

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



Appendix E. Usual Macronutrient and Calorie Intake



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

Appendix E. Usual Macronutrient and Calorie Intake



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Appendix E. Usual Macronutrient and Calorie Intake

Table E.1. Total Fat (Grams): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
All children	2,726	74	(0.9)	924	78	(1.8)	664	79	(2.1)	1,039	70 ***	(1.3)	237	78	(3.2)	688	74	(1.7)
5–18 years old																		
Boys	1,355	80	(1.4)	477	82	(2.8)	333	83	(2.7)	512	74 *	(2.0)	129	83	(5.0)	335	83	(2.4)
Girls	1,371	68	(1.2)	447	74	(2.1)	331	75	(3.1)	527	66 **	(1.7)	108	73	(4.0)	353	66	(2.3)
5–8 years old	853	67	(1.3)	339	66	(1.9)	254	68	(2.3)	298	65	(2.8)	78	64	(2.4)	198	71	(2.4)
Boys	434	70	(2.0)	162	69	(3.3)	119	73	(3.4)	158	64	(3.4)	39	62	(3.3)	109	76 ***	(2.7)
Girls	419	64	(1.8)	177	64	(2.0)	135	62	(3.0)	140	65	(4.5)	39	67	(3.5)	89	64	(4.1)
9–13 years old	1,071	74	(1.4)	388	79	(2.3)	285	81	(2.8)	380	67 ***	(1.7)	94	77	(4.7)	276	74	(2.7)
Boys	515	78	(1.8)	200	81	(3.5)	143	85	(3.9)	181	72 **	(2.7)	51	78	(5.6)	122	80	(3.1)
Girls	556	69	(2.1)	188	76	(2.9)	142	76	(4.1)	199	63 **	(2.1)	43	75	(7.5)	154	67	(4.4)
14–18 years old	802	79	(1.8)	197	86	(4.0)	125	86	(4.5)	361	77	(2.4)	65	89	(7.2)	214	78	(3.2)
Boys	406	89	(2.9)	115	93	(6.2)	71	88	(5.8)	173	85	(4.0)	39	103	(12.0)	104	89	(5.3)
Girls	396	69	(2.0)	82	79	(4.8)	54	84	(7.0)	188	69 *	(2.6)	26	74	(7.7)	110	65	(3.4)

See notes at end of table.

Table E.1a. Total Fat (Grams): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	52	57	61	67	78	91	99	104	113
5–8 years old	44	49	52	57	68	80	88	93	101
9–13 years old	54	59	62	67	77	88	95	99	106
14–18 years old	55	61	66	73	87	103	112	118	128
All NSLP participants	55	60	63	69	81	94	101	106	114
5–8 years old	45	49	52	57	67	78	85	90	98
9–13 years old	59	63	66	71	80	90	96	100	106
14–18 years old	58	65	69	77	92	108	118	124	134
Income-eligible NSLP participants	63	67	69	74	82	91	97	100	106
5–8 years old	47	52	55	61	71	84	91	97	105
9–13 years old	65	69	72	76	84	93	98	102	108
14–18 years old	72	75	78	81	88	95	99	101	105
Income-eligible nonparticipants	46	51	55	61	73	86	94	100	109
5–8 years old	42	46	49	53	63	74	80	85	93
9–13 years old	41	47	51	57	70 *	84	93	99	108
14–18 years old	54	60	64	70	83	97	106	112	121
Higher income NSLP participants	51	57	61	68	82	96	104	110	118
5–8 years old	44	48	50	53	61	69	74	77	82
9–13 years old	56	60	63	68	78	88	93	97	103
14–18 years old	51	62	68	79	101	125	138	146	160
Higher income nonparticipants	56	61	65	70	81	93	101	106	113
5–8 years old	45	51	55	61	75 **	89 **	98 *	105 *	114
9–13 years old	65	68	70	73	80	87	90	93	97
14–18 years old	56	63	67	74	88	103	112	119	129

