Did Not Consume Competitive Food	Consumed Competitive Food	Did Not Consume Competitive Food
Moderation (higher score indicates lower consumption)					
Refined Grains	10	6.0	5.1*	60.3	50.8*
Sodium	10	4.6	4.0	46.2	40.1
Empty Calories	20	13.9	14.2	69.6	71.2
Total Score	100	65.3	61.8	65.3	61.8
Number of Students		433	1221	433	1221

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample includes all students, including those who did not consume a breakfast.

Notes: The comparison group of SBP nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Higher HEI scores reflect higher diet quality.

Mean component scores may not sum to the total score due to rounding.

Legumes are first counted as protein foods until the standard is met, and then remaining legumes are counted as vegetables.

Difference between students who did and did not consume competitive foods is significantly different from zero at the ** 0.01 level or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1.

Table N.13. Proportion of NSLP Participants and Matched Comparison Group of Nonparticipants Who Consumed One or More Competitive Foods, by Source and Time of Day and by Household Poverty Level

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Consumed Competitive Food(s) from:						
Any Source	25.8	21.4	34.3	21.4***	29.1	21.4*
Vending Machine	2.1	2.1	3.0	2.0	2.5	2.1
In cafeteria	1.0	1.3	1.5	0.6	1.2	0.9
Within 20 feet of cafeteria	0.4	0.8	1.0	0.9	0.6	0.9
Other location	0.8	0.0*	1.1	0.5	0.9	0.3
School Store	1.9	1.4	1.7	0.6	1.8	1.0
Snack Bar, Food Cart, Other A la Carte-Only Source	1.4	2.4	4.2	2.0	2.5	2.2
Cafeteria Line Selling A la Carte and Reimbursable	17.8	14.1	23.4	14.3*	20.0	14.2
Fundraisers, Class Parties, Rewards, Other	3.8	1.8	4.9	3.4	4.2	2.6
Number of Students	757	247	475	644	1,232	891
Among Students Who Consumed Competitive Foods, When Food Was Consumed:						
As Part of Breakfast	14.5	--	11.5	6.1	13.1	8.8
As Part of Lunch	76.4	--	85.3	87.6	80.5	86.6
Other Time, at School	8.9	--	9.0	9.8	8.9	7.0
Other Time, Outside of School	8.9	--	4.5	2.8	6.9	3.4
Number of Students	200	62	154	154	354	216

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a lunch, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

Difference between participants and the matched comparison group of nonparticipants is significantly different from zero at the *** 0.001 level or * 0.05 level.

-- Sample size is too small to produce reliable estimate.

NSLP = National School Lunch Program.

Table N.14. Proportion of SBP Participants and Matched Comparison Group Nonparticipants Who Consumed One or More Competitive Foods, by Source and Time of Day and by Household Poverty Level

	Students from Lower Income Households		Students from Higher Income Households		All Students	
	Participants	Nonparticipants	Participants	Nonparticipants	Participants	Nonparticipants
Consumed Competitive Food(s) from:						
Any Source	23.7	25.4	34.1	26.4	26.7	25.7
Vending Machine	1.5	2.5	4.9	2.4	2.5	2.5
In cafeteria	0.5	1.6	1.8	0.8	0.9	1.4
Within 20 feet of cafeteria	0.4	0.4	1.0	1.1	0.6	0.7
Other location	0.6	0.4	2.1	0.7	1.0	0.5
School Store	2.4	1.8	1.5	1.3	2.1	1.6
Snack Bar, Food Cart, Other A la Carte-Only Source	1.8	1.6	4.0	2.7	2.4	1.9
Cafeteria Line Selling A la Carte and Reimbursable	15.7	17.2	19.4	17.6	16.7	17.3
Fundraisers, Class Parties, Rewards, Other	4.2	3.0	8.8	3.9	5.5	3.3
Number of Students	354	650	149	970	503	1,620
Among Students Who Consumed Competitive Foods, When Food Was Consumed:						
As Part of Breakfast	19.1	8.8	--	13.3	19.1	10.3
As Part of Lunch	74.4	82.0	--	85.4	73.8	83.1
Other Time, at School	9.5	7.8	--	8.3	11.5	8.0
Other Time, Outside of School	10.0	6.2	--	2.8	8.2	5.1
Number of Students	91	171	55	253	146	424

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, school year 2014-2015. Tabulations are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Sample excludes 42 students with missing data on household poverty level; all other students, including those who did not consume a breakfast, are included in the analysis.

Notes: The comparison group of matched nonparticipants was constructed using inverse probability weighting to control for differences between SBP participants and nonparticipants in personal, family, and school characteristics. See Appendix G for more detail on the propensity score model and the covariates used.

Lower income households had incomes less than or equal to 185 percent of the Federal poverty level; higher income households had incomes greater than 185 percent of the Federal poverty level.

None of the difference between participants and the matched comparison group of nonparticipants are significantly different from zero at the 0.05 level.

-- Sample size is too small to produce reliable estimate.

SBP = School Breakfast Program.

Table N.15. Relationships between Students' Consumption of Competitive Foods and Characteristics of Students, Schools, and SFAs: Regression-Adjusted Percentage of Students that Consumed Competitive Foods

	Yes/ No	Elementary School Students	Middle School Students	High School Students	All Students
Percentage of Students that Consumed Competitive Foods		21.3	26.8	33.1	26.5
Student Characteristics					
Student Race and Ethnicity					
White, non-Hispanic (<i>reference category</i>)		22.0	26.1	28.5	24.8
Hispanic		18.0	27.3	38.8	26.5
Black, non-Hispanic		20.6	37.0	52.3**	33.1*
Other		24.9	26.3	29.3	26.1
Student Is Female	Y	24.2	28.0	39.5**	30.1**
	N	17.2	27.0	27.0	22.9
Student Is Certified for Free or Reduced-Price Meals	Y	17.4	22.8	30.1	22.7
	N	28.6	32.7	34.9	30.7
Student Is an NSLP Participant	Y	24.6**	30.7	43.3*	32.2***
	N	10.8	23.8	27.2	19.8
Student Is an SBP Participant	Y	21.8	26.6	31.0	26.5
	N	20.1	27.7	33.4	26.3
Student's Household Receives Benefits from an Assistance Program ^a	Y	25.5	29.3	33.5	29.6
	N	16.8	27.0	33.0	25.1
Student Is a Picky Eater [Parent-reported]					
Yes, very (<i>reference category</i>)		16.8	25.9	36.7	26.3
Somewhat		21.7	31.9	30.2	27.1
No		21.4	22.3	32.3	25.5
Amount Student Eats Compared to Students of the Same Age [Parent-reported]					
Larger amount (<i>reference category</i>)		22.9	26.4	36.0	28.6
Same amount		20.6	28.9	32.2	26.5
Smaller amount		16.7	23.2	23.8	19.4*
Student Has Food Allergies or Special Dietary Needs	Y	34.1	26.8	27.1	29.5
	N	19.4	27.6	33.7	26.1
Student's Level of Activity Compared to Students of the Same Age [Parent-reported]					
Less active (<i>reference category</i>)		23.5	29.9	35.4	28.9
About as active		20.1	22.3	31.3	24.3
More active		20.1	31.8	31.6	26.7
Much more active		21.2	35.7	39.8	29.9

	Yes/ No	Elementary School Students	Middle School Students	High School Students	All Students
School and SFA Characteristics					
Share of Students Approved for Free or Reduced-Price Meals					
Less than 40 percent (<i>reference category</i>)		28.9	33.1	37.7	31.2
40 percent or more		18.3**	24.6	25.9**	23.1*
Urbanicity					
Urban (<i>reference category</i>)		24.0	32.0	28.6	28.0
Suburban		19.2	22.7	37.1	25.2
Rural		20.2	32.2	29.6	26.9
School Size					
Fewer than 500 students (<i>reference category</i>)		24.0	33.3	32.8	28.5
500 to 999 students		18.9	28.6	30.4	25.0
1,000 or more students		‡	22.1	33.7	26.7
FNS Region					
Mid-Atlantic (<i>reference category</i>)		10.4	36.7	23.0	22.6
Northeast		23.8*	7.6***	15.9	17.1
Southeast		28.9*	28.4	32.0	28.5
Midwest		18.8	29.8	32.5	25.7
Southwest		14.8	23.2	52.8**	29.6
Mountain Plains		13.8	17.9	26.6	19.0
Western		27.5*	27.9	30.8	29.6
Price Charged for Paid Lunches					
School Offered Free Lunch to All Students		31.6*	16.9	44.4	34.3*
\$2.25 or less (<i>reference category</i>)		17.9	36.2	31.5	26.8
\$2.26 to \$2.50		24.7	36.2	31.5	26.8
\$2.51 to \$2.75		14.9	22.8	29.3	23.5
More than \$2.75		15.8	29.3	40.9	28.4
Competitive Foods					
School Sells Foods Other than Milk on an A la Carte Basis	Y	22.6	28.8	33.1	27.5
	N	15.8	12.2	29.9	19.1
School Sells Foods and Beverages in Vending Machine	Y	13.9	29.7	32.5	26.1
	N	21.9	25.4	36.8	26.6
School Sells Foods and/or Beverages via a School Store or Snack Bar	Y	19.7	24.6	40.0	27.8
	N	21.0	28.2	30.0	25.8
Schools in SFA Offer Brand-Name or Chain Restaurant Foods	Y	23.0	28.4	28.8	26.1
	N	20.6	27.4	33.5	26.4
Number of Students		741	702	696	2,139
Number of Schools		104	91	94	289

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recall: Day 1, Child/Youth Interview, Parent Interview, Principal Survey, School Nutrition Manager Survey, School Food Authority Director Survey, Vending Machine and Other Sources of Foods and Beverages Checklist, A la Carte Checklist, School Food Authority Director Survey, Common Core of Data (CCD) 2011-2012, 2011

U.S. Census Bureau's Small Area Income and Poverty Estimates school district file, and Food and Nutrition Service's SFA Verification Summary Report 2012-2013, school year 2014-2015. Estimates are weighted to be nationally representative of all students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled "Y" and "N" report adjusted mean percentages for students that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted percentages are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

^aHousehold assistance included the receipt of SNAP, TANF, WIC or Medicaid benefits.

Difference in percentage between schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, * denotes that the difference in percentage between schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = school food authority.

Table N.16. Regression Coefficient Estimates for the Relationships between Students' Consumption of Competitive Foods and Characteristics of Students, Schools, and SFAs

	Elementary School Students	Middle School Students	High School Students	All Students
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	-28.5 (0.4)	6.3 (0.4)	51.0 (0.3)	9.5 (0.2)
Black, non-Hispanic	-9.7 (0.3)	56.8 (0.5)	111.7** (0.4)	43.8* (0.2)
Other	17.8 (0.5)	0.6 (0.5)	4.3 (0.5)	7.4 (0.3)
Student Is Female	48.7 (0.3)	5.7 (0.2)	63.8** (0.2)	39.8** (0.1)
Student Is Certified for Free or Reduced-Price Meals	-73.6 (0.4)	-55.0 (0.4)	-25.1 (0.7)	-44.1 (0.4)
Student Is an NSLP Participant	108.8** (0.4)	38.9 (0.3)	79.3* (0.3)	70.6*** (0.2)
Student Is an SBP Participant	11.5 (0.3)	-6.6 (0.4)	-12.2 (0.4)	1.1 (0.2)
Student's Household Receives Benefits from an Assistance Program ^a	58.6 (0.3)	12.6 (0.4)	2.8 (0.5)	24.7 (0.2)
Student Is a Picky Eater [Parent-reported]				
Yes, very (<i>reference category</i>)				
Somewhat	35.4 (0.3)	32.8 (0.4)	-33.1 (0.4)	4.5 (0.2)
No	33.5 (0.2)	-21.3 (0.4)	-22.2 (0.4)	-4.2 (0.2)
Amount Student Eats Compared to Students of the Same Age [Parent-reported]				
Larger amount (<i>reference category</i>)				
Same amount	-15.7 (0.3)	13.7 (0.3)	-19.5 (0.3)	-11.4 (0.1)
Smaller amount	-43.9 (0.4)	-18.9 (0.4)	-66.2 (0.4)	-54.4* (0.2)
Student Has Food Allergies or Special Dietary Needs	86.6 (0.4)	-4.1 (0.5)	-34.8 (0.4)	18.5 (0.3)

	Elementary School Students	Middle School Students	High School Students	All Students
Student's Level of Activity Compared to Students of the Same Age [Parent-reported]				
Less active (<i>reference category</i>)				
About as active	-22.7 (0.4)	-43.6 (0.5)	-21.1 (0.3)	-25.2 (0.2)
More active	-22.6 (0.5)	9.3 (0.5)	-19.3 (0.4)	-11.7 (0.2)
Much more active	-15.1 (0.5)	28.9 (0.6)	20.9 (0.5)	5.2 (0.3)
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
40 percent or more	-68.0** (0.3)	-46.5 (0.3)	-61.9** (0.2)	-43.9* (0.2)
Urbanicity				
Urban (<i>reference category</i>)	--0--	--0--	--0--	--0--
Suburban	-32.4 (0.4)	-52.9 (0.3)	44.4 (0.3)	-15.3 (0.2)
Rural	-25.2 (0.4)	1.0 (0.4)	5.6 (0.3)	-6.4 (0.2)
School Size				
Fewer than 500 students (<i>reference category</i>)	--0--	--0--	--0--	--0--
500 to 999 students	-34.4 (0.4)	-25.2 (0.4)	-12.4 (0.4)	-19.2 (0.2)
1,000 or more students	‡	-63.7 (0.4)	4.8 (0.4)	-9.5 (0.2)
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	108.7* (0.5)	-208.5*** (0.5)	-51.0 (1.2)	-36.7 (0.5)
Southeast	138.0* (0.6)	-41.4 (0.4)	50.9 (0.5)	33.5 (0.3)
Midwest	75.1 (0.5)	-34.2 (0.4)	53.4 (0.5)	18.1 (0.3)
Southwest	43.9 (0.5)	-71.3 (0.4)	149.9** (0.5)	39.0 (0.3)
Mountain Plains	35.3 (0.5)	-106.9 (0.7)	21.6 (0.6)	-23.3 (0.3)
Western	130.4* (0.5)	-44.5 (0.5)	44.6 (0.7)	38.9 (0.3)

	Elementary School Students	Middle School Students	High School Students	All Students
Price Charged for Paid Lunches				
School Offered Free Lunch to All Students	84.6* (0.3)	-76.1 (0.4)	73.4 (0.5)	51.5* (0.2)
\$2.25 or less (<i>reference category</i>)	--0--	--0--	--0--	--0--
\$2.26 to \$2.50	45.6 (0.4)	37.7 (0.4)	10.6 (0.4)	13.0 (0.2)
\$2.51 to \$2.75	-23.3 (0.6)	-34.9 (0.3)	-1.1 (0.4)	-5.4 (0.2)
More than \$2.75	-16.3 (0.4)	2.3 (0.4)	56.9 (0.4)	21.8 (0.2)
Competitive Foods				
School Sells Foods Other than Milk on an A la Carte Basis	49.4 (0.3)	115.1 (0.9)	16.7 (0.4)	50.5 (0.3)
School Sells Foods and Beverages in Vending Machine	-61.6 (0.3)	24.1 (0.2)	-21.4 (0.3)	-2.9 (0.2)
School Sells Foods and/or Beverages via a School Store or Snack Bar	-8.6 (0.3)	-20.9 (0.2)	49.3 (0.3)	10.9 (0.2)
Schools in SFA Offer Brand-Name or Chain Restaurant Foods	16.1 (0.4)	5.8 (0.4)	-25.0 (0.4)	-1.4 (0.2)
Number of Students	741	702	696	2,139
Number of Schools	104	91	94	289

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recall: Day 1, Child/Youth Interview, Parent Interview, Principal Survey, School Nutrition Manager Survey, School Food Authority Director Survey, Vending Machine and Other Sources of Foods and Beverages Checklist, A la Carte Checklist, School Food Authority Director Survey, Common Core of Data (CCD) 2011-2012, 2011 U.S. Census Bureau's Small Area Income and Poverty Estimates school district file, and Food and Nutrition Service's SFA Verification Summary Report 2012-2013, school year 2014-2015. Estimates are weighted to be nationally representative of all students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and percentage consuming competitive foods. Standard errors are in parentheses.