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	48	52	54	59	67	76	81	85	90
5–8 years old	47	50	53	56	63	71	76	79	84
9–13 years old	54	57	59	63	69	75	79	81	85
14–18 years old	42	47	51	57	68	80	88	93	100
All NSLP participants	57	60	63	66	73	81	85	88	93
5–8 years old	59	60	61	62	64	66	67	68	69
9–13 years old	56	60	63	67	76	85	90	94	99
14–18 years old	56	61	64	69	78	89	95	99	105
Income-eligible NSLP participants	53	58	61	65	74	84	90	94	100
5–8 years old	48	51	53	56	62	68	71	73	77
9–13 years old	50	55	58	64	75	88	95	100	108
14–18 years old	61	66	69	74	84	94	99	104	109
Income-eligible nonparticipants	44	48	51	55	65	75	81	85	91
5–8 years old	49	52	54	58	64	72	76	79	83
9–13 years old	37	42	46	51	62 *	74	81	86	94
14–18 years old	47	51	54	58	68	78	84	87	94
Higher income NSLP participants	61	63	65	68	73	77	80	82	85
5–8 years old	67	67	67	67	67	68	68	68	68
9–13 years old	75	75	75	75	75	75	75	75	75
14–18 years old	42	49	53	60	74	87	94	99	107
Higher income nonparticipants	48	51	54	57	65	73	78	82	87
5–8 years old	39 ***	43 **	47 **	53	63	75	82	87	95 *
9–13 years old	67	67	67	67	67	67	67	67	67
14–18 years old	36	42	46	51	64	78	86	92	101

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.2. Total Fat (Percentage of Calorie Intake): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	33.1	(0.20)	924	32.5	(0.36)	664	32.8	(0.46)	1,039	33.3	(0.29)	237	31.9	(0.52)	688	33.5 *	(0.45)
Boys	1,355	32.9	(0.26)	477	31.7	(0.43)	333	32.0	(0.55)	512	32.9	(0.45)	129	31.3	(0.78)	335	33.7 *	(0.51)
Girls	1,371	33.4	(0.31)	447	33.3	(0.57)	331	33.7	(0.75)	527	33.7	(0.37)	108	32.5	(0.68)	353	33.3	(0.75)
5–8 years old	853	32.2	(0.28)	339	31.7	(0.37)	254	31.9	(0.50)	298	31.7	(0.56)	78	31.2	(0.60)	198	33.0 *	(0.68)
Boys	434	32.0	(0.39)	162	31.0	(0.56)	119	31.4	(0.69)	158	31.1	(0.68)	39	30.5	(0.75)	109	33.7 **	(0.82)
Girls	419	32.4	(0.41)	177	32.3	(0.48)	135	32.4	(0.74)	140	32.4	(0.89)	39	31.9	(0.96)	89	32.3	(1.10)
9–13 years old	1,071	33.1	(0.37)	388	32.6	(0.36)	285	32.7	(0.42)	380	33.1	(0.42)	94	32.5	(0.79)	276	33.6	(0.79)
Boys	515	33.1	(0.40)	200	32.2	(0.48)	143	32.7	(0.61)	181	32.6	(0.59)	51	31.7	(1.03)	122	34.0 *	(0.54)
Girls	556	33.2	(0.64)	188	33.0	(0.53)	142	32.7	(0.57)	199	33.7	(0.59)	43	33.3	(1.20)	154	33.2	(1.50)
14–18 years old	802	33.8	(0.36)	197	33.0	(0.85)	125	33.7	(1.11)	361	34.7	(0.54)	65	31.9	(1.09)	214	33.7	(0.80)
Boys	406	33.4	(0.51)	115	31.8	(0.99)	71	31.9	(1.25)	173	34.7	(0.94)	39	31.5	(1.77)	104	33.3	(1.11)
Girls	396	34.3	(0.51)	82	34.4	(1.41)	54	35.6	(1.87)	188	34.8	(0.47)	26	32.3	(1.24)	110	34.0	(1.17)
Percent of Children With Usual Intake Below the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	0.5 u	(0.33)	924	0.1 u	(0.22)	664	0.2 u	(0.24)	1,039	0.6 u	(0.62)	237	1.6 u	(1.20)	688	1.8 u	(1.06)
Boys	1,355	0.7 u	(0.43)	477	0.1 u	(0.43)	333	0.0	(0.07)	512	1.0 u	(1.15)	129	1.8 u	(1.51)	335	1.0 u	(0.96)
Girls	1,371	0.3 u	(0.49)	447	0.0	(0.05)	331	0.3 u	(0.48)	527	0.2 u	(0.40)	108	1.5 u	(1.89)	353	2.7 u	(1.93)
5–8 years old	853	1.2 u	(0.68)	339	0.1 u	(0.60)	254	0.6 u	(0.82)	298	0.5 u	(0.92)	78	1.0 u	(2.12)	198	4.8 u	(2.92)
Boys	434	2.1 u	(1.26)	162	0.2 u	(1.18)	119	0.0	(0.18)	158	0.9 u	(1.79)	39	2.0 u	(4.15)	109	3.5 u	(2.54)
Girls	419	0.3 u	(0.45)	177	0.0	(0.00)	135	1.2 u	(1.67)	140	0.0	(0.24)	39	0.0	(0.00)	89	6.1 u	(5.34)
9–13 years old	1,071	0.2 u	(0.38)	388	0.1 u	(0.41)	285	0.0 u	(0.19)	380	1.3 u	(1.59)	94	1.8 u	(1.38)	276	0.0 u	(0.10)
Boys	515	0.4 u	(0.72)	200	0.1 u	(0.80)	143	0.0	(0.13)	181	2.0 u	(2.93)	51	3.5 u	(2.70)	122	0.0 u	(0.18)
Girls	556	0.0 u	(0.16)	188	0.0	(0.14)	142	0.0 u	(0.37)	199	0.7 u	(1.10)	43	0.0	(0.00)	154	0.0	(0.06)
14–18 years old	802	0.3 u	(0.62)	197	0.0	(0.01)	125	0.0	(0.05)	361	0.0 u	(0.20)	65	1.9 u	(2.51)	214	1.4 u	(1.86)
Boys	406	0.0	(0.05)	115	0.0	(0.01)	71	0.0	(0.00)	173	0.0	(0.36)	39	0.0	(0.64)	104	0.1 u	(1.75)
Girls	396	0.5 u	(1.28)	82	0.0	(0.00)	54	0.0	(0.09)	188	0.0 u	(0.18)	26	4.0 u	(5.12)	110	2.8 u	(3.34)