Relationship between characteristic and percentage consuming competitive foods is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

‡ Category was combined with the above category due to sparseness of observations.

^aHousehold assistance included the receipt of SNAP, TANF, WIC or Medicaid benefits.

FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SBP = School Breakfast Program; SFA = school food authority.

APPENDIX O

CHAPTER 14 SUPPLEMENTAL TABLES

This page has been left blank for double-sided copying.

TABLES

O.1	Regression Coefficient Estimates for the Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of NSLP Lunches	O.5
O.2	Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of School Foodservice Operations: Regression-Adjusted Mean Total HEI-2010 Scores	O.8
O.3	Regression Coefficients Estimates for the Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of School Foodservice Operations	O.10
O.4	Relationships between the Nutritional Quality of NSLP Participants' Diets and the School Food Environment: Regression-Adjusted Mean Total HEI-2010 Scores	O.13
O.5	Regression Coefficient Estimates for the Relationships between the Nutritional Quality of NSLP Participants' Diets and the School Food Environment	O.15
O.6	Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of Students, Schools, and SFAs: Regression-Adjusted Mean Total HEI-2010 Scores	O.18
O.7	Regression Coefficient Estimates for the Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of Students, Schools, and SFAs	O.20
O.8	Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of SBP Breakfasts: Regression-Adjusted Total Mean HEI-2010 Scores.....	O.23
O.9	Regression Coefficients Estimates for the Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of SBP Breakfasts	O.25
O.10	Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of School Foodservice Operations: Regression-Adjusted Total Mean HEI-2010 Scores	O.28
O.11	Regression Coefficients Estimates for the Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of School Foodservice Operations	O.30
O.12	Relationships between the Nutritional Quality of SBP Participants' Diets and the School Food Environment: Regression-Adjusted Mean Total HEI-2010 Scores	O.33
O.13	Regression Coefficient Estimates for the Relationships between the Nutritional Quality of SBP Participants' Diets and the School Food Environment	O.34
O.14	Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of Students, Schools, and SFAs: Regression-Adjusted Mean Total HEI-2010 Scores	O.37
O.15	Regression Coefficient Estimates for the Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of Students, Schools, and SFAs.....	O.39
O.16	Relationships between the Nutritional Quality of Students' Diets and Nutrition Outreach and Wellness Policies and Practices: Regression-Adjusted Mean Total HEI-2010 Scores.....	O.42
O.17	Regression Coefficients Estimates for the Relationships between the Nutritional Quality of Students' Diets and Nutrition Outreach and Wellness Policies and Practices	O.43

This page has been left blank for double-sided copying.

Table O.1. Regression Coefficient Estimates for the Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of NSLP Lunches

	Elementary Schools	Middle Schools	High Schools	All Schools
Overall Nutritional Quality of Prepared NSLP Lunches				
Total HEI-2010 Score of Average Lunch Prepared				
Lower Quartile (<i>reference category</i>)	--0--	--0--	--0--	--0--
	-0.3	-0.6	-2.6	-1.3
Second Quartile	(2.1)	(1.8)	(2.9)	(1.5)
	-1.0	1.9	-2.9	-0.4
Third Quartile	(1.7)	(2.0)	(3.4)	(1.5)
	-2.7	-1.3	-7.2*	-2.7*
Upper Quartile	(1.8)	(2.2)	(3.2)	(1.4)
Compliance of Daily and Weekly Lunch Menus with NSLP Nutrition Standards				
Met Daily Quantity Requirement for Grains	0.1	2.2	1.6	0.3
	(1.2)	(1.4)	(2.8)	(1.1)
Met Daily Quantity Requirement for Meats/Meat Alternates	2.3	-3.2	0.0	2.9
	(2.1)	(3.2)	(2.4)	(1.5)
Met Daily Quantity Requirement for Vegetables	1.8	3.1	†	0.5
	(2.2)	(2.3)		(1.2)
Met Weekly Quantity Requirement for Meats/Meat Alternates	0.1	-4.1*	†	-1.4
	(1.4)	(1.8)		(1.2)
Met Weekly Quantity Requirement for Vegetables	0.1	-3.1	3.7	0.7
	(2.4)	(2.7)	(2.3)	(1.6)
Met Requirement that at Least Half of Weekly Grains Are Whole Grain-Rich	5.9**	-1.7	9.3**	3.9
	(2.0)	(2.1)	(3.2)	(2.1)
Met Minimum Calorie Level	0.7	-2.4	1.9	1.7
	(1.8)	(1.8)	(3.3)	(1.4)
Met Maximum Calorie Level	0.0	3.8	†	0.4
	(1.6)	(2.3)		(1.4)
Met Target 1 Sodium Limit	6.9*	-3.6	2.9	2.8*
	(2.7)	(2.8)	(3.6)	(1.4)
Types of Foods Offered in Lunch Menus				
All Daily Menus Offered Raw Vegetables	-4.3*	3.5*	-0.8	-1.5
	(2.0)	(1.6)	(2.1)	(1.2)
Median Number of Vegetable Choices Offered per Day				
2 or fewer (<i>reference category</i>)	--0--	--0--	--0--	--0--
	5.1*	2.8	-2.3	2.2
3 to 4	(2.2)	(2.4)	(2.6)	(1.6)
	2.8	-0.5	0.6	1.7
5 or more	(2.9)	(2.7)	(3.6)	(1.9)

	Elementary Schools	Middle Schools	High Schools	All Schools
More than Half of Daily Menus Offered Dark Green Vegetables or Legumes	-1.2 (1.5)	-2.4 (2.5)	3.8 (2.6)	-0.9 (1.1)
More than Half of Daily Menus Offered Red and Orange Vegetables	-0.7 (1.8)	2.5 (1.6)	-3.1 (2.5)	0.6 (1.1)
At Least One Daily Menu Offered Side Salad Bar	-3.0 (2.1)	-1.5 (2.6)	0.3 (3.2)	0.3 (1.5)
No Daily Menus Offered French Fries or Similar Potato Products	1.2 (1.5)	-3.5 (2.0)	-0.9 (2.1)	-1.2 (1.2)
Percentage of Daily Menus that Offered Pizza or Pizza Products				
Less than 20 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
Between 20 and 99 percent	1.3 (1.3)	-9.1*** (-9.1)	0.7 (0.7)	-0.1 (-0.1)
100 percent	-6.1* (2.9)	-1.8 (2.0)	0.6 (3.4)	0.4 (1.6)
At Least One Daily Menu Offered Breaded Meat (as Separate Choice or as Part of a Sandwich)	2.6 (1.8)	2.3 (3.7)	-3.4 (2.4)	0.5 (1.3)
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	3.4* (1.6)	3.3 (2.6)	6.4 (4.5)	3.6* (1.7)
Black, non-Hispanic	-1.5 (2.5)	-0.2 (2.7)	1.3 (2.1)	0.3 (1.5)
Other	-0.3 (2.7)	5.5* (2.7)	-0.3 (2.2)	1.4 (1.6)
Student Is Female	1.2 (1.2)	-2.5 (1.4)	0.2 (2.3)	0.1 (0.9)
Student Is Certified for Free or Reduced-Price Meals	2.4 (1.5)	-0.5 (1.9)	3.4 (1.9)	1.7 (1.0)
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
40 percent or more	-0.5 (1.6)	-2.9 (1.9)	-0.5 (2.4)	0.2 (1.2)
Urbanicity				
Urban (<i>reference category</i>)	--0--	--0--	--0--	--0--
Suburban	2.6 (1.9)	2.0 (1.8)	1.1 (2.8)	1.0 (1.3)
Rural	1.5 (2.2)	-0.7 (2.4)	-0.1 (3.6)	0.2 (1.5)

	Elementary Schools	Middle Schools	High Schools	All Schools
School Size				
Fewer than 500 students (<i>reference category</i>)	--0--	--0--	--0--	--0--
500 to 999 students	3.4 (1.8)	1.8 (2.1)	-2.1 (2.9)	2.1 (1.2)
1,000 or more students	‡	-2.4 (2.6)	-0.3 (3.4)	2.7 (1.7)
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	1.2 (2.8)	4.5 (2.6)	-0.6 (4.8)	0.0 (2.6)
Southeast	3.2 (2.8)	4.7* (2.4)	-3.2 (3.4)	0.0 (1.7)
Midwest	-0.4 (2.4)	5.2* (2.3)	-1.7 (3.7)	0.4 (1.8)
Southwest	-1.0 (2.5)	0.6 (2.3)	-4.3 (3.5)	-0.3 (1.5)
Mountain Plains	5.8* (2.4)	1.8 (2.8)	-4.7 (4.2)	1.4 (2.0)
Western	1.5 (2.3)	4.6 (2.9)	0.1 (3.7)	1.2 (1.9)
Number of Students	535	402	303	1,240
Number of Schools	102	88	86	276

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, Menu Survey, school year 2014-2015. Multivariate estimates use the subset of students who participated in the National School Lunch Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for NSLP participants. Standard errors are in parentheses. For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of NSLP participants' diets.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for NSLP participants.

‡ Category was combined with the above category due to sparseness of observations.

HEI = Healthy Eating Index; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SFA = school food authority.

Table O.2. Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of School Foodservice Operations: Regression-Adjusted Mean Total HEI-2010 Scores

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Food Purchasing Characteristics					
SFA Uses Alliance for a Healthier Generation or Other Similar Tools for Selecting and Purchasing Healthy Foods	Y	59.0	57.0	55.4	57.1
	N	57.1	59.1	55.3	57.4
SFA Participates in a Food Purchasing Cooperative	Y	58.2	56.4*	55.7	57.0
	N	57.5	60.2	55.1	57.6
SFA Is Engaged in a Pouring Rights Contract	Y	57.3	58.5	54.4	57.2
	N	58.1	57.8	55.9	57.4
Schools in SFA Offer Brand-Name or Chain Restaurant Foods	Y	59.4	58.0	59.8	59.5
	N	57.8	58.1	55.1	57.2
School Participates in Farm to School Program	Y	59.0	59.5	55.2	58.7
	N	57.6	57.7	55.4	57.0
Menu Planning Characteristics					
School Uses Cycle Menus	Y	57.0	58.5	56.9	57.2
	N	60.2	57.0	52.5	57.5
SFA Conducts Nutrient Analysis of Menus	Y	57.4	58.0	55.6	57.1
	N	59.9	58.4	54.1	58.0
Characteristics of the School Meal Programs					
School Participates in the Fresh Fruit and Vegetable Program	Y	60.2*	n.a.	n.a.	n.a.
	N	56.9	n.a.	n.a.	n.a.
School Provides Afterschool Snacks or Suppers	Y	56.5	58.6	55.1	56.3
	N	58.9	57.8	55.4	57.8
Meal Service Characteristics					
School Receives Fully or Partially Prepared Meals from a Separate Production or Central Kitchen	Y	60.0	57.0	†	58.1
	N	57.2	58.2		57.1
SFA Uses a Foodservice Management Company	Y	58.5	56.4	53.8	57.8
	N	57.7	58.6	55.8	57.1
School Uses Offer-Versus-Serve at Lunch	Y	57.7	57.0**	†	†
	N	58.4	68.1		
School Has Policies and Procedures for Accommodating Students with Food Allergies or Special Dietary Needs	Y	57.8	58.1	54.9*	57.0*
	N	58.5	57.4	61.1	60.2
Number of HealthierUS School Challenge Smarter Lunchroom Techniques Used					
Zero (<i>reference category</i>)		51.5	57.5	50.0	55.2
1		56.4**	58.9	54.7	56.6
2 to 3		59.6***	56.7	54.7	57.7
4 to 7		62.2***	59.4	58.4*	58.8*

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Price Charged for Paid Lunches					
School Offered Free Lunch to All Students		57.7	63.7***	55.4	58.8
\$2.25 or less (<i>reference category</i>)		56.8	54.2	56.3	56.3
\$2.26 to \$2.50		59.3	57.9	57.0	59.3*
\$2.51 to \$2.75		61.3*	62.4***	54.8	57.5
More than \$2.75		57.1	59.1*	52.5	56.2
Number of Students		535	402	303	1,240
Number of Schools		102	88	86	276

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, School Food Authority Director Survey, School Nutrition Manager Survey, and Cafeteria Observation Guide, school year 2014-2015. Multivariate estimates use the subset of students who participated in the National School Lunch Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled "Y" and "N" report adjusted mean total HEI-2010 scores for NSLP participants in schools that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted means are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of NSLP participants' diets.

Difference in mean HEI-2010 scores for NSLP participants in schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, the difference in mean HEI-2010 scores between NSLP participants in schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for NSLP participants.

n.a. = Characteristic did not apply to any schools within the specific school type. Such characteristics were also not reported for models including all schools if they were only specific to one school type.

HEI = Healthy Eating Index; NSLP = National School Lunch Program; SFA = school food authority.

Table O.3. Regression Coefficients Estimates for the Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of School Foodservice Operations

	Elementary Schools	Middle Schools	High Schools	All Schools
Food Purchasing Characteristics				
SFA Uses Alliance for a Healthier Generation or Other Similar Tools for Selecting and Purchasing Healthy Foods	1.9 (1.6)	-2.1 (1.5)	0.2 (2.0)	-0.3 (1.0)
SFA Participates in a Food Purchasing Cooperative	0.7 (1.8)	-3.8* (1.8)	0.6 (2.2)	-0.5 (1.2)
SFA Is Engaged in a Pouring Rights Contract	-0.8 (1.6)	0.7 (1.4)	-1.5 (2.2)	-0.2 (0.9)
Schools in SFA Offer Brand-Name or Chain Restaurant Foods	1.6 (3.8)	-0.1 (2.6)	4.8 (2.9)	2.4 (2.0)
School Participates in Farm to School Program	1.4 (2.2)	1.8 (1.9)	-0.1 (2.7)	1.7 (1.2)
Menu Planning Characteristics				
School Uses Cycle Menus	-3.2 (1.7)	1.5 (2.0)	4.5 (3.2)	-0.3 (1.1)
SFA Conducts Nutrient Analysis of Menus	-2.5 (2.0)	-0.4 (2.5)	1.5 (3.0)	-0.9 (1.5)
Characteristics of the School Meal Programs				
School Participates in the Fresh Fruit and Vegetable Program	3.2* (1.4)	n.a. n.a.	n.a. n.a.	n.a. n.a.
School Provides Afterschool Snacks or Suppers	-2.4 (1.9)	0.8 (2.2)	-0.2 (2.2)	-1.5 (1.2)
Meal Service Characteristics				
School Receives Fully or Partially Prepared Meals from a Separate Production or Central Kitchen	2.7 (1.7)	-1.3 (1.9)	†	1.0 (1.4)
SFA Uses a Foodservice Management Company	0.8 (1.7)	-2.3 (2.7)	-2.0 (2.8)	0.7 (1.5)
School Uses Offer-Versus-Serve at Lunch	-0.7 (2.8)	-11.1** (4.2)	n.a. n.a.	†
School Has Policies and Procedures for Accommodating Students with Food Allergies or Special Dietary Needs	-0.7 (2.1)	0.7 (3.1)	-6.1* (2.8)	-3.2* (1.4)
Number of HealthierUS School Challenge Smarter Lunchroom Techniques Used				
Zero (<i>reference category</i>)	--0--	--0--	--0--	--0--
1	4.9** (1.8)	1.3 (2.4)	4.7 (3.2)	1.4 (1.6)
2 to 3	8.0*** (2.2)	-0.8 (2.3)	4.7 (3.3)	2.4 (1.6)
4 to 7	10.7*** (2.0)	1.9 (2.7)	8.4* (3.4)	3.6* (1.5)