Subgroup	AI School Children			AI NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Percent of Children With Usual Intake Within the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	77.0	(4.59)	924	95.4	(14.25)	664	75.1	(12.99)	1,039	71.4	(9.10)	237	88.6	(6.43)	688	69.7 *	(5.41)
Boys	1,355	80.6	(6.02)	477	94.4	(4.44)	333	98.4	(5.20)	512	72.3	(16.74)	129	89.2	(8.65)	335	65.8	(8.46)
Girls	1,371	73.2	(6.97)	447	96.4	(28.82)	331	50.7 u	(26.05)	527	70.5	(6.25)	108	87.9	(9.56)	353	73.8	(6.66)
5–8 years old	853	80.9	(5.15)	339	98.1	(3.53)	254	89.0	(4.91)	298	96.3	(7.98)	78	94.8	(5.41)	198	61.2 ***	(6.30)
Boys	434	78.3	(4.29)	162	96.2	(6.39)	119	100.0	(5.18)	158	92.8	(8.47)	39	89.9	(10.60)	109	57.2 *	(9.47)
Girls	419	83.6	(9.52)	177	100.0	(2.73)	135	77.4	(8.46)	140	100.0	(13.71)	39	100.0	(0.00)	89	65.3 ***	(8.25)
9–13 years old	1,071	78.3	(8.90)	388	88.4	(9.04)	285	89.1	(9.46)	380	68.7	(6.86)	94	88.5	(8.52)	276	82.3	(11.24)
Boys	515	74.3	(5.76)	200	87.0	(11.27)	143	95.3	(14.16)	181	72.5	(7.05)	51	77.4	(10.87)	122	65.5	(17.46)
Girls	556	82.4	(17.20)	188	89.9	(14.26)	142	82.6	(12.46)	199	64.8	(11.94)	43	100.0	(13.21)	154	100.0	(13.97)
14–18 years old	802	72.7	(8.19)	197	100.0 u	(37.48)	125	51.3 u	(33.76)	361	55.4 u	(22.95)	65	84.0	(14.83)	214	64.1	(8.77)
Boys	406	88.2	(14.95)	115	100.0	(2.44)	71	100.0	(0.00)	173	56.8 u	(44.21)	39	100.0	(19.35)	104	72.5	(13.95)
Girls	396	56.4	(5.86)	82	100.0 u	(76.95)	54	0.0	(69.36)	188	53.9	(7.02)	26	67.2 u	(22.63)	110	55.1	(10.39)
Percent of Children With Usual Intake Above the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	22.5	(4.55)	924	4.6 u	(14.23)	664	24.7 u	(12.99)	1,039	28.0 u	(9.03)	237	9.8 u	(5.94)	688	28.4 *	(5.41)
Boys	1,355	18.7 u	(5.96)	477	5.5 u	(4.22)	333	1.6 u	(5.16)	512	26.7 u	(16.64)	129	9.0 u	(8.18)	335	33.2 *	(8.39)
Girls	1,371	26.6	(6.91)	447	3.6 u	(28.82)	331	48.9 u	(26.04)	527	29.2	(6.16)	108	10.6 u	(8.63)	353	23.4	(6.75)
5–8 years old	853	17.9	(4.93)	339	1.8 u	(3.11)	254	10.5 u	(4.74)	298	3.2 u	(7.60)	78	4.1 u	(3.93)	198	34.0 ***	(5.85)
Boys	434	19.6	(3.89)	162	3.5 u	(5.50)	119	0.0 u	(5.03)	158	6.2 u	(7.28)	39	8.1 u	(7.69)	109	39.3 **	(8.72)
Girls	419	16.1 u	(9.22)	177	0.0	(2.73)	135	21.3 u	(8.14)	140	0.0	(13.55)	39	0.0	(0.00)	89	28.5 ***	(7.75)
9–13 years old	1,071	21.5 u	(8.85)	388	11.5 u	(8.88)	285	10.9 u	(9.38)	380	30.0	(6.40)	94	9.7 u	(8.30)	276	17.7 u	(11.23)
Boys	515	25.3	(5.52)	200	12.9 u	(10.85)	143	4.7 u	(14.08)	181	25.5	(5.67)	51	19.1 u	(10.22)	122	34.5 u	(17.45)
Girls	556	17.6 u	(17.17)	188	10.1 u	(14.20)	142	17.4 u	(12.29)	199	34.6 u	(11.68)	43	0.0	(13.21)	154	0.0	(13.96)
14–18 years old	802	27.0 u	(8.14)	197	0.0	(37.48)	125	48.7 u	(33.77)	361	44.6 u	(22.95)	65	14.1 u	(13.65)	214	34.5	(8.94)
Boys	406	11.8 u	(14.92)	115	0.0	(2.43)	71	0.0	(0.00)	173	43.2 u	(44.22)	39	0.0	(18.96)	104	27.4 u	(13.92)
Girls	396	43.1	(5.69)	82	0.0	(76.95)	54	100.0 u	(69.39)	188	46.1	(7.03)	26	28.9 u	(19.67)	110	42.1	(11.05)

See notes at end of table.

Table E.2a. Total Fat (Percentage of Calorie Intake): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	28.8	29.7	30.3	31.2	32.9	34.6	35.5	36.1	37.0
5–8 years old	26.4	27.6	28.4	29.7	32.0	34.4	35.6	36.5	37.8
9–13 years old	28.3	29.3	30.0	31.1	33.1	35.0	36.1	36.8	37.8
14–18 years old	31.1	31.6	31.9	32.5	33.4	34.3	34.8	35.1	35.6
All NSLP participants	29.3	29.9	30.2	30.7	31.7	32.7	33.3	33.6	34.1
5–8 years old	27.4	28.2	28.7	29.5	31.0	32.5	33.3	33.8	34.6
9–13 years old	28.3	29.2	29.7	30.6	32.2	33.9	34.8	35.3	36.2
14–18 years old	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8	31.8
Income-eligible NSLP participants	30.8	31.0	31.2	31.5	32.0	32.6	32.8	33.0	33.3
5–8 years old	29.8	30.1	30.4	30.8	31.4	32.1	32.5	32.7	33.1
9–13 years old	30.4	30.9	31.2	31.7	32.7	33.6	34.1	34.4	34.9
14–18 years old	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9
Income-eligible nonparticipants	28.5	29.5	30.2	31.2	33.0	34.8	35.7	36.3	37.3
5–8 years old	26.8	27.7	28.3	29.3	31.1	32.8	33.7	34.4	35.3
9–13 years old	26.6	27.9	28.9	30.2	32.7	35.1	36.3	37.1	38.5
14–18 years old	31.6	32.3	32.8	33.5	34.7	35.9	36.6	37.0	37.7
Higher income NSLP participants	27.9	28.6	29.1	29.8	31.2	32.7	33.5	34.0	34.9
5–8 years old	26.0	26.7	27.3	28.3	30.2	32.5	33.7	34.5	36.1
9–13 years old	25.6	26.9	27.9	29.3	31.8	34.2	35.6	36.4	37.7
14–18 years old	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
Higher income nonparticipants	28.3	29.5	30.4	31.5	33.7	35.8	37.0	37.8	39.0
5–8 years old	25.8	27.6	28.8	30.7	33.8 *	36.9	38.5	39.6	41.2
9–13 years old	30.0	30.9	31.6	32.5	34.0	35.7	36.6	37.2	38.0
14–18 years old	28.6	29.6	30.3	31.3	33.2	35.2	36.3	37.1	38.3

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	28.8	29.8	30.5	31.6	33.4	35.3	36.2	36.9	37.9
5–8 years old	28.0	28.9	29.6	30.6	32.4	34.2	35.1	35.8	36.7
9–13 years old	30.1	30.8	31.3	32.0	33.3	34.5	35.2	35.6	36.3
14–18 years old	28.3	29.6	30.5	31.9	34.4	36.8	38.1	39.0	40.3
All NSLP participants	32.3	32.5	32.7	32.9	33.3	33.7	34.0	34.1	34.3
5–8 years old	32.2	32.2	32.2	32.3	32.3	32.4	32.4	32.5	32.5
9–13 years old	30.3	30.9	31.3	31.9	33.0	34.1	34.6	35.0	35.6
14–18 years old	34.3	34.3	34.4	34.4	34.4	34.4	34.4	34.4	34.5
Income-eligible NSLP participants	30.8	31.4	31.9	32.5	33.7	34.9	35.5	36.0	36.6
5–8 years old	27.0	28.1	28.9	30.2	32.3	34.6	35.8	36.6	37.8
9–13 years old	28.8	29.6	30.3	31.2	32.7	34.3	35.2	35.8	36.7
14–18 years old	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6	35.6
Income-eligible nonparticipants	30.0	30.8	31.3	32.2	33.7	35.2	36.1	36.6	37.5
5–8 years old	32.3	32.3	32.3	32.3	32.4	32.4	32.4	32.4	32.4
9–13 years old	28.1	29.3	30.2	31.4	33.7	36.0	37.1	37.9	39.1
14–18 years old	30.0	30.9	31.7	32.8	34.7	36.7	37.9	38.6	39.7
Higher income NSLP participants	30.2	30.8	31.1	31.6	32.6	33.7	34.0	34.3	34.6
5–8 years old	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9	31.9
9–13 years old	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3
14–18 years old	25.8	27.7	28.3	29.7	32.4	35.3	36.3	37.1	37.9
Higher income nonparticipants	28.2	29.4	30.1	31.3	33.3	35.3	36.4	37.1	38.2
5–8 years old	24.5 *	26.2	27.2	29.0	32.3	35.5	37.4 **	38.6 **	40.4 **
9–13 years old	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2	33.2
14–18 years old	26.3	28.1	29.4	31.1	34.2	37.1	38.7	39.8	41.4