	Elementary Schools	Middle Schools	High Schools	All Schools
Price Charged for Paid Lunches				
School Offered Free Lunch to All Students	1.0 (1.9)	9.5*** (2.4)	-0.9 (3.2)	2.5 (1.3)
\$2.25 or less (<i>reference category</i>)	--0--	--0--	--0--	--0--
\$2.26 to \$2.50	2.5 (1.9)	3.7 (2.3)	0.7 (2.6)	3.0* (1.4)
\$2.51 to \$2.75	4.5* (2.1)	8.2*** (1.7)	-1.5 (2.8)	1.2 (1.5)
More than \$2.75	0.3 (3.3)	5.0* (2.1)	-3.8 (2.8)	-0.1 (1.8)
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	1.8 (1.8)	2.4 (2.7)	7.7 (4.0)	3.1 (1.6)
Black, non-Hispanic	-2.8 (2.9)	-1.6 (3.1)	0.8 (1.9)	-0.3 (1.6)
Other	-0.9 (2.4)	5.2 (2.9)	-0.2 (2.1)	1.2 (1.6)
Student Is Female	1.6 (1.3)	-2.3 (1.4)	-0.9 (2.3)	0.3 (1.0)
Student Is Certified for Free or Reduced-Price Meals	2.1 (1.7)	-0.8 (2.0)	5.0* (2.1)	1.6 (1.0)
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
40 percent or more	2.0 (2.7)	-2.7 (2.4)	-4.3 (2.3)	0.1 (1.5)
Urbanicity				
Urban (<i>reference category</i>)	--0--	--0--	--0--	--0--
Suburban	0.3 (1.8)	1.3 (2.0)	-1.2 (2.6)	0.8 (1.2)
Rural	-1.5 (2.2)	1.6 (2.2)	-2.0 (3.0)	-0.7 (1.4)
School Size				
Fewer than 500 students (<i>reference category</i>)	--0--	--0--	--0--	--0--
500 to 999 students	5.1*** (1.3)	4.1* (2.0)	-2.7 (2.4)	3.6** (1.2)
1,000 or more students	‡	0.6 (2.3)	-3.7 (3.9)	3.6* (1.7)

	Elementary Schools	Middle Schools	High Schools	All Schools
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	2.1 (2.8)	3.3 (3.5)	-6.6 (4.8)	-0.4 (2.3)
Southeast	2.6 (2.9)	0.4 (2.2)	-8.1* (3.5)	-0.2 (1.8)
Midwest	-4.2 (2.1)	3.7 (2.6)	-1.3 (3.1)	-0.4 (1.8)
Southwest	-1.0 (2.6)	5.5* (2.6)	-3.0 (3.8)	0.0 (1.6)
Mountain Plains	3.6 (2.9)	2.1 (2.8)	-13.7*** (3.0)	-1.2 (1.8)
Western	-5.5* (2.2)	6.7* (3.3)	0.1 (3.9)	-0.2 (1.6)
Number of Students	535	402	303	1,240
Number of Schools	102	88	86	276

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, School Food Authority Director Survey, School Nutrition Manager Survey, and Cafeteria Observation Guide, school year 2014-2015. Multivariate estimates use the subset of students who participated in the National School Lunch Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for NSLP participants. Standard errors are in parentheses.
For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of NSLP participants' diets.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for NSLP participants.

‡ Category was combined with the above category due to sparseness of observations.

n.a. = Characteristic did not apply to any schools within the specific school type. Such characteristics were also not reported for models including all schools if they were only specific to one school type.

HEI = Healthy Eating Index; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SFA = school food authority.

Table O.4. Relationships between the Nutritional Quality of NSLP Participants' Diets and the School Food Environment: Regression-Adjusted Mean Total HEI-2010 Scores

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Wellness Policies and Practices					
SFA Has Nutrition Standards for School Meals that Exceed Federal Standards	Y	59.0	57.0	55.0	58.0
	N	57.1	58.6	55.5	56.9
School Conducted a Nutrition Education Activity in the Classroom or Foodservice Area	Y	58.0	57.2	57.5*	57.9
	N	57.6	59.0	53.3	56.6
School Operates a School Garden	Y	59.7	†	†	†
	N	57.8			
Competitive Foods					
School Sells Foods Other than Milk on an A la Carte Basis	Y	56.4***	58.6*	55.1*	56.6**
	N	61.5	51.7	62.8	60.6
School Sells Foods and Beverages in Vending Machine	Y	59.3	58.8	55.3	57.7
	N	57.6	57.2	55.5	57.1
School Sells Foods and/or Beverages via a School Store or Snack Bar	Y	55.8	60.0	56.3	57.1
	N	58.6	57.5	55.0	57.4
SFA Has Standards for Competitive Foods that Exceed Smart Snacks in Schools Standards	Y	57.9	57.8	58.1	57.7
	N	57.8	58.2	54.5	57.2
Meal Service Practices					
Length of Lunch Period					
Less than 30 minutes (<i>reference category</i>)		57.2	56.6	53.5	55.8
30 to 44 minutes		55.6	59.9*	56.6	57.2
45 minutes or more		58.4	56.3	55.5	58.0*
School Has Other Activities Scheduled during Lunch Period	Y	58.3	57.8	55.5	57.3
	N	57.8	58.2	55.2	57.3
School Has More than One Line or Station that Offers Reimbursable Lunches or Components of Reimbursable Lunches	Y	59.8	58.2	55.9	58.4*
	N	56.7	57.7	53.1	55.9
Number of Students		535	402	303	1,240
Number of Schools		102	88	86	276

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recall: Day 1, School Food Authority Director Survey, School Nutrition Manager Survey, Principal Survey, Vending Machine and Other Sources of Foods and Beverages Checklist, A la Carte Checklist, and Cafeteria Observation Guide, school year 2014-2015. Multivariate estimates use the subset of students who participated in the National School Lunch Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled "Y" and "N" report adjusted mean total HEI-2010 scores for NSLP participants in schools that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted means are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of NSLP participants' diets.

Difference in mean HEI-2010 scores for NSLP participants in schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, the difference in mean HEI-2010 scores between NSLP participants in schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for NSLP participants.

HEI = Healthy Eating Index; NSLP = National School Lunch Program; SFA = school food authority.

Table O.5. Regression Coefficient Estimates for the Relationships between the Nutritional Quality of NSLP Participants' Diets and the School Food Environment

	Elementary Schools	Middle Schools	High Schools	All Schools
Wellness Policies and Practices				
SFA Has Nutrition Standards for School Meals that Exceed Federal Standards	1.9 (1.8)	-1.7 (1.4)	-0.5 (1.9)	1.2 (1.2)
School Conducted a Nutrition Education Activity in the Classroom or Foodservice Area	0.3 (1.1)	-1.8 (1.3)	4.2* (1.7)	1.2 (0.9)
School Operates a School Garden	1.9 (2.4)	†	†	†
Competitive Foods				
School Sells Foods Other than Milk on an A la Carte Basis	-5.1*** (1.2)	6.9* (3.2)	-7.8* (3.9)	-4.0** (1.3)
School Sells Foods and Beverages in Vending Machine	1.7 (2.1)	1.6 (1.3)	-0.2 (3.3)	0.6 (1.4)
School Sells Foods and/or Beverages via a School Store or Snack Bar	-2.8 (1.9)	2.5 (1.7)	1.3 (2.0)	-0.3 (1.0)
SFA Has Standards for Competitive Foods that Exceed Smart Snacks in Schools Standards	0.1 (1.7)	-0.4 (2.1)	3.6 (2.3)	0.6 (1.2)
Meal Service Practices				
Length of Lunch Period				
Less than 30 minutes (<i>reference category</i>)	--0--	--0--	--0--	--0--
30 to 44 minutes	-1.5 (2.2)	3.2* (1.4)	3.1 (2.3)	1.4 (1.1)
45 minutes or more	1.2 (1.5)	-0.3 (1.7)	2.0 (3.5)	2.2* (1.1)
School Has Other Activities Scheduled during Lunch Period	0.5 (1.8)	-0.3 (1.4)	0.2 (2.3)	0.0 (1.2)
School Has More than One Line or Station that Offers Reimbursable Lunches or Components of Reimbursable Lunches	3.1 (1.7)	0.4 (2.5)	2.9 (3.5)	2.4* (1.0)
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	3.0 (1.6)	3.3 (2.4)	5.8 (4.4)	3.5* (1.6)
Black, non-Hispanic	-1.6 (2.6)	-0.6 (3.0)	1.1 (1.8)	-0.2 (1.5)
Other	-1.3 (2.5)	6.2* (2.8)	0.0 (2.0)	1.4 (1.5)
Student Is Female	1.5 (1.3)	-2.0 (1.4)	-1.1 (2.2)	0.1 (0.9)
Student Is Certified for Free or Reduced-Price Meals	2.0 (1.5)	-0.8 (2.0)	3.9* (1.9)	1.9 (1.0)

	Elementary Schools	Middle Schools	High Schools	All Schools
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (reference category)	--0--	--0--	--0--	--0--
40 percent or more	0.5 (2.0)	-4.3 (2.4)	-3.3 (2.4)	-0.5 (1.2)
Urbanicity				
Urban (reference category)	--0--	--0--	--0--	--0--
Suburban	2.2 (1.9)	-2.0 (2.0)	-1.7 (3.3)	1.2 (1.3)
Rural	-2.8 (2.3)	-3.2 (2.1)	-4.2 (3.7)	-1.6 (1.4)
School Size				
Fewer than 500 students (reference category)	--0--	--0--	--0--	--0--
500 to 999 students	3.0 (1.5)	0.5 (1.9)	-2.6 (2.8)	2.0 (1.2)
1,000 or more students	‡	-0.7 (3.1)	-2.9 (3.4)	2.9 (1.6)
FNS Region				
Mid-Atlantic (reference category)	--0--	--0--	--0--	--0--
Northeast	-6.3 (3.9)	6.2 (3.2)	-5.3 (4.6)	-3.0 (2.7)
Southeast	-0.1 (2.8)	0.7 (2.3)	-4.1 (3.2)	-0.7 (1.7)
Midwest	-2.2 (2.6)	2.9 (2.3)	-1.5 (3.1)	0.2 (1.7)
Southwest	-1.1 (2.1)	1.9 (2.4)	-2.3 (3.5)	-0.8 (1.4)
Mountain Plains	2.2 (2.6)	0.8 (3.0)	-9.0* (4.3)	0.8 (2.0)
Western	-2.0 (2.1)	2.4 (4.1)	1.0 (4.5)	-0.2 (1.9)
Number of Students	535	402	303	1,240
Number of Schools	102	88	86	276

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recall: Day 1, School Food Authority Director Survey, School Nutrition Manager Survey, Principal Survey, Vending Machine and Other Sources of Foods and Beverages Checklist, A la Carte Checklist, and Cafeteria Observation Guide, school year 2014-2015. Multivariate estimates use the subset of students who participated in the National School Lunch Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for NSLP participants. Standard errors are in parentheses. For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of NSLP participants' diets.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for NSLP participants.

‡ Category was combined with the above category due to sparseness of observations.

HEI = Healthy Eating Index; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SFA = school food authority.

Table O.6. Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of Students, Schools, and SFAs: Regression-Adjusted Mean Total HEI-2010 Scores

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Student Characteristics					
Student Race and Ethnicity					
White, non-Hispanic (<i>reference category</i>)		56.4	57.0	55.1	56.3
Hispanic		60.4*	59.4	56.9	59.3
Black, non-Hispanic		56.3	57.1	54.9	56.4
Other		56.4	61.0	54.1	57.0
Student Is Female	Y	58.6	56.7	55.6	57.5
	N	57.1	59.1	55.1	57.1
Student Is Certified for Free or Reduced-Price Meals	Y	58.2	57.8	57.3*	57.9
	N	56.7	58.5	52.9	56.1
Student Is a Picky Eater [Parent-reported]					
Yes, very (<i>reference category</i>)		56.9	54.1	49.8	55.0
Somewhat		59.2	59.1*	56.6**	58.2*
No		56.5	60.4*	59.4***	57.8
Amount Student Eats Compared to Students of the Same Age [Parent-reported]					
Larger amount (<i>reference category</i>)		56.5	59.3	56.1	56.6
Same amount		58.7	57.6	54.6	57.7
Smaller amount		57.5	55.0	55.9	57.3
Student Has Food Allergies or Special Dietary Needs	Y	59.9	55.3	59.2	59.2
	N	57.6	58.2	55.0	57.1
Student's Level of Activity Compared to Students of the Same Age [Parent-reported]					
Less active (<i>reference category</i>)		56.0	59.9	52.6	55.9
About as active		58.2	57.4	55.4	57.4
More active		58.5	57.1	56.3	57.7
Much more active		56.8	61.0	56.9	57.4
School and SFA Characteristics					
Share of Students Approved for Free or Reduced-Price Meals					
Less than 40 percent (<i>reference category</i>)		56.9	59.0	55.3	57.0
40 percent or more		58.1	57.6	55.4	57.4
Urbanicity					
Urban (<i>reference category</i>)		57.0	57.7	55.7	56.9
Suburban		59.8	58.7	55.4	58.2
Rural		55.6	57.2	55.0	56.1

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
School Size					
Fewer than 500 students (<i>reference category</i>)		55.5	56.9	54.7	55.3
500 to 999 students		59.2*	58.4	55.0	57.8*
1,000 or more students		‡	58.3	55.5	58.6*
FNS Region					
Mid-Atlantic (<i>reference category</i>)		59.3	56.4	58.6	58.3
Northeast		56.8	59.5	54.1	56.4
Southeast		58.3	57.4	52.8**	56.9
Midwest		56.0	60.2	57.1	57.6
Southwest		57.4	57.0	55.2	56.5
Mountain Plains		61.2	56.2	48.5***	57.1
Western		57.2	58.4	59.6	58.0
Number of Students		535	402	303	1,240
Number of Schools		102	88	86	276

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, Child/Youth Interview, Parent Interview, School Food Authority Director Survey, Common Core of Data (CCD) 2011-2012, 2011 U.S. Census Bureau's Small Area Income and Poverty Estimates school district file, and Food and Nutrition Service's SFA Verification Summary Report 2012-2013, school year 2014-2015. Multivariate estimates use the subset of students who participated in the National School Lunch Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled "Y" and "N" report adjusted mean total HEI-2010 scores for NSLP participants in schools that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted means are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of NSLP participants' diets.

Difference in mean HEI-2010 scores for NSLP participants in schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, the difference in mean HEI-2010 scores between NSLP participants in schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

‡ Category was combined with the above category due to sparseness of observations.

FNS = Food and Nutrition Services; HEI = Healthy Eating Index; NSLP = National School Lunch Program; SFA = school food authority.