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Estimates are based on the day 1 dietary recall. The acceptable macronutrient distribution range (AMDR) is the range of intakes for macronutrients, as a percentage of calories, associated with reduced risk of chronic disease while providing recommended intakes of other essential nutrients. The AMDR for fat is 25–35 percent of calories for children 4–18 years old. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.3. Protein (Grams): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
All children 5–18 years old	2,726	71.4	(0.96)	924	79.8	(1.99)	664	77.7	(1.58)	1,039	66.2 ***	(1.11)	237	84.9	(4.00)	688	68.7 ***	(1.56)
Boys	1,355	79.6	(1.64)	477	88.9	(3.65)	333	85.0	(2.45)	512	71.4 ***	(1.69)	129	97.6	(7.06)	335	77.9 **	(2.44)
Girls	1,371	62.7	(0.97)	447	70.2	(1.39)	331	70.0	(1.95)	527	60.8 ***	(1.45)	108	71.7	(3.53)	353	59.2 **	(1.91)
5–8 years old	853	65.0	(1.31)	339	67.8	(2.48)	254	69.9	(2.36)	298	62.0 **	(1.75)	78	64.5	(3.55)	198	64.8	(2.64)
Boys	434	69.6	(2.15)	162	73.8	(4.53)	119	78.6	(3.81)	158	62.0 ***	(2.21)	39	66.6	(6.33)	109	71.9	(3.74)
Girls	419	60.1	(1.45)	177	61.5	(1.82)	135	60.8	(2.73)	140	62.0	(2.72)	39	62.2	(2.98)	89	57.4	(3.72)
9–13 years old	1,071	71.7	(1.28)	388	81.7	(2.49)	285	80.5	(2.72)	380	64.9 ***	(1.64)	94	88.7	(6.17)	276	66.7 **	(2.91)
Boys	515	77.9	(1.91)	200	87.3	(4.12)	143	85.7	(3.78)	181	70.2 ***	(2.53)	51	97.7	(9.18)	122	72.3 *	(4.58)
Girls	556	65.3	(1.71)	188	75.8	(2.71)	142	75.1	(3.90)	199	59.3 ***	(2.08)	43	79.3	(8.19)	154	60.8 *	(3.52)
14–18 years old	802	75.8	(2.08)	197	87.1	(4.45)	125	80.8	(2.88)	361	70.7 **	(2.22)	65	96.6	(8.68)	214	73.7 *	(2.49)
Boys	406	88.6	(3.69)	115	101.8	(8.37)	71	89.0	(4.76)	173	79.5	(3.49)	39	120.5	(16.24)	104	87.6	(4.08)
Girls	396	62.3	(1.74)	82	71.5	(2.37)	54	72.1	(3.14)	188	61.4 **	(2.69)	26	71.5	(5.00)	110	58.9 *	(2.77)

See notes at end of table.

Table E.3a. Protein (Grams): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	50.5	55.9	59.8	65.8	78.1	91.7	99.7	105.3	113.9
5–8 years old	49.1	53.0	55.8	60.1	68.9	78.1	83.6	87.3	93.1
9–13 years old	52.4	57.3	60.7	65.9	76.8	88.5	95.3	100.1	107.4
14–18 years old	49.9	56.7	61.8	69.9	86.3	105.0	115.8	123.5	135.6
All NSLP participants	60.3	65.8	69.3	75.2	87.3	100.9	108.8	114.2	123.3
5–8 years old	68.7	69.8	70.6	71.7	73.8	75.9	77.1	77.8	79.1
9–13 years old	57.6	63.7	67.7	73.9	86.4	99.5	107.1	112.1	120.6
14–18 years old	56.7	64.8	70.0	79.1	98.4	120.8	134.1	143.2	158.8
Income-eligible NSLP participants	61.8	66.5	69.5	74.5	84.2	94.6	100.6	104.7	110.8
5–8 years old	59.9	63.8	66.4	70.4	78.0	86.3	91.0	94.4	99.3
9–13 years old	62.9	67.6	70.7	75.6	85.1	95.2	100.9	104.6	110.6
14–18 years old	62.1	67.3	70.7	76.5	88.0	100.3	107.4	112.4	119.4
Income-eligible nonparticipants	43.4 *	48.6 **	52.2 **	57.9 ***	69.9 ***	83.0 *	90.8	96.3	105.2
5–8 years old	42.8	46.3	48.6	52.7	60.9 **	70.1 *	75.4	79.1	85.3
9–13 years old	44.4	49.1	52.6	57.8	68.7 **	80.7	88.0	93.1	101.4
14–18 years old	42.8	49.8	54.4	61.9	77.7	94.9	105.1	112.2	123.6
Higher income NSLP participants	64.6	71.0	75.1	81.9	96.1	111.5	120.4	126.1	136.2
5–8 years old	66.3	66.4	66.4	66.5	66.6	66.8	66.8	66.9	67.0 u
9–13 years old	64.8	71.0	74.9	81.4	96.1	111.4	120.7	126.8	137.7
14–18 years old	63.1	74.4	81.9	93.8	118.2	145.0	160.1	169.6	186.3
Higher income nonparticipants	55.1	59.5	62.5	67.3	76.8	87.2	93.5	97.9	104.3
5–8 years old	47.9	52.4	55.5	60.6	70.6	81.8	88.6	93.2	100.0
9–13 years old	54.4	58.1	60.5	64.2	71.6	79.6 *	84.3	87.7	92.3
14–18 years old	61.0	66.1	69.7	75.1	86.3	98.4	105.8	111.2	119.0

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	44.9	48.4	50.9	54.6	62.1	70.1	74.7	77.9	82.7
5–8 years old	45.3	48.3	50.3	53.5	59.6	66.1	69.8	72.3	76.3
9–13 years old	47.3	50.9	53.3	57.2	64.7	72.7	77.3	80.6	85.4
14–18 years old	42.2	46.2	49.0	53.1	61.6	70.7	76.0	79.6	85.0
All NSLP participants	49.2	53.4	56.2	60.9	69.6	78.9	84.4	87.9	93.2
5–8 years old	48.1	50.9	52.7	55.5	61.1	67.0	70.3	72.7	76.1
9–13 years old	52.9	57.3	60.5	65.4	75.0	85.3	91.3	95.4	101.2
14–18 years old	46.4	51.6	54.8	60.6	70.8	81.9	88.3	92.2	98.5
Income-eligible NSLP participants	48.2	52.7	55.7	60.4	69.5	79.0	84.5	88.4	94.0
5–8 years old	48.1	50.7	52.5	55.2	60.5	66.1	69.2	71.5	74.7
9–13 years old	50.4	55.5	58.8	64.2	74.5	85.2	91.4	95.8	102.2
14–18 years old	46.0	51.5	55.1	60.8	71.5	82.9	89.3	94.1	100.5
Income-eligible nonparticipants	43.6	46.9	49.1	52.8	60.1 ***	68.0 *	72.6	75.7	80.8
5–8 years old	50.1	52.6	54.2	56.6	61.8	66.9	69.8	71.8	74.9
9–13 years old	40.9	44.5	46.9	50.7	58.5 **	67.0 *	71.9	75.4	80.9
14–18 years old	41.2	44.9	47.5	51.8	60.4	69.7	75.4	79.0	85.3
Higher income NSLP participants	56.9	60.3	62.1	65.5	71.8	77.8	81.3	83.7	87.5
5–8 years old	44.4	48.3	50.6	54.2	61.8	69.6	74.2	77.6	82.2
9–13 years old	79.1 u	79.2	79.2	79.2	79.3	79.4	79.4 u	79.5 u	79.5 u
14–18 years old	45.0	51.4	54.4	60.8	72.0	82.4	88.4	92.3	99.1
Higher income nonparticipants	46.6	49.0	50.9	53.5	58.8 **	64.4	67.6	69.8	73.3
5–8 years old	38.2	41.7	44.6	48.6	56.6	65.3	70.6	74.0	79.7
9–13 years old	55.0	56.3	57.1	58.3	60.7	63.2	64.6	65.5	67.0
14–18 years old	44.7	47.6	49.6	52.6	58.5	64.9	68.3	70.8	74.6