Table O.7. Regression Coefficient Estimates for the Relationships between the Nutritional Quality of NSLP Participants' Diets and Key Characteristics of Students, Schools, and SFAs

	Elementary Schools	Middle Schools	High Schools	All Schools
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	4.0* (1.7)	2.4 (2.1)	1.8 (2.8)	3.0 (1.5)
Black, non-Hispanic	-0.1 (2.4)	0.1 (2.7)	-0.3 (1.9)	0.1 (1.6)
Other	0.0 (2.6)	4.0 (2.5)	-1.0 (1.8)	0.7 (1.5)
Student Is Female	1.6 (1.3)	-2.4 (1.5)	0.4 (1.8)	0.4 (0.9)
Student Is Certified for Free or Reduced-Price Meals	1.5 (1.6)	-0.7 (1.8)	4.4* (1.8)	1.7 (1.0)
Student Is a Picky Eater [Parent-reported]				
Yes, very (<i>reference category</i>)				
Somewhat	2.3 (2.0)	5.1* (2.5)	6.7** (2.0)	3.2* (1.4)
No	-0.5 (2.3)	6.4* (2.8)	9.6*** (2.0)	2.9 (1.7)
Amount Student Eats Compared to Students of the Same Age [Parent-reported]				
Larger amount (<i>reference category</i>)				
Same amount	2.2 (1.5)	-1.7 (1.7)	-1.5 (1.9)	1.2 (1.1)
Smaller amount	1.0 (1.8)	-4.3 (3.0)	-0.2 (3.7)	0.8 (1.3)
Student Has Food Allergies or Special Dietary Needs	2.3 (2.2)	-2.9 (3.8)	4.2 (3.9)	2.1 (1.8)
Student's Level of Activity Compared to Students of the Same Age [Parent-reported]				
Less active (<i>reference category</i>)				
About as active	2.2 (2.6)	-2.5 (1.8)	2.8 (2.3)	1.5 (1.6)
More active	2.5 (2.6)	-2.8 (1.9)	3.7 (2.8)	1.8 (1.7)
Much more active	0.8 (2.7)	1.1 (2.2)	4.2 (3.1)	1.5 (1.9)

	Elementary Schools	Middle Schools	High Schools	All Schools
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
40 percent or more	1.2 (2.1)	-1.3 (2.1)	0.1 (1.7)	0.4 (1.3)
Urbanicity				
Urban (<i>reference category</i>)	--0--	--0--	--0--	--0--
Suburban	2.8 (1.8)	1.0 (1.7)	-0.4 (3.3)	1.4 (1.3)
Rural	-1.4 (2.4)	-0.5 (1.7)	-0.7 (3.3)	-0.8 (1.5)
School Size				
Fewer than 500 students (<i>reference category</i>)	--0--	--0--	--0--	--0--
500 to 999 students	3.6* (1.5)	1.6 (1.8)	0.3 (2.9)	2.5* (1.2)
1,000 or more students	‡	1.4 (2.7)	0.8 (2.9)	3.2* (1.5)
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	-2.6 (2.7)	3.2 (3.8)	-4.4 (3.4)	-1.9 (2.4)
Southeast	-1.0 (2.7)	1.0 (2.1)	-5.8** (1.9)	-1.4 (1.6)
Midwest	-3.3 (2.9)	3.8 (2.1)	-1.4 (2.6)	-0.7 (1.9)
Southwest	-1.9 (2.2)	0.6 (2.3)	-3.4 (2.5)	-1.9 (1.5)
Mountain Plains	1.9 (2.5)	-0.2 (2.4)	-10.1*** (2.9)	-1.2 (1.7)
Western	-2.1 (2.2)	2.1 (3.2)	1.0 (2.8)	-0.3 (1.8)
Number of Students	535	402	303	1,240
Number of Schools	102	88	86	276

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, Child/Youth Interview, Parent Interview, School Food Authority Director Survey, Common Core of Data (CCD) 2011-2012, 2011 U.S. Census Bureau's Small Area Income and Poverty Estimates school district file, and Food and Nutrition Service's SFA Verification Summary Report 2012-2013, school year 2014-2015. Multivariate estimates use the subset of students who participated in the National School Lunch Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for NSLP participants. Standard errors are in parentheses.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of NSLP participants' diets.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

^aHousehold assistance included the receipt of SNAP, TANF, WIC or Medicaid benefits.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

‡ Category was combined with the above category due to sparseness of observations.

HEI = Healthy Eating Index; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SFA = school food authority.

Table O.8. Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of SBP Breakfasts: Regression-Adjusted Total Mean HEI-2010 Scores

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Overall Nutritional Quality of Prepared SBP Breakfasts					
Total HEI-2010 Score of Average Breakfast Prepared					
Lowest Quartile—55.2 to 68.5 points (<i>reference category</i>)		57.8	60.4	56.3	57.0
Second Quartile—68.6 to 71.6 points		62.0	53.8*	59.9	59.7
Third Quartile—71.7 to 74.9 points		58.3	56.6	56.1	58.5
Highest Quartile—75.0 to 87.4 points		59.4	57.4	52.6	58.6
Compliance of Daily and Weekly Breakfast Menus with SBP Nutrition Standards					
Met Daily Quantity Requirement for Grains	Y	60.7	55.3***	54.6	58.3
	N	57.5	63.0	57.8	58.7
Met Requirement that at Least Half of Weekly Grains Are Whole Grain-Rich	Y	59.8	57.9**	†	58.7**
	N	56.9	42.9		51.6
Met Minimum Calorie Level	Y	†	57.2	57.7**	59.3***
	N		53.2	50.1	44.5
Met Maximum Calorie Level	Y	59.7	60.2*	57.7	58.4
	N	59.8	50.8	52.3	58.6
Met Target 1 Sodium Limit	Y	59.8	54.5**	52.9*	58.1
	N	59.4	64.8	62.1	59.4
Types of Foods Offered in Breakfast Menus					
All Daily Menus Offered Cold Cereal	Y	60.9	56.9	56.8	59.3
	N	58.3	58.5	55.2	57.2
More than Half of Daily Menus Offered Breakfast Pastries or Muffins	Y	60.0	61.1**	56.6	59.7
	N	59.6	53.7	55.4	57.7
At Least One Daily Menu Offered Pizza or Pizza Products	Y	59.2	57.9	58.3	57.8
	N	60.0	56.6	54.6	58.8
No Daily Menus Offered French Fries or Similar Potato Products	Y	60.8	57.3	55.6	58.5
	N	58.9	57.1	56.5	58.3
Number of Students		225	140	135	500
Number of Schools		78	63	54	195

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, and Menu Survey, school year 2014-2015. Multivariate estimates use the subset of students who participated in the School Breakfast Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled “Y” and “N” report adjusted mean total HEI-2010 scores for SBP participants in schools that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted means are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of SBP participants' diets.

Difference in mean HEI-2010 scores for SBP participants in schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, the difference in mean HEI-2010 scores between SBP participants in schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for SBP participants.

HEI = Healthy Eating Index; SBP = School Breakfast Program; SFA = school food authority.

Table O.9. Regression Coefficients Estimates for the Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of SBP Breakfasts

	Elementary Schools	Middle Schools	High Schools	All Schools
Overall Nutritional Quality of Prepared SBP Breakfasts				
Total HEI-2010 Score of Average Breakfast Prepared				
Lower Quartile (<i>reference category</i>)	--0--	--0--	--0--	--0--
Second Quartile	4.2 (3.7)	-6.6* (2.8)	3.7 (3.2)	2.7 (2.3)
Third Quartile	0.5 (3.6)	-3.8 (2.7)	-0.2 (1.8)	1.5 (2.2)
Upper Quartile	1.7 (3.0)	-3.0 (4.4)	-3.7 (3.1)	1.7 (2.1)
Compliance of Daily and Weekly Breakfast Menus with SBP Nutrition Standards				
Met Daily Quantity Requirement for Grains	3.3 (3.2)	-7.6*** (1.9)	-3.2 (2.3)	-0.5 (1.8)
Met Requirement that at Least Half of Weekly Grains Are Whole Grain-Rich	3.0 (3.7)	15.0** (5.5)	†	7.1** (2.3)
Met Minimum Calorie Level	†	4.0 (4.6)	7.5** (2.5)	14.8*** (3.3)
Met Maximum Calorie Level	-0.2 (2.9)	9.4* (3.6)	5.4 (3.4)	-0.2 (2.5)
Met Target 1 Sodium Limit	0.4 (3.9)	-10.4** (3.6)	-9.2* (4.0)	-1.2 (2.7)
Types of Foods Offered in Breakfast Menus				
All Daily Menus Offered Cold Cereal	2.6 (2.4)	-1.6 (2.7)	1.6 (1.8)	2.1 (1.5)
More than Half of Daily Menus Offered Breakfast Pastries or Muffins	0.4 (2.2)	7.4** (2.8)	1.2 (3.7)	2.0 (1.5)
At Least One Daily Menu Offered Pizza or Pizza Products	-0.8 (2.9)	1.3 (1.8)	3.8 (2.3)	-1.0 (1.7)
No Daily Menus Offered French Fries or Similar Potato Products	1.9 (2.3)	0.2 (3.2)	-0.9 (2.7)	0.2 (1.7)
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	4.0 (3.6)	4.9 (2.8)	7.7 (7.6)	4.2 (3.2)
Black, non-Hispanic	3.3 (3.2)	-4.3 (2.9)	-1.1 (3.1)	1.1 (2.3)
Other	-4.7 (3.7)	2.2 (4.1)	-1.2 (3.1)	-2.1 (2.6)

	Elementary Schools	Middle Schools	High Schools	All Schools
Student Is Female	0.4 (2.4)	-6.8** (2.2)	5.2* (2.1)	0.0 (1.4)
Student Is Certified for Free or Reduced-Price Meals	-0.2 (2.6)	-4.4 (3.6)	-1.1 (2.4)	0.3 (1.6)
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
40 percent or more	2.8 (2.6)	-1.6 (2.5)	-2.4 (2.0)	1.0 (1.8)
Urbanicity				
Urban (<i>reference category</i>)	--0--	--0--	--0--	--0--
Suburban	4.7* (2.3)	7.9*** (2.2)	2.2 (4.1)	4.5* (2.0)
Rural	5.3 (3.3)	-4.9 (3.2)	2.0 (5.2)	3.2 (2.4)
School Size				
Fewer than 500 students (<i>reference category</i>)	--0--	--0--	--0--	--0--
500 to 999 students	9.2*** (2.6)	1.3 (2.2)	-3.9 (3.7)	6.3*** (1.7)
1,000 or more students	‡	-2.0 (3.1)	-1.1 (3.6)	6.9* (2.9)
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	-5.2 (6.2)	-12.0* (6.0)	-9.5 (6.9)	-2.6 (4.7)
Southeast	1.6 (4.0)	-5.9 (3.8)	1.0 (5.5)	1.7 (2.4)
Midwest	1.2 (4.1)	-0.6 (3.8)	1.5 (5.6)	2.3 (2.9)
Southwest	1.7 (3.0)	-0.6 (3.3)	-4.9 (5.7)	-1.1 (2.0)
Mountain Plains	5.6 (4.0)	-10.0 (5.6)	-1.0 (5.0)	1.3 (2.8)
Western	0.9 (3.7)	-4.3 (3.1)	2.7 (7.1)	-0.5 (2.6)
Number of Students	225	140	135	500
Number of Schools	78	63	54	195

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, and Menu Survey, school year 2014-2015. Multivariate estimates use the subset of students who participated in the School Breakfast Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for SBP participants. Standard errors are in parentheses.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of SBP participants' diets.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for SBP participants.

‡ Category was combined with the above category due to sparseness of observations.

HEI = Healthy Eating Index; FNS = Food and Nutrition Service; SBP = School Breakfast Program; SFA = school food authority.

Table O.10. Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of School Foodservice Operations: Regression-Adjusted Total Mean HEI-2010 Scores

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Food Purchasing Characteristics					
SFA Uses Alliance for a Healthier Generation or Other Similar Tools for Selecting and Purchasing Healthy Foods	Y	61.0	56.2	57.0	60.0
	N	58.8	58.3	55.6	57.3
SFA Participates in a Food Purchasing Cooperative	Y	59.3	57.4	57.6	59.3
	N	60.2	56.8	54.9	57.5
School Participates in Farm to School Program	Y	54.9	59.3	52.6*	57.5
	N	61.3	56.8	57.3	58.7
Menu Planning Characteristics					
School Uses Cycle Menus	Y	59.7	60.3	58.4**	58.6
	N	59.6	52.5	51.5	57.9
SFA Conducts Nutrient Analysis of Menus	Y	60.4	54.8	56.4	58.9
	N	56.2	65.1	54.1	56.0
Characteristics of the School Meal Programs					
School Offers Grab-and-Go Option at Breakfast	Y	†	49.9	52.2*	55.4
	N		58.1	57.3	58.7
Students Have Option of Eating Breakfast in the Classroom	Y	62.8*	55.6	†	60.9*
	N	56.5	57.4		57.0
School Participates in the Fresh Fruit and Vegetable Program	Y	61.4	n.a.	n.a.	n.a.
	N	59.0	n.a.	n.a.	n.a.
Meal Service Characteristics					
School Receives Fully or Partially Prepared Meals from a Separate Production or Central Kitchen	Y	56.8	48.2*	†	56.9
	N	61.0	58.0		58.8
SFA Uses a Foodservice Management Company	Y	59.5	56.4	54.9	58.8
	N	59.8	57.3	56.4	58.3
School Uses Offer-Versus-Serve at Breakfast	Y	60.5	55.8	55.8	58.7
	N	57.0	65.1	57.0	57.2
School Has Policies and Procedures for Accommodating Students with Food Allergies or Special Dietary Needs	Y	59.2	57.9	55.0	57.7
	N	67.1	52.7	65.0	65.7
Price Charged for Paid Breakfast					
School Offered Free Breakfast to All Students		59.1	57.1	56.8	58.0
Less than \$1.25 (<i>reference category</i>)		65.4	54.7	61.5	61.7
\$1.25 to \$1.49		54.6*	57.1	55.9	56.5
\$1.50 to \$1.99		63.5	55.3	53.6*	59.5
\$2.00 or more		64.5	58.3	49.8*	54.2*
Number of Students		225	140	135	500
Number of Schools		78	63	54	195

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, School Nutrition Manager Survey, School Food Authority Director Survey, and Cafeteria Observation Guide, school year 2014-2015. Multivariate estimates use the subset of students who participated in the School Breakfast Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled “Y” and “N” report adjusted mean total HEI-2010 scores for SBP participants in schools that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted means are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of SBP participants’ diets.

Difference in mean HEI-2010 scores for SBP participants in schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, the difference in mean HEI-2010 scores between SBP participants in schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for SBP participants.

HEI = Healthy Eating Index; SBP = School Breakfast Program; SFA = school food authority.

Table O.11. Regression Coefficients Estimates for the Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of School Foodservice Operations

	Elementary Schools	Middle Schools	High Schools	All Schools
Food Purchasing Characteristics				
SFA Uses Alliance for a Healthier Generation or Other Similar Tools for Selecting and Purchasing Healthy Foods	2.2 (2.6)	-2.1 (3.6)	1.4 (1.2)	2.7 (2.1)
SFA Participates in a Food Purchasing Cooperative	-0.9 (2.5)	0.6 (3.2)	2.7 (2.5)	1.7 (2.1)
School Participates in Farm to School Program	-6.4 (3.5)	2.5 (4.4)	-4.7* (1.8)	-1.2 (1.9)
Menu Planning Characteristics				
School Uses Cycle Menus	0.1 (3.4)	7.9 (5.3)	7.0** (2.4)	0.7 (2.5)
SFA Conducts Nutrient Analysis of Menus	4.2 (3.2)	-10.3 (5.2)	2.3 (3.1)	2.9 (2.7)
Characteristics of the School Meal Programs				
School Offers Grab-and-Go Option at Breakfast	† (5.3)	-8.2 (5.3)	-5.2* (2.0)	-3.4 (3.1)
Students Have Option of Eating Breakfast in the Classroom	6.2* (2.9)	-1.8 (4.8)	†	3.9* (1.9)
School Participates in the Fresh Fruit and Vegetable Program	2.4 (2.3)	n.a. n.a.	n.a. n.a.	n.a. n.a.
Meal Service Characteristics				
School Receives Fully or Partially Prepared Meals from a Separate Production or Central Kitchen	-4.2 (2.6)	-9.8* (4.4)	†	-1.9 (2.0)
SFA Uses a Foodservice Management Company	-0.2 (2.5)	-1.0 (4.1)	-1.5 (2.2)	0.5 (2.2)
School Uses Offer-Versus-Serve at Breakfast	3.5 (3.4)	-9.3 (5.2)	-1.2 (4.2)	1.5 (1.9)
School Has Policies and Procedures for Accommodating Students with Food Allergies or Special Dietary Needs	-7.9 (11.9)	5.2 (6.8)	-10.0 (5.1)	-8.0 (5.6)
Price Charged for Paid Breakfast				
School Offered Free Breakfast to All Students	-6.3 (3.7)	2.4 (6.4)	-4.7 (3.8)	-3.6 (2.6)
Less than \$1.25 (<i>reference category</i>)	--0--	--0--	--0--	--0--
\$1.25 to \$1.49	-10.8* (5.3)	2.4 (5.1)	-5.6 (3.9)	-5.2 (3.6)
\$1.50 to \$1.99	-1.9 (4.6)	0.7 (6.9)	-7.9* (3.3)	-2.2 (3.2)
\$2.00 or more	-0.9 (6.7)	3.6 (5.9)	-11.7* (5.3)	-7.5* (3.3)

	Elementary Schools	Middle Schools	High Schools	All Schools
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	6.1 (3.9)	3.9 (4.0)	10.6 (7.0)	5.7 (3.4)
Black, non-Hispanic	6.5 (3.5)	-7.3 (4.3)	-2.8 (3.6)	0.6 (2.2)
Other	-3.6 (3.6)	-5.6 (5.1)	-1.7 (2.4)	-2.2 (2.6)
Student Is Female	-0.1 (2.5)	-8.0** (2.4)	6.9** (2.4)	0.1 (1.5)
Student Is Certified for Free or Reduced-Price Meals	1.5 (2.4)	0.2 (4.6)	-4.6 (2.9)	0.1 (1.7)
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
40 percent or more	-1.8 (2.9)	-8.5 (5.0)	-8.3*** (1.8)	-2.4 (2.3)
Urbanicity				
Urban (<i>reference category</i>)	--0--	--0--	--0--	--0--
Suburban	7.2** (2.4)	2.6 (4.4)	10.3 (5.7)	6.8** (2.1)
Rural	7.2* (3.3)	-6.6 (3.9)	9.2 (5.2)	3.4 (2.5)
School Size				
Fewer than 500 students (<i>reference category</i>)	--0--	--0--	--0--	--0--
500 to 999 students	8.6*** (2.1)	-3.3 (3.3)	-5.9* (2.6)	5.9** (2.0)
1,000 or more students	‡	-3.6 (4.9)	-2.7 (2.8)	5.9 (3.6)
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	-5.3 (5.5)	-11.7 (10.7)	-9.9 (5.1)	-5.0 (4.1)
Southeast	-0.8 (4.4)	-2.0 (7.3)	0.9 (5.5)	0.1 (2.9)
Midwest	-1.8 (4.5)	5.1 (6.0)	-1.0 (5.0)	0.4 (3.8)
Southwest	0.7 (4.4)	3.6 (3.8)	3.3 (4.3)	0.0 (2.8)
Mountain Plains	3.2 (3.7)	-14.6 (11.6)	4.2 (4.6)	0.3 (3.0)

	Elementary Schools	Middle Schools	High Schools	All Schools
Western	-0.4 (4.6)	0.3 (6.8)	7.0 (8.5)	-0.3 (3.1)
Number of Students	225	140	135	500
Number of Schools	78	63	54	195

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, School Food Authority Director Survey, School Nutrition Manager Survey, and Cafeteria Observation Guide, school year 2014-2015. Multivariate estimates use the subset of students who participated in the School Breakfast Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for SBP participants. Standard errors are in parentheses. For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of SBP participants' diets.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for SBP participants.

‡ Category was combined with the above category due to sparseness of observations.

HEI = Healthy Eating Index; FNS = Food and Nutrition Service; SBP = School Breakfast Program; SFA = school food authority.

Table O.12. Relationships between the Nutritional Quality of SBP Participants' Diets and the School Food Environment: Regression-Adjusted Mean Total HEI-2010 Scores

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Wellness Policies and Practices					
SFA Has Nutrition Standards for School Meals that Exceed Federal Standards	Y	62.2*	58.4	58.6	60.9*
	N	57.8	56.5	55.1	56.9
School Conducted a Nutrition Education Activity in the Classroom or Foodservice Area	Y	60.9	57.1	55.6	59.5
	N	57.8	57.2	56.7	56.8
Competitive Foods					
School Sells Foods Other than Milk on an A la Carte Basis	Y	57.0***	57.8	55.3**	57.2**
	N	65.4	51.2	70.2	62.7
School Sells Foods and Beverages in Vending Machine	Y	59.2	56.1	55.2*	57.1
	N	59.8	58.3	62.0	59.2
School Sells Foods and/or Beverages via a School Store or Snack Bar	Y	64.2	57.3	56.7	60.3
	N	58.8	57.1	55.7	57.9
SFA Has Standards for Competitive Foods that Exceed Smart Snacks in Schools Standards	Y	59.4	58.3	55.6	58.0
	N	59.8	56.7	56.3	58.6
Meal Service Practices					
Length of Breakfast Period					
Less than 25 minutes (<i>reference category</i>)		60.6	57.3	55.3	58.4
25 to 39 minutes		59.3	55.5	55.9	56.7
40 minutes or more		55.6	55.6	57.7	55.3
Last Bus Arrives Before or at Same Time as Breakfast	Y	60.6	44.6*	†	56.9
	N	59.5	58.3		58.8
Number of Students		225	140	135	500
Number of Schools		78	63	54	195

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recall: Day 1, School Food Authority Director Survey, School Nutrition Manager Survey, Principal Survey, Vending Machine and Other Sources of Foods and Beverages Checklist, A la Carte Checklist, and Cafeteria Observation Guide, school year 2014-2015. Multivariate estimates use the subset of students who participated in the School Breakfast Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled "Y" and "N" report adjusted mean total HEI-2010 scores for SBP participants in schools that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted means are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of SBP participants' diets.

Difference in mean HEI-2010 scores for SBP participants in schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, the difference in mean HEI-2010 scores between SBP participants in schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for SBP participants.

HEI = Healthy Eating Index; SBP = School Breakfast Program; SFA = school food authority.

Table O.13. Regression Coefficient Estimates for the Relationships between the Nutritional Quality of SBP Participants' Diets and the School Food Environment

	Elementary Schools	Middle Schools	High Schools	All Schools
Wellness Policies and Practices				
SFA Has Nutrition Standards for School Meals that Exceed Federal Standards	4.4* (1.9)	1.9 (2.3)	3.6 (2.6)	4.1* (1.6)
School Conducted a Nutrition Education Activity in the Classroom or Foodservice Area	3.1 (1.8)	-0.1 (2.3)	-1.0 (2.8)	2.7 (1.7)
Competitive Foods				
School Sells Foods Other than Milk on an A la Carte Basis	-8.4*** (2.2)	6.6 (4.4)	-14.9** (5.2)	-5.5** (2.0)
School Sells Foods and Beverages in Vending Machine	-0.6 (3.1)	-2.3 (2.1)	-6.7* (2.8)	-2.1 (2.4)
School Sells Foods and/or Beverages via a School Store or Snack Bar	5.4 (3.5)	0.3 (2.4)	1.0 (2.4)	2.4 (1.9)
SFA Has Standards for Competitive Foods that Exceed Smart Snacks in Schools Standards	-0.4 (2.5)	1.6 (3.8)	-0.7 (3.6)	-0.6 (1.5)
Meal Service Practices				
Length of Breakfast Period				
Less than 25 minutes (<i>reference category</i>)	--0--	--0--	--0--	--0--
25 to 39 minutes	-1.3 (1.9)	-1.9 (3.0)	0.6 (2.8)	-1.7 (1.6)
40 minutes or more	-5.0 (3.3)	-1.7 (3.7)	2.4 (4.2)	-3.1 (1.8)
Last Bus Arrives Before or at Same Time as Breakfast	1.2 (3.1)	-13.7* (6.3)	†	-1.8 (1.9)
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	3.3 (3.7)	3.5 (2.8)	7.9 (7.6)	4.6 (3.1)
Black, non-Hispanic	-0.1 (3.4)	-5.9 (3.2)	-0.7 (3.0)	0.0 (2.2)
Other	-6.0 (3.4)	-3.4 (3.6)	-1.7 (2.8)	-2.8 (2.6)
Student Is Female	0.4 (2.4)	-7.7*** (2.1)	5.8** (2.0)	0.1 (1.4)
Student Is Certified for Free or Reduced-Price Meals	-0.9 (2.3)	-0.5 (3.9)	-1.6 (2.6)	0.5 (1.7)

	Elementary Schools	Middle Schools	High Schools	All Schools
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (reference category)	--0--	--0--	--0--	--0--
40 percent or more	1.0 (2.4)	-3.2 (2.5)	-5.9*** (1.7)	-1.5 (1.9)
Urbanicity				
Urban (reference category)	--0--	--0--	--0--	--0--
Suburban	6.9** (2.2)	-0.2 (3.1)	11.6* (5.4)	6.3** (2.0)
Rural	6.6* (3.2)	-7.8* (3.3)	11.4** (4.3)	3.2 (2.3)
School Size				
Fewer than 500 students (reference category)	--0--	--0--	--0--	--0--
500 to 999 students	8.7*** (2.1)	-1.3 (2.4)	-8.7** (2.8)	5.1** (1.6)
1,000 or more students	‡	4.2 (3.7)	-1.0 (2.7)	8.5* (3.4)
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	-15.1** (5.5)	-1.5 (8.7)	-10.4* (4.7)	-12.0* (4.9)
Southeast	-3.7 (3.7)	0.9 (6.3)	1.6 (4.9)	-2.1 (2.4)
Midwest	-6.7* (3.0)	10.0 (5.6)	-2.3 (4.7)	-2.9 (3.2)
Southwest	-2.6 (2.7)	2.9 (5.7)	6.3 (5.0)	-2.1 (2.2)
Mountain Plains	-2.8 (3.4)	-6.3 (7.5)	-2.7 (3.8)	-1.0 (2.9)
Western	-4.5 (2.4)	4.8 (5.4)	-2.9 (3.3)	-3.2 (2.4)
Number of Students	225	140	135	500
Number of Schools	78	63	54	195

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, School Food Authority Director Survey, School Nutrition Manager Survey, Principal Survey, Vending Machine and Other Sources of Foods and Beverages Checklist, A la Carte Checklist, and Cafeteria Observation Guide, school year 2014-2015. Multivariate estimates use the subset of students who participated in the School Breakfast Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for SBP participants. Standard errors are in parentheses.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of SBP participants' diets.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

† Variable was excluded from the model due to low within-sample variation or high correlation with another variable that better explained variation in total HEI-2010 scores for SBP participants.

‡ Category was combined with the above category due to sparseness of observations.

HEI = Healthy Eating Index; FNS = Food and Nutrition Service; SBP = School Breakfast Program; SFA = school food authority.

Table O.14. Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of Students, Schools, and SFAs: Regression-Adjusted Mean Total HEI-2010 Scores

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Student Characteristics					
Student Race and Ethnicity					
White, non-Hispanic (<i>reference category</i>)		57.2	57.0	56.1	56.6
Hispanic		62.2	60.2	58.8	61.4
Black, non-Hispanic		60.6	53.0	54.0	58.1
Other		51.8	57.1	56.1	53.8
Student Is Female	Y	60.4	53.0***	61.1***	58.8
	N	59.1	60.2	52.0	58.1
Student Is Certified for Free or Reduced-Price Meals	Y	59.6	56.7	55.3	58.4
	N	60.6	60.5	60.0	58.9
Student Is a Picky Eater [Parent-reported]					
Yes, very (<i>reference category</i>)		59.7	57.5	52.7	57.2
Somewhat		60.5	58.3	58.8*	59.4
No		58.7	54.9	56.9	58.1
Amount Student Eats Compared to Students of the Same Age [Parent-reported]					
Larger amount (<i>reference category</i>)		58.2	58.2	56.7	58.3
Same amount		60.6	56.9	55.7	58.4
Smaller amount		61.4	52.7	54.2	59.2
Student Has Food Allergies or Special Dietary Nee	Y	61.2	52.3	54.9	58.3
	N	59.6	57.3	56.2	58.4
Student's Level of Activity Compared to Students of the Same Age [Parent-reported]					
Less active (<i>reference category</i>)		57.5	61.4	50.7	56.4
About as active		58.6	52.1*	56.3*	57.3
More active		61.2	59.4	59.5*	59.7
Much more active		60.7	65.6	58.2**	60.4
School and SFA Characteristics					
Share of Students Approved for Free or Reduced-Price Meals					
Less than 40 percent (<i>reference category</i>)		57.4	58.4	58.6	58.1
40 percent or more		60.1	56.8	54.7	58.5
Urbanicity					
Urban (<i>reference category</i>)		56.7	55.3	51.8	55.1
Suburban		61.3	62.8***	58.4	61.2**
Rural		61.6	49.9	57.1	58.8

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
School Size					
Fewer than 500 students (<i>reference category</i>)		53.7	59.1	60.2	54.0
500 to 999 students		63.8***	55.9	53.5	60.9***
1,000 or more students		‡	56.9	55.1	61.1
FNS Region					
Mid-Atlantic (<i>reference category</i>)		59.3	54.4	61.4	58.1
Northeast		54.5	50.6	47.1**	52.3
Southeast		58.7	57.7	55.8	58.7
Midwest		58.7	65.7***	59.3	60.6
Southwest		60.5	56.5	56.5	57.7
Mountain Plains		63.9	47.3	55.6	60.7
Western		61.1	55.9	57.2	58.6
Number of Students		225	140	135	500
Number of Schools		78	63	54	195

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, Child/Youth Interview, Parent Interview, School Food Authority Director Survey, Common Core of Data (CCD) 2011-2012, 2011 U.S. Census Bureau's Small Area Income and Poverty Estimates school district file, and Food and Nutrition Service's SFA Verification Summary Report 2012-2013, school year 2014-2015. Multivariate estimates use the subset of students who participated in the School Breakfast Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled "Y" and "N" report adjusted mean total HEI-2010 scores for SBP participants in schools that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted means are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of SBP participants' diets.

Difference in mean HEI-2010 scores for SBP participants in schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, the difference in mean HEI-2010 scores between SBP participants in schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

‡ Category was combined with the above category due to sparseness of observations.

FNS = Food and Nutrition Services; HEI = Healthy Eating Index; SBP = School Breakfast Program; SFA = school food authority.

Table O.15. Regression Coefficient Estimates for the Relationships between the Nutritional Quality of SBP Participants' Diets and Key Characteristics of Students, Schools, and SFAs

	Elementary Schools	Middle Schools	High Schools	All Schools
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Hispanic	5.0 (3.2)	3.2 (2.7)	2.6 (4.9)	4.8 (3.0)
Black, non-Hispanic	3.4 (3.2)	-4.0 (3.0)	-2.1 (2.9)	1.5 (2.5)
Other	-5.4 (3.6)	0.1 (3.8)	-0.1 (2.9)	-2.8 (2.8)
Student Is Female	1.2 (2.4)	-7.2*** (1.7)	9.1*** (2.4)	0.7 (1.5)
Student Is Certified for Free or Reduced-Price Meals	-1.0 (3.0)	-3.8 (3.4)	-4.7 (2.9)	-0.5 (1.9)
Student Is a Picky Eater [Parent-reported]				
Yes, very (<i>reference category</i>)				
Somewhat	0.8 (3.4)	0.7 (2.9)	6.1* (2.7)	2.2 (2.4)
No	-1.0 (3.6)	-2.6 (3.1)	4.2 (3.0)	0.9 (2.3)
Amount Student Eats Compared to Students of the Same Age [Parent-reported]				
Larger amount (<i>reference category</i>)				
Same amount	2.4 (2.0)	-1.3 (2.5)	-1.0 (2.2)	0.0 (1.6)
Smaller amount	3.2 (3.3)	-5.5 (5.1)	-2.5 (6.8)	0.9 (2.4)
Student Has Food Allergies or Special Dietary Needs	1.7 (3.0)	-5.0 (4.6)	-1.3 (5.1)	-0.1 (2.7)
Student's Level of Activity Compared to Students of the Same Age [Parent-reported]				
Less active (<i>reference category</i>)				
About as active	1.1 (2.7)	-9.3* (4.2)	5.6* (2.7)	0.9 (2.1)
More active	3.7 (3.5)	-2.0 (3.7)	8.8* (4.4)	3.3 (2.4)
Much more active	3.2 (3.9)	4.2 (4.8)	7.5** (2.8)	4.0 (2.8)

	Elementary Schools	Middle Schools	High Schools	All Schools
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
40 percent or more	2.7 (2.8)	-1.6 (2.2)	-4.0 (2.4)	0.4 (2.1)
Urbanicity				
Urban (<i>reference category</i>)	--0--	--0--	--0--	--0--
Suburban	4.6 (2.6)	7.6*** (2.0)	6.6 (3.4)	6.1** (2.2)
Rural	4.9 (2.9)	-5.4 (3.3)	5.3 (4.2)	3.7 (2.8)
School Size				
Fewer than 500 students (<i>reference category</i>)	--0--	--0--	--0--	--0--
500 to 999 students	10.0*** (2.4)	-3.2 (2.2)	-6.7 (3.6)	6.9*** (1.9)
1,000 or more students	‡	-2.2 (3.1)	-5.1 (3.5)	7.0 (3.6)
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	-4.8 (4.5)	-3.8 (7.9)	-14.2** (5.4)	-5.8 (4.1)
Southeast	-0.6 (3.2)	3.3 (4.2)	-5.5 (3.5)	0.6 (2.4)
Midwest	-0.5 (4.8)	11.3*** (3.3)	-2.1 (3.5)	2.5 (3.8)
Southwest	1.2 (3.1)	2.1 (3.4)	-4.9 (4.1)	-0.4 (2.1)
Mountain Plains	4.6 (3.4)	-7.1 (4.8)	-5.8 (4.7)	2.6 (2.7)
Western	1.8 (3.4)	1.5 (3.3)	-4.1 (4.6)	0.6 (2.5)
Number of Students	225	140	135	500
Number of Schools	78	63	54	195

Source: School Nutrition and Meal Cost Study, Reimbursable Meal Sales Form, 24-Hour Dietary Recalls: Day 1, Child/Youth Interview, Parent Interview, School Food Authority Director Survey, Common Core of Data (CCD) 2011-2012, 2011 U.S. Census Bureau's Small Area Income and Poverty Estimates school district file, and Food and Nutrition Service's SFA Verification Summary Report 2012-2013, school year 2014-2015. Multivariate estimates use the subset of students who participated in the School Breakfast Program on the target day among a weighted nationally representative sample of students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for SBP participants. Standard errors are in parentheses.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of SBP participants' diets.

^aHousehold assistance included the receipt of SNAP, TANF, WIC or Medicaid benefits.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

‡ Category was combined with the above category due to sparseness of observations.

FNS = Food and Nutrition Services; HEI = Healthy Eating Index; SBP = School Breakfast Program; SFA = school food authority.

Table O.16. Relationships between the Nutritional Quality of Students' Diets and Nutrition Outreach and Wellness Policies and Practices: Regression-Adjusted Mean Total HEI-2010 Scores

	Yes/ No	Elementary Schools	Middle Schools	High Schools	All Schools
Nutrition Outreach					
School Has a Nutrition Advisory Council	Y	56.5	54.9	54.8**	55.5
	N	57.3	57.1	51.5	55.6
School Provides Information on School Meal Programs to Families and/or the Public	Y	56.9	56.0	54.4***	55.8
	N	57.0	56.9	48.2	53.8
School Foodservice Staff Conducted a Nutrition Education Activity in the Classroom or Foodservice Area	Y	57.2	56.1	52.8	56.1
	N	56.6	56.2	53.8	54.7
Wellness Policies and Practices					
SFA Has Plan for Informing Public about Wellness Policy Content and Implementation	Y	56.5	56.1	52.3	55.2
	N	57.5	56.1	54.7	56.0
School Has Wellness Policy in addition to District Wellness Policy	Y	57.2	56.8	54.3	56.4
	N	56.9	55.9	53.1	55.3
SFA Wellness Policy Includes Nutrition Promotion	Y	57.6	56.2	54.1*	55.8
	N	55.0	55.8	49.9	54.6
Number of Students		733	694	680	2,107
Number of Schools		103	90	91	284

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, Principal Survey, School Nutrition Manager Survey, and School Food Authority Director Survey, school year 2014-2015. Estimates are weighted to be nationally representative of all students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression-adjusted means that control for demographic characteristics of each student and institutional characteristics of their school and SFA. Variables with rows labeled "Y" and "N" report adjusted mean total HEI-2010 scores for students in schools that do and do not meet the variable criteria, respectively. Otherwise, regression-adjusted means are reported for each category within a variable. See Appendix C for more details on characteristic descriptions and selection methods.

For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of students' diets.

Difference in mean HEI-2010 scores for students in schools with and without a dichotomous characteristic is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. For variables containing multiple categories, the difference in mean HEI-2010 scores between students in schools in the corresponding category and schools in the reference category is statistically different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level. HEI = Healthy Eating Index; SFA = school food authority.

Table O.17. Regression Coefficients Estimates for the Relationships between the Nutritional Quality of Students' Diets and Nutrition Outreach and Wellness Policies and Practices

	Elementary Schools	Middle Schools	High Schools	All Schools
Nutrition Outreach				
School Has a Nutrition Advisory Council	-0.8 (1.4)	-2.2 (1.6)	3.3** (1.2)	-0.1 (0.9)
School Provides Information on School Meal Programs to Families and/or the Public	-0.1 (2.7)	-0.8 (2.2)	6.2*** (1.5)	2.0 (1.6)
School Foodservice Staff Conducted a Nutrition Education Activity in the Classroom or Foodservice Area	0.5 (1.2)	-0.1 (1.3)	-1.0 (1.2)	1.4 (0.7)
Wellness Policies and Practices				
SFA Has Plan for Informing Public about Wellness Policy Content and Implementation	-1.0 (2.1)	0.0 (1.7)	-2.4 (1.4)	-0.9 (0.9)
School Has Wellness Policy in addition to District Wellness Policy	0.4 (1.8)	0.9 (1.7)	1.2 (1.3)	1.1 (0.9)
SFA Wellness Policy Includes Nutrition Promotion	2.7 (2.0)	0.4 (1.7)	4.2* (1.6)	1.2 (1.0)
Student Characteristics				
Student Race and Ethnicity				
White, non-Hispanic (reference category)	--0--	--0--	--0--	--0--
Hispanic	1.9 (1.6)	4.4* (1.9)	1.8 (2.4)	2.9* (1.3)
Black, non-Hispanic	-1.2 (2.4)	0.5 (1.9)	-2.2 (1.7)	-0.8 (1.2)
Other	0.7 (1.7)	5.9** (2.0)	-1.1 (2.2)	1.6 (1.1)
Student Is Female	1.7 (1.3)	-2.8 (1.5)	-0.4 (1.3)	0.1 (0.7)
Student Is Certified for Free or Reduced-Price Meals	3.4* (1.4)	0.4 (1.6)	3.4* (1.6)	2.3* (0.9)
School and SFA Characteristics				
Share of Students Approved for Free or Reduced-Price Meals				
Less than 40 percent (<i>reference category</i>)	--0--	--0--	--0--	--0--
40 percent or more	-2.5 (1.7)	-5.0** (1.5)	-0.6 (1.3)	-2.1* (0.9)
Urbanicity				
Urban (<i>reference category</i>)	--0--	--0--	--0--	--0--
Suburban	2.6 (1.7)	0.8 (1.6)	-0.3 (1.7)	0.1 (0.9)
Rural	-2.4 (2.3)	2.6 (1.5)	3.8* (1.8)	-0.8 (1.3)

	Elementary Schools	Middle Schools	High Schools	All Schools
School Size				
Fewer than 500 students (<i>reference category</i>)	--0--	--0--	--0--	--0--
500 to 999 students	3.6* (1.6)	1.8 (1.6)	-3.0 (2.4)	2.2* (1.1)
1,000 or more students	‡ ‡	-4.0 (2.2)	2.8 (2.6)	2.8 (1.6)
FNS Region				
Mid-Atlantic (<i>reference category</i>)	--0--	--0--	--0--	--0--
Northeast	-3.4 (2.3)	10.7** (3.5)	3.2 (3.1)	-1.7 (1.7)
Southeast	0.2 (2.0)	-0.5 (1.8)	-2.1 (2.0)	-1.1 (1.3)
Midwest	-0.8 (2.3)	1.4 (1.6)	3.0 (1.8)	0.6 (1.3)
Southwest	2.4 (2.4)	-0.5 (2.2)	-1.3 (2.2)	0.0 (1.2)
Mountain Plains	5.8* (2.2)	-1.4 (2.5)	-2.1 (2.9)	0.8 (1.5)
Western	1.1 (2.1)	0.4 (2.1)	4.2* (2.0)	1.4 (1.3)
Number of Students	733	694	680	2,107
Number of Schools	103	90	91	284

Source: School Nutrition and Meal Cost Study, 24-Hour Dietary Recalls: Day 1, Principal Survey, School Nutrition Manager Survey, and School Food Authority Director Survey, school year 2014-2015. Estimates are weighted to be nationally representative of all students in public, non-charter schools offering the National School Lunch Program.

Notes: Estimates are regression coefficients for the relationship between each variable listed in the leftmost column and total HEI-2010 scores for students. Standard errors are in parentheses.
For the HEI-2010, the maximum possible total score is 100. A higher total score indicates higher nutritional quality of students' diets.

Relationship between characteristic and total HEI-2010 score is significantly different from zero at the ***0.001 level, ** 0.01 level, or * 0.05 level.

--0-- = Reference category. Coefficient estimates for mutually exclusive categories are relative to the reference category's total HEI score.

‡ Category was combined with the above category due to sparseness of observations.

HEI = Healthy Eating Index; FNS = Food and Nutrition Service; NSLP = National School Lunch Program; SFA = school food authority.

APPENDIX P

CHAPTER 15 SUPPLEMENTAL TABLES

This page has been left blank for double-sided copying.

TABLES

P.1	Comparison of the Percentage of NSLP Participants and Nonparticipants with Acceptable ^a , Inadequate, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: All Students	P.5
P.2	Comparison of the Percentage of NSLP Participants and Nonparticipants with Acceptable, Inadequate ^a , or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: Elementary School Students	P.7
P.3	Comparison of the Percentage of NSLP Participants and Nonparticipants with Acceptable, Inadequate ^a , or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: Middle School Students	P.9
P.4	Comparison of the Percentage of NSLP Participants and Nonparticipants with Acceptable, Inadequate ^a , or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: High School Students	P.11
P.5	Comparison of Mean Healthy Eating Index Scores for Selected Components for NSLP Participants and Nonparticipants in SY 2004-2005 and SY 2014-2015	P.13
P.6	Comparison of the Percentage of SBP Participants and Nonparticipants with Acceptable, Inadequate ^a , or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: All Students	P.15
P.7	Comparison of the Percentage of SBP Participants and Nonparticipants with Acceptable, Inadequate ^a , or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: Elementary School Students.....	P.17
P.8	Comparison of the Percentage of SBP Participants and Nonparticipants with Acceptable, Inadequate ^a , or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: Middle School Students	P.19
P.9	Comparison of the Percentage of SBP Participants and Nonparticipants with Acceptable, Inadequate ^a , or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: High School Students	P.21
P.10	Comparison of Mean Healthy Eating Index Scores for Selected Components for SBP Participants and Nonparticipants in SY 2004-2005 and SY 2014-2015	P.23

This page has been left blank for double-sided copying.

Table P.1. Comparison of the Percentage of NSLP Participants and Nonparticipants with Acceptable^a, Inadequate, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: All Students

	NSLP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Macronutrients						
Total Fat						
% within AMDR	76.8	83.9	7.1	94.2	78.4	-15.8
% > AMDR	20.2	12.9	-7.3	5.5 [^]	17.0	11.5
% < AMDR	<3	3.3		<3	4.6	
Saturated Fat						
% > DGA	80.5	62.4	-18.1***	79.7 [^]	60.6	-19.1*
Linoleic Acid						
% within AMDR	67.6	93.9	26.3***	69.1	85.2	16.1*
% > AMDR	<3	<3		<3	3.5	
% < AMDR	32.4	5.3	-27.1***	30.6	11.3	-19.3***
Alpha-Linolenic Acid						
% within AMDR	24.5	62.4	37.9***	17.8	56.8	39.0***
% > AMDR	<3	<3		<3	<3	
% < AMDR	75.6	37.6	-38.0***	82.2	43.0	-39.2***
Carbohydrate						
% < EAR	<3	<3		<3	<3	
% within AMDR	96.6	98.1	1.5	>97	96.7	
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		<3	<3	
Protein						
% < EAR	<3	9.1		<3	16.6	
% within AMDR	>97	>97		94.1	97.7	3.6
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		6.0 [^]	2.3	-3.7
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	20.0	24.7	4.7	27.6	26.2	-1.4
Vitamin C ^b	12.2	11.9	-0.3	12.5 [^]	24.5	12.0*
Vitamin E	87.7	73.6	-14.1***	85.9	68.2	-17.7***
Vitamin B ₆	<3	<3		3.4 [^]	3.3	-0.1
Vitamin B ₁₂	<3	<3		5.2 [^]	4.4	-0.8
Folate	<3	2.7		7.9 [^]	10.7	2.8
Niacin ^c	<3	<3		<3	<3	
Riboflavin	<3	<3		<3	2.7	
Thiamin	<3	<3		5.2 [^]	3.9	-1.3
Iron ^d	<3	<3		<3	<3	
Magnesium	27.4	27.6	0.2	37.6	35.4	-2.2
Phosphorus	11.7	8.8	-2.9	21.1	19.4	-1.7
Zinc	4.0 [^]	2.7	-1.3	13.3 [^]	17.4	4.1
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	95.0	95.6	0.6	88.1	85.9	-2.2
Cholesterol (% > DGA)	9.1 [^]	6.7	-2.4	7.6 [^]	11.8	4.2

	NSLP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Calcium, Potassium, and Dietary Fiber (mean % of AI)^a						
Calcium ^e	103.3 ^	104.1	0.8	87.0	93.8	6.8*
Potassium	59.5	56.6	-2.9*	53.9	54.1	0.2
Dietary Fiber	50.5	60.6	10.1***	45.0	57.5	12.5***
Dietary Fiber Density (g/1,000 calories)	48.9	64.6	15.7***	46.3	61.9	15.6***
Number of Students	1385	1254		506	911	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Gordon et al. 2009), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a lunch.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

For SNMCS, actual sample sizes for some nutrients differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by nutrient basis, in order to estimate usual intake distributions.

^aThe AI cannot be used to estimate the prevalence of inadequate intakes of calcium, potassium, and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

^bThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^cNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^dComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^eThe DRI for calcium changed since SNDA-III (from an AI to an EAR). This analysis focused on the previous standard—the AI—since these were the only data available from SNDA-III.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; NSLP = National School Lunch Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year; UL = Tolerable Upper Intake Level.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97. The statistical significance of differences between SY 2004-2005 and SY 2014-2015 could not be tested when SY 2004-2005 point estimates were reported as <3 or >97 because standard errors for these estimates were not reported in tables included in the SNDA-III report.

Table P.2. Comparison of the Percentage of NSLP Participants and Nonparticipants with Acceptable, Inadequate^a, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: Elementary School Students

	NSLP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Macronutrients						
Total Fat						
% within AMDR	77.4	88.8	11.4	87.0	78.6	-8.4
% > AMDR	17.6 [^]	7.9	-9.7	10.1 [^]	14.6	4.5
% < AMDR	4.9 [^]	3.3 [^]	-1.6	2.9 [^]	6.8 [^]	3.9
Saturated Fat						
% > DGA	77.5	59.4	-18.1	62.1	61.9	-0.2
Linoleic Acid						
% within AMDR	63.4	94.9	31.5***	65.1	71.6	6.5
% > AMDR	<3	<3		<3	6.8 [^]	
% < AMDR	36.6	4.9	-31.7***	34.7	21.7	-13.0
Alpha-Linolenic Acid						
% within AMDR	20.6	59.5	38.9***	22.0	56.7	34.7
% > AMDR	<3	<3		<3	<3	
% < AMDR	79.4	40.5	-38.9***	78.0	42.5	-35.5
Carbohydrate						
% < EAR	<3	<3		<3	<3	
% within AMDR	93.5	>97		>97	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	4.2 [^]	<3		<3	<3	
Protein						
% < EAR	<3	<3		<3	8.2 [^]	
% within AMDR	>97	>97		>97	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		<3	<3	
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	7.4 [^]	11.0	3.6	<3	11.2	
Vitamin C ^b	5.7 [^]	<3		<3	9.2 [^]	
Vitamin E	84.6	64.4	-20.2***	88.9 [^]	57.7	-31.2***
Vitamin B ₆	<3	<3		<3	<3	
Vitamin B ₁₂	<3	<3		<3	<3	
Folate	<3	<3		<3	3.9 [^]	
Niacin ^c	<3	<3		<3	<3	
Riboflavin	<3	<3		<3	<3	
Thiamin	<3	<3		<3	<3	
Iron ^d	<3	<3		<3	<3	
Magnesium	8.1	4.7	-3.4	6.1 [^]	13.1	7.0
Phosphorus	6.5	<3		13.0 [^]	13.7	0.7
Zinc	<3	<3		9.2 [^]	7.1 [^]	-2.1
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	95.6	96.7 [^]	1.1	94.3 [^]	84.0	-10.3
Cholesterol (% > DGA)	7.3 [^]	4.8	-2.5	5.8 [^]	12.7	6.9

	NSLP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Calcium, Potassium, and Dietary Fiber (mean % of AI)^a						
Calcium ^e	114.4 [^]	114.0	-0.4	100.4 [^]	100.5	0.1
Potassium	61.5	59.3	-2.2	58.1	54.3	-3.8
Dietary Fiber	53.7	64.6	10.9***	48.7	61.6	12.9**
Dietary Fiber Density (g/1,000 calories)	50.9	66.2	15.3***	48.7	66.7	18.0***
Number of Students	531	540		142	208	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Gordon et al. 2007), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a lunch.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

For SNMCS, actual sample sizes for some nutrients differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by nutrient basis, in order to estimate usual intake distributions.

^aThe AI cannot be used to estimate the prevalence of inadequate intakes of calcium, potassium, and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

^bThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^cNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^dComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^eThe DRI for calcium changed since SNDA-III (from an AI to an EAR). This analysis focused on the previous standard—the AI—since these were the only data available from SNDA-III.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level or ** 0.01 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; NSLP = National School Lunch Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year; UL = Tolerable Upper Intake Level.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97. The statistical significance of differences between SY 2004-2005 and SY 2014-2015 could not be tested when SY 2004-2005 point estimates were reported as <3 or >97 because standard errors for these estimates were not reported in tables included in the SNDA-III report.

Table P.3. Comparison of the Percentage of NSLP Participants and Nonparticipants with Acceptable, Inadequate^a, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: Middle School Students

	NSLP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Macronutrients						
Total Fat						
% within AMDR	78.8	80.3	1.5	95.1	91.0	-4.1
% > AMDR	19.8 [^]	18.1	-1.7	4.2 [^]	6.6	2.4
% < AMDR	<3	<3		<3	<3	
Saturated Fat						
% > DGA	87.7	70.5	-17.2	44.7 [^]	42.4	-2.3
Linoleic Acid						
% within AMDR	67.4	95.3 [^]	27.9***	70.1	85.7	15.6*
% > AMDR	<3	<3		<3	5.1 [^]	
% < AMDR	32.6 [^]	<3		29.9 [^]	9.2	-20.7***
Alpha-Linolenic Acid						
% within AMDR	<3	73.8		7.4	57.9	50.5
% > AMDR	<3	<3		<3	<3	
% < AMDR	>97	26.1		92.6 [^]	42.1	-50.5
Carbohydrate						
% < EAR	<3	<3		<3	<3	
% within AMDR	>97	>97		>97	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		<3	<3	
Protein						
% < EAR	<3	7.7		<3	10.3	
% within AMDR	>97	>97		93.4	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		6.6 [^]	<3	
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	28.8	35.9	7.1	44.2	36.4	-7.8
Vitamin C ^b	14.2 [^]	14.6	0.4	25.6	33.2	7.6
Vitamin E	94.2	90.7	-3.5	92.3 [^]	79.4	-12.9**
Vitamin B ₆	6.1 [^]	<3		5.4 [^]	10.3	4.9
Vitamin B ₁₂	<3	<3		6.2 [^]	5.2 [^]	-1.0
Folate	6.2 [^]	5.4	-0.8	12.0 [^]	12.4	0.4
Niacin ^c	<3	<3		<3	<3	
Riboflavin	<3	<3		4.1 [^]	4.5 [^]	0.4
Thiamin	3.7 [^]	<3		6.4 [^]	3.3 [^]	-3.1
Iron ^d	<3	<3		3.2 [^]	<3	
Magnesium	43.2	26.7	-16.5*	62.0	35.5	-26.5***
Phosphorus	23.0 [^]	14.9	-8.1	34.9	22.9	-12.0
Zinc	7.6 [^]	3.6 [^]	-4.0	14.9 [^]	28.0	13.1*

	NSLP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	90.7	93.0	2.3	88.8	82.2	-6.6
Cholesterol (% > DGA)	6.9 ^	7.0	0.1	7.4 ^	5.9 ^	-1.5
Calcium, Potassium, and Dietary Fiber (mean % of AI)^a						
Calcium ^e	87.6	81.6	-6.0*	63.8	79.9	16.1**
Potassium	55.0	49.4	-5.6***	48.3	50.3	2.0
Dietary Fiber	46.5	54.6	8.1***	40.0	51.4	11.4***
Dietary Fiber Density (g/1,000 calories)	47.6	64.7	17.1***	43.1	60.0	16.9***
Number of Students	496	406		176	308	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Gordon et al. 2007), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a lunch.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

For SNMCS, actual sample sizes for some nutrients differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by nutrient basis, in order to estimate usual intake distributions.

^aThe AI cannot be used to estimate the prevalence of inadequate intakes of calcium, potassium, and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

^bThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^cNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^dComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^eThe DRI for calcium changed since SNDA-III (from an AI to an EAR). This analysis focused on the previous standard—the AI—since these were the only data available from SNDA-III.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; NSLP = National School Lunch Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year; UL = Tolerable Upper Intake Level.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97. The statistical significance of differences between SY 2004-2005 and SY 2014-2015 could not be tested when SY 2004-2005 point estimates were reported as <3 or >97 because standard errors for these estimates were not reported in tables included in the SNDA-III report.

Table P.4. Comparison of the Percentage of NSLP Participants and Nonparticipants with Acceptable, Inadequate^a, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: High School Students

	NSLP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Macronutrients						
Total Fat						
% within AMDR	68.4	59.0	-9.4	63.5	79.7	16.2
% > AMDR	30.5	28.8	-1.7	30.0 [^]	19.2	-10.8
% < AMDR	<3	12.3		6.5 [^]	<3	
Saturated Fat						
% > DGA	74.9	62.6	-12.3 [*]	67.9	63.5	-4.4
Linoleic Acid						
% within AMDR	75.4	88.3	12.9	76.3	95.9 [^]	19.6
% > AMDR	<3	3.1 [^]		<3	<3	
% < AMDR	24.0 [^]	8.6	-15.4 [*]	23.0 [^]	3.1 [^]	-19.9 [*]
Alpha-Linolenic Acid						
% within AMDR	40.1	66.1	26.0 ^{**}	38.8	52.4	13.6
% > AMDR	<3	<3		<3	<3	
% < AMDR	59.2	33.9	-25.3 ^{**}	61.2 [^]	47.3	-13.9
Carbohydrate						
% < EAR	<3	<3		3.1 [^]	<3	
% within AMDR	95.7	84.4	-11.3	84.8	95.3 [^]	10.5
% > AMDR	<3	<3		5.5 [^]	<3	
% < AMDR	4.3 [^]	12.9	8.6	9.7 [^]	4.1 [^]	-5.6
Protein						
% < EAR	<3	20.6		<3	24.6	
% within AMDR	96.7	>97		89.4	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	3.3 [^]	<3		10.6 [^]	<3	
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	48.8	45.5	-3.3	63.8	50.4	-13.4
Vitamin C ^b	31.8	48.3	16.5 ^{**}	47.9	44.5	-3.4
Vitamin E	95.0	85.5	-9.5	89.7	81.9	-7.8
Vitamin B ₆	<3	<3		20.1	12.8	-7.3
Vitamin B ₁₂	<3	<3		10.8 [^]	15.6	4.8
Folate	4.3 [^]	7.7	3.4	28.8	30.0	1.2
Niacin ^c	<3	<3		10.9 [^]	6.8	-3.1
Riboflavin	<3	<3		11.9 [^]	12.4	0.5
Thiamin	4.4 [^]	<3		22.1	19.2	-2.9
Iron ^d	8.8 [^]	<3		9.5 [^]	<3	
Magnesium	77.8	63.6	-14.2 [*]	83.8	69.5	-14.3 [*]
Phosphorus	15.5 [^]	16.6	1.1	39.3	31.1	-8.2
Zinc	3.6 [^]	8.9	5.3	25.4 [^]	33.4	8.0

	NSLP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	96.0 [^]	88.2	-7.8*	77.9	90.7	12.8
Cholesterol (% > DGA)	21.4 [^]	19.9	-1.5	15.7 [^]	13.3	-2.4
Calcium, Potassium, and Dietary Fiber (mean % of AI)^a						
Calcium ^e	86.6	98.5	11.9	70.7	84.8	14.1
Potassium	58.2	55.5	-2.7	47.4	52.8	5.4
Dietary Fiber	45.1	55.5	10.4**	39.3	51.0	11.7*
Dietary Fiber (g/1,000 calories)	44.2	60.5	16.3***	42.3	59.5	17.2***
Number of Students	358	308		188	395	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Gordon et al. 2007), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a lunch.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

For SNMCS, actual sample sizes for some nutrients differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by nutrient basis, in order to estimate usual intake distributions.

^aThe AI cannot be used to estimate the prevalence of inadequate intakes of calcium, potassium, and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

^bThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^cNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^dComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^eThe DRI for calcium changed since SNDA-III (from an AI to an EAR). This analysis focused on the previous standard—the AI—since these were the only data available from SNDA-III.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; NSLP = National School Lunch Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year; UL = Tolerable Upper Intake Level.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97. The statistical significance of differences between SY 2004-2005 and SY 2014-2015 could not be tested when SY 2004-2005 point estimates were reported as <3 or >97 because standard errors for these estimates were not reported in tables included in the SNDA-III report.

Table P.5. Comparison of Mean Healthy Eating Index Scores for Selected Components for NSLP Participants and Nonparticipants in SY 2004-2005 and SY 2014-2015

		NSLP Participants			Matched Nonparticipants		
		SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
HEI Component ^a	Maximum Score						
Elementary School Students							
Total Fruit	5	4.1	4.8	0.7*	4.6	4.4	-0.2
Whole Fruit	5	4.1	5.0	0.9***	4.4	5.0	0.6***
Total Vegetables	5	2.6	2.3	-0.3	2.4	2.2	-0.2
Dairy	10	10.0	9.9	-0.1	8.8	8.4	-0.4
Middle School Students							
Total Fruit	5	3.1	4.6	1.5***	3.9	4.3	0.4
Whole Fruit	5	3.1	5.0	1.9***	4.5	5.0	0.5*
Total Vegetables	5	2.6	2.1	-0.5***	2.0	2.0	0.0
Dairy	10	9.6	9.3	-0.3	6.7	9.1	2.4***
High School Students							
Total Fruit	5	3.1	3.7	0.6	2.8	3.9	1.1*
Whole Fruit	5	2.3	4.6	2.3***	2.2	4.9	2.7***
Total Vegetables	5	2.7	2.2	-0.5**	2.7	2.6	-0.1
Dairy	10	7.8	9.8	2.0***	7.3	7.6	0.3
All Students							
Total Fruit	5	3.7	4.5	0.8**	4.0	4.2	0.2
Whole Fruit	5	3.4	5.0	1.6***	3.9	5.0	1.1***
Total Vegetables	5	2.6	2.2	-0.4**	2.4	2.2	-0.2
Dairy	10	9.6	9.8	0.2	8.0	8.3	0.3
Number of Students		1,385	1,254		506	911	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Fox et al. 2009b), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a lunch.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between NSLP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

Higher scores for these components reflect higher intakes, and thus, higher diet quality.

^aComparisons are limited to components that were scored the same way in the HEI-2005, which was estimated in a secondary analysis of SNDA-III data (Fox et al. 2009b), and the HEI-2010, which was estimated in the SNMCS.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; NSLP = National School Lunch Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year.

Table P.6. Comparison of the Percentage of SBP Participants and Nonparticipants with Acceptable, Inadequate^a, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: All Students

	SBP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Macronutrients						
Total Fat						
% within AMDR	77.3	90.9	13.6	83.5	81.0	-2.5
% > AMDR	20.3 [^]	7.0	-13.3	14.4 [^]	14.7	0.3
% < AMDR	<3	<3		<3	4.2	
Saturated Fat						
% > DGA	71.5	57.7	-13.8 [*]	70.4	62.9	-7.5
Linoleic Acid						
% within AMDR	69.5	95.4	25.9 ^{***}	62.9	90.2	27.3 ^{***}
% > AMDR	<3	<3		<3	1.5	
% < AMDR	30.2	4.2	-26.0 ^{***}	36.4	8.3	-28.1 ^{***}
Alpha-Linolenic Acid						
% within AMDR	27.1	65.0	37.9 ^{**}	24.2	58.8	34.6 ^{***}
% > AMDR	<3	<3		<3	<3	
% < AMDR	72.9	35.0	-37.9 ^{**}	75.6	41.2	-34.4 ^{***}
Carbohydrate						
% < EAR	<3	<3		<3	<3	
% within AMDR	96.9	>97		97.0	97.4	0.4
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		<3	1.8	
Protein						
% < EAR	<3	11.9		<3	14.1	
% within AMDR	>97	>97		>97	98.5	
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		<3	1.4	
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	13.4 [^]	19.3	5.9	26.6	28.0	1.4
Vitamin C ^b	5.4 [^]	9.9	4.5	<3	16.7	
Vitamin E	82.4	70.4	-12.0 ^{**}	82.5	70.3	-12.2 ^{**}
Vitamin B ₆	<3	<3		<3	<3	
Vitamin B ₁₂	<3	<3		<3	2.4	
Folate	<3	3.8 [^]		<3	6.2	
Niacin ^c	<3	<3		<3	<3	
Riboflavin	<3	<3		<3	<3	
Thiamin	<3	<3		<3	1.4	
Iron ^d	<3	<3		<3	<3	
Magnesium	20.6 [^]	24.7	4.1	29.0 [^]	30.5	1.5
Phosphorus	7.4 [^]	<3		18.0	13.3	-4.7
Zinc	<3	<3		9.1 [^]	9.3	0.2

	SBP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	>97	96.9 ^		86.8	95.8	9.0*
Cholesterol (% > DGA)	12.9 ^	8.0	-4.9	18.6 ^	5.1	-13.5*
Calcium, Potassium, and Dietary Fiber (mean % of AI)^a						
Calcium ^e	109.5 ^	104.7	-4.8	99.3 ^	101.5	2.2
Potassium	63.3	58.1	-5.2**	57.1	55.4	-1.7
Dietary Fiber	52.6	62.0	9.4***	50.8	58.9	8.1**
Dietary Fiber Density (g/1,000 calories)	48.1	64.5	16.4***	48.9	63.8	14.9***
Number of Students	381	511		302	1654	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Gordon et al. 2007), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a breakfast.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between SBP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

For SNMCS, actual sample sizes for some nutrients differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by nutrient basis, in order to estimate usual intake distributions.

^aThe AI cannot be used to estimate the prevalence of inadequate intakes of calcium, potassium, and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

^bThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^cNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^dComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^eThe DRI for calcium changed since SNDA-III (from an AI to an EAR). This analysis focused on the previous standard—the AI—since these were the only data available from SNDA-III.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; SBP = School Breakfast Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year; UL = Tolerable Upper Intake Level.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97. The statistical significance of differences between SY 2004-2005 and SY 2014-2015 could not be tested when SY 2004-2005 point estimates were reported as <3 or >97 because standard errors for these estimates were not reported in tables included in the SNDA-III report.

Table P.7. Comparison of the Percentage of SBP Participants and Nonparticipants with Acceptable, Inadequate^a, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: Elementary School Students

	SBP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Macronutrients						
Total Fat						
% within AMDR	70.6	86.4	15.8	79.4	91.0	11.6
% > AMDR	22.6	8.3 [^]	-14.3	13.5 [^]	6.4	-7.1
% < AMDR	6.9 [^]	5.3 [^]	-1.6	7.1 [^]	<3	
Saturated Fat						
% > DGA	75.6	50.7	-24.9**	64.6	56.0	-8.6
Linoleic Acid						
% within AMDR	57.3	94.2 [^]	36.9***	60.8	88.1	27.3***
% > AMDR	<3	<3		<3	<3	
% < AMDR	41.6	5.4 [^]	-36.2***	38.9	11.2	-27.7***
Alpha-Linolenic Acid						
% within AMDR	25.7	64.5	38.8**	16.5	58.3	41.8***
% > AMDR	<3	<3		<3	<3	
% < AMDR	74.3	35.2	-39.1**	83.5	41.7	-41.8***
Carbohydrate						
% < EAR	<3	<3		<3	<3	
% within AMDR	89.2	>97		>97	>97	
% > AMDR	3.3 [^]	<3		<3	<3	
% < AMDR	7.5 [^]	<3		<3	<3	
Protein						
% < EAR	<3	<3		<3	6.6	
% within AMDR	>97	>97		>97	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		<3	<3	
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	5.9 [^]	6.4 [^]	0.5	13.9 [^]	11.2	-2.7
Vitamin C ^b	6.4 [^]	<3		<3	3.6 [^]	
Vitamin E	75.9	61.0	-14.9*	76.2	58.7	-17.5*
Vitamin B ₆	<3	<3		<3	<3	
Vitamin B ₁₂	<3	<3		<3	<3	
Folate	<3	<3		<3	<3	
Niacin ^c	<3	<3		<3	<3	
Riboflavin	<3	<3		<3	<3	
Thiamin	<3	<3		<3	<3	
Iron ^d	<3	<3		<3	<3	
Magnesium	6.0 [^]	3.7 [^]	-2.3	11.1 [^]	5.8	-5.3
Phosphorus	3.9 [^]	<3		15.5	7.3	-8.2
Zinc	<3	<3		5.0 [^]	3.0 [^]	-2.0

	SBP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	>97	96.6 [^]		87.1 [^]	>97	
Cholesterol (% > DGA)	8.6 [^]	4.5 [^]	-4.1	13.8 [^]	3.1 [^]	-10.7
Calcium, Potassium, and Dietary Fiber (mean % of AI)^a						
Calcium ^e	121.6 [^]	114.5	-7.1	109.6 [^]	116.3	6.7
Potassium	65.7	60.9	-4.8	59.3	58.8	-0.5
Dietary Fiber	55.4	66.1	10.7 ^{**}	54.0	65.0	11.0 ^{**}
Dietary Fiber Density (g/1,000 calories)	49.3	67.3	18.0 ^{***}	51.2	67.1	15.9 ^{***}
Number of Students	160	228		118	520	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Gordon et al. 2007), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a breakfast.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between SBP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

For SNMCS, actual sample sizes for some nutrients differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by nutrient basis, in order to estimate usual intake distributions.

^aThe AI cannot be used to estimate the prevalence of inadequate intakes of calcium, potassium, and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

^bThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^cNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^dComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^eThe DRI for calcium changed since SNDA-III (from an AI to an EAR). This analysis focused on the previous standard—the AI—since these were the only data available from SNDA-III.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; SBP = School Breakfast Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year; UL = Tolerable Upper Intake Level.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97. The statistical significance of differences between SY 2004-2005 and SY 2014-2015 could not be tested when SY 2004-2005 point estimates were reported as <3 or >97 because standard errors for these estimates were not reported in tables included in the SNDA-III report.

Table P.8. Comparison of the Percentage of SBP Participants and Nonparticipants with Acceptable, Inadequate^a, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: Middle School Students

	SBP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Macronutrients						
Total Fat						
% within AMDR	63.5	88.8 [^]	25.3 [*]	69.1	85.5	16.4
% > AMDR	34.2	10.4 [^]	-23.8 [*]	30.9 [^]	11.9	-19.0
% < AMDR	<3	<3		<3	<3	
Saturated Fat						
% > DGA	71.1	69.6	-1.5	86.3 [^]	56.1	-30.2 [*]
Linoleic Acid						
% within AMDR	79.0	95.0 [^]	16.0 [*]	65.2	96.5 [^]	31.3 ^{***}
% > AMDR	<3	<3		<3	<3	
% < AMDR	20.9 [^]	4.6 [^]	-16.3 [*]	34.6 [^]	<3	
Alpha-Linolenic Acid						
% within AMDR	29.8	60.6	30.8	25.8	64.3	38.5 ^{***}
% > AMDR	<3	<3		<3	<3	
% < AMDR	70.2 [^]	39.4	-30.8	74.0	35.7	-38.3 ^{***}
Carbohydrate						
% < EAR	<3	<3		<3	<3	
% within AMDR	95.2	>97		86.3	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	3.5 [^]	<3		13.5 [^]	<3	
Protein						
% < EAR	<3	5.8 [^]		<3	12.4	
% within AMDR	>97	>97		>97	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	<3	<3		<3	<3	
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	27.3 [^]	31.8	4.5	44.8	37.9	-6.9
Vitamin C ^b	<3	19.4		18.0 [^]	24.5	6.5
Vitamin E	88.1 [^]	84.3	-3.8	91.0 [^]	86.5	-4.5
Vitamin B ₆	<3	<3		5.0 [^]	<3	
Vitamin B ₁₂	<3	<3		3.1 [^]	<3	
Folate	<3	6.5 [^]		17.8 [^]	9.1	-8.7
Niacin ^c	<3	<3		<3	<3	
Riboflavin	<3	<3		7.7 [^]	<3	
Thiamin	<3	<3		11.4 [^]	<3	
Iron ^d	<3	<3		3.6 [^]	<3	
Magnesium	40.8	26.4	-14.4	57.1	30.7	-26.4 ^{**}
Phosphorus	19.6 [^]	9.9 [^]	-9.7	36.7	29.8	-6.9
Zinc	7.6 [^]	8.1 [^]	0.5	25.5	7.0	-18.5 [*]

	SBP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	>97	>97		74.8	91.8	17.0
Cholesterol (% > DGA)	6.2 ^	12.7 ^	6.5	15.3 ^	<3	
Calcium, Potassium, and Dietary Fiber (mean % of AI)^a						
Calcium ^e	81.5	89.0	7.5	69.8	78.0	8.2
Potassium	55.7	53.7	-2.0	48.5	48.5	0.0
Dietary Fiber	46.7	58.3	11.6***	44.9	51.0	6.1*
Dietary Fiber Density (g/1,000 calories)	46.4	62.4	16.0***	44.2	62.9	18.7***
Number of Students	127	144		99	570	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Gordon et al. 2007), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a breakfast.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between SBP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

For SNMCS, actual sample sizes for some nutrients differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by nutrient basis, in order to estimate usual intake distributions.

^aThe AI cannot be used to estimate the prevalence of inadequate intakes of calcium, potassium, and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

^bThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^cNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^dComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^eThe DRI for calcium changed since SNDA-III (from an AI to an EAR). This analysis focused on the previous standard—the AI—since these were the only data available from SNDA-III.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; SBP = School Breakfast Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year; UL = Tolerable Upper Intake Level.

^ Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97. The statistical significance of differences between SY 2004-2005 and SY 2014-2015 could not be tested when SY 2004-2005 point estimates were reported as <3 or >97 because standard errors for these estimates were not reported in tables included in the SNDA-III report.

Table P.9. Comparison of the Percentage of SBP Participants and Nonparticipants with Acceptable, Inadequate^a, or Excessive Usual Daily Nutrient Intakes in SY 2004-2005 and SY 2014-2015: High School Students

	SBP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Macronutrients						
Total Fat						
% within AMDR	78.9	89.0 [^]	10.1	48.2	65.4	17.2
% > AMDR	21.1 [^]	9.9 [^]	-11.2	38.4	29.0	-9.4
% < AMDR	5.0 [^]	<3		13.5 [^]	5.6	-7.9
Saturated Fat						
% > DGA	59.8	65.3	5.5	70.3	60.3	-10.0
Linoleic Acid						
% within AMDR	96.0	92.1 [^]	-3.9	63.7	91.1	27.4 [*]
% > AMDR	<3	<3		3.2 [^]	3.5 [^]	0.3
% < AMDR	4.0 [^]	6.0 [^]	2.0	33.1 [^]	5.4	-27.7 ^{**}
Alpha-Linolenic Acid						
% within AMDR	36.2	59.1	22.9	41.6	62.4	20.8
% > AMDR	<3	<3		<3	<3	
% < AMDR	63.6	40.9	-22.7	56.6	37.6	-19.0
Carbohydrate						
% < EAR	<3	<3		<3	<3	
% within AMDR	>97	>97		79.0	87.9	8.9
% > AMDR	<3	<3		3.2 [^]	<3	
% < AMDR	<3	<3		17.9 [^]	10.4	-7.5
Protein						
% < EAR	<3	30.7		<3	23.5	
% within AMDR	>97	>97		>97	>97	
% > AMDR	<3	<3		<3	<3	
% < AMDR	5.9 [^]	<3		<3	<3	
Vitamins and Minerals with EARs (Percentage < EAR)						
Vitamin A	34.2 [^]	49.6	15.4	53.6	54.6	1.0
Vitamin C ^b	10.2 [^]	35.2	25.0 [*]	36.1	49.6	13.5
Vitamin E	>97	83.7		93.6 [^]	89.6	-4.0
Vitamin B ₆	<3	14.4		<3	4.3	
Vitamin B ₁₂	<3	<3		3.5 [^]	9.9	6.4
Folate	6.6 [^]	17.6	11.0	6.6 [^]	21.6	15.0 [*]
Niacin ^c	3.3 [^]	3.7 [^]	0.4	<3	<3	
Riboflavin	<3	4.1 [^]		5.4 [^]	8.0	2.6
Thiamin	4.3	9.6 [^]	5.3	5.5 [^]	8.9	3.4
Iron ^d	7.7	<3		8.5 [^]	<3	
Magnesium	75.3 [^]	64.5	-10.8	72.9 [^]	72.0	-0.9
Phosphorus	<3	16.2		25.4	24.3	-1.1
Zinc	8.7 [^]	12.5 [^]	3.8	9.7 [^]	26.6	16.9 ^{**}

	SBP Participants			Matched Nonparticipants		
	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Sodium and Cholesterol (% > UL or DGA)						
Sodium (% > UL)	>97	84.4		94.6 [^]	91.4	-3.2
Cholesterol (% > DGA)	27.4 [^]	14.9	-12.5	45.5	17.4	-28.1 ^{**}
Calcium, Potassium, and Dietary Fiber (mean % of AI)^a						
Calcium ^e	91.1 [^]	95.6	4.5	89.7 [^]	85.4	-4.3
Potassium	61.9	56.7	-5.2	57.5	52.2	-5.3
Dietary Fiber	47.8	55.4	7.6	44.2	50.7	6.5
Dietary Fiber Density (g/1,000 calories)	45.1	59.9	14.8 ^{***}	44.8	58.0	13.2 ^{***}
Number of Students	94	139		85	564	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Gordon et al. 2007), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a breakfast.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between SBP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

For SNMCS, actual sample sizes for some nutrients differ from the reported total sample sizes because outliers had to be omitted, on a nutrient by nutrient basis, in order to estimate usual intake distributions.

^aThe AI cannot be used to estimate the prevalence of inadequate intakes of calcium, potassium, and dietary fiber. Instead, assessment focuses on comparing usual intakes to the AI by computing the mean percentage of the AI.

^bThe EAR for vitamin C is 35 mg greater for smokers than nonsmokers. EARs for nonsmokers were used in this analysis.

^cNiacin intakes include preformed niacin only. EARs for niacin are expressed as niacin equivalents, including contributions from tryptophan. Therefore, prevalence of inadequate niacin intakes may be overestimated.

^dComparisons to the EAR for iron were done using the probability approach. The significance of differences between participants and the matched comparison group of nonparticipants could not be tested.

^eThe DRI for calcium changed since SNDA-III (from an AI to an EAR). This analysis focused on the previous standard—the AI—since these were the only data available from SNDA-III.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

AI = Adequate Intake; AMDR = Acceptable Macronutrient Distribution Range; DGA = 2010 *Dietary Guidelines for Americans* recommendation; EAR = Estimated Average Requirement; SBP = School Breakfast Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year; UL = Tolerable Upper Intake Level.

[^] Point estimate is considered less precise than estimates that are not flagged because the sample size is small or the coefficient of variation is large. The rules used in flagging estimates are described in Chapter 1. When these rules are applied, percentages close to 0 or 100 are often flagged. In this table, flagged percentages between 0 and 3 percent are displayed as <3 and flagged percentages between 97 and 100 percent are displayed as >97. The statistical significance of differences between SY 2004-2005 and SY 2014-2015 could not be tested when SY 2004-2005 point estimates were reported as <3 or >97 because standard errors for these estimates were not reported in tables included in the SNDA-III report.

Table P.10. Comparison of Mean Healthy Eating Index Scores for Selected Components for SBP Participants and Nonparticipants in SY 2004-2005 and SY 2014-2015

HEI Component ^a	Maximum Score	SBP Participants			Matched Nonparticipants		
		SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)	SY 2004-2005 (SNDA-III)	SY 2014-2015 (SNMCS)	Difference (SY 2014-2015 – SY 2004-2005)
Elementary School Students							
Total Fruit	5	4.3	4.9	0.6***	3.6	4.7	1.1
Whole Fruit	5	3.7	5.0	1.3***	4.0	5.0	1.0***
Total Vegetables	5	2.6	2.3	-0.3	2.5	2.2	-0.3
Dairy	10	10.0	9.8	-0.2	8.4	9.9	1.5***
Middle School Students							
Total Fruit	5	3.1	4.4	1.3**	3.0	4.8	1.8**
Whole Fruit	5	2.5	4.9	2.4***	3.3	5.0	1.7***
Total Vegetables	5	2.5	2.2	-0.3	2.7	2.2	-0.5
Dairy	10	8.5	9.0	0.5	7.0	9.1	2.1*
High School Students							
Total Fruit	5	3.6	4.3	0.7	2.4	3.4	1.0*
Whole Fruit	5	2.3	4.7	2.4***	1.6	4.5	2.9***
Total Vegetables	5	2.6	2.2	-0.4	2.6	2.3	-0.3
Dairy	10	7.3	9.3	2.0*	6.7	8.1	1.4
All Students							
Total Fruit	5	4.0	4.8	0.8**	3.3	4.3	1.0*
Whole Fruit	5	3.2	5.0	1.8***	3.4	5.0	1.6***
Total Vegetables	5	2.6	2.2	-0.4*	2.6	2.3	-0.3
Dairy	10	9.6	9.5	-0.1	7.8	9.2	1.4**
Number of Students		381	511		302	1,654	

Source: Data for school year 2004-2005 were estimated using data from the third School Nutrition Dietary Assessment Study (SNDA-III) (Fox et al. 2009b), and are representative of all students in public NSLP schools in SY 2004-2005. Data for school year 2014-2015 are from the School Nutrition and Meal Cost Study (24-Hour Dietary Recalls: Day 1), and are weighted to be representative of all students in public, non-charter schools offering the National School Lunch Program. Samples includes all students, including those who did not consume a breakfast.

Notes: SNDA-III and SNMCS both used propensity score approaches to construct samples of nonparticipants, controlling for differences between SBP participants and nonparticipants in personal, family, and school characteristics. SNDA-III used nearest neighbor matching, which drops nonparticipants that don't match to a participant. SNMCS used inverse probability weighting, an approach that retains the full sample of nonparticipants. Despite the slightly different methods of constructing comparison groups of nonparticipants from propensity scores, each method employs nearly identical propensity score models and yields similar estimates. See Appendix G for more details.

Higher scores for these components reflect higher intakes, and thus, higher diet quality.

^aComparisons are limited to components that were scored the same way in the HEI-2005, which was estimated in a secondary analysis of SNDA-III data (Fox et al. 2009b), and the HEI-2010, which was estimated in the SNMCS.

Difference between SY 2004-2005 and SY 2014-2015 is significantly different from zero at the *** 0.001 level, ** 0.01 level, or * 0.05 level.

HEI = Healthy Eating Index; SBP = School Breakfast Program; SNDA = School Nutrition Dietary Assessment Study; SNMCS = School Nutrition and Meal Cost Study; SY = school year.

This page has been left blank for double-sided copying.

United States Department of Agriculture

Food and Nutrition Service

3101 Park Center Drive

Alexandria, VA 22302

Visit us at www.fns.usda.gov