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.4. Protein (Percentage of Calorie Intake): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
All children 5–18 years old	2,726	14.7	(0.13)	924	15.3	(0.19)	664	15.0	(0.23)	1,039	14.6	(0.18)	237	15.9	(0.42)	688	14.3 ***	(0.27)
Boys	1,355	15.0	(0.16)	477	15.8	(0.30)	333	15.5	(0.36)	512	14.7	(0.26)	129	16.7	(0.50)	335	14.5 ***	(0.39)
Girls	1,371	14.4	(0.19)	447	14.7	(0.24)	331	14.6	(0.30)	527	14.5	(0.26)	108	15.1	(0.67)	353	14.0	(0.37)
5–8 years old	853	14.3	(0.17)	339	14.9	(0.30)	254	15.1	(0.36)	298	14.0 *	(0.29)	78	14.4	(0.49)	198	14.1	(0.39)
Boys	434	14.6	(0.23)	162	15.3	(0.53)	119	15.5	(0.64)	158	13.8 *	(0.34)	39	15.0	(0.84)	109	14.6	(0.61)
Girls	419	14.1	(0.25)	177	14.4	(0.25)	135	14.7	(0.31)	140	14.3	(0.49)	39	13.7	(0.47)	89	13.6	(0.46)
9–13 years old	1,071	14.6	(0.19)	388	15.5	(0.24)	285	15.1	(0.28)	380	14.6	(0.32)	94	16.9	(0.48)	276	13.7 ***	(0.48)
Boys	515	14.8	(0.20)	200	15.9	(0.41)	143	15.4	(0.41)	181	14.5	(0.43)	51	17.8	(0.79)	122	13.8 ***	(0.67)
Girls	556	14.3	(0.34)	188	15.0	(0.26)	142	14.8	(0.36)	199	14.6	(0.47)	43	15.9	(0.51)	154	13.5 **	(0.68)
14–18 years old	802	15.1	(0.25)	197	15.4	(0.41)	125	14.9	(0.51)	361	15.0	(0.32)	65	16.1	(0.96)	214	15.0	(0.49)
Boys	406	15.5	(0.35)	115	16.1	(0.58)	71	15.6	(0.74)	173	15.5	(0.50)	39	16.8	(0.92)	104	15.2	(0.70)
Girls	396	14.6	(0.36)	82	14.7	(0.58)	54	14.3	(0.71)	188	14.4	(0.39)	26	15.4	(1.72)	110	14.8	(0.68)
Percent of Children With Usual Intake Below the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	0.5 u	(0.23)	924	0.1 u	(0.20)	664	0.2 u	(0.46)	1,039	0.6 u	(0.48)	237	0.3 u	(0.51)	688	2.1 u	(1.10)
Boys	1,355	0.9 u	(0.43)	477	0.2 u	(0.38)	333	0.4 u	(0.89)	512	0.9 u	(0.85)	129	0.1 u	(0.33)	335	2.6 u	(1.55)
Girls	1,371	0.1 u	(0.18)	447	0.0 u	(0.09)	331	0.0 u	(0.13)	527	0.2 u	(0.41)	108	0.4 u	(0.99)	353	1.5 u	(1.55)
5–8 years old	853	0.2 u	(0.32)	339	0.0 u	(0.20)	254	0.1 u	(0.38)	298	0.0 u	(0.15)	78	0.0	(0.24)	198	3.1 u	(2.48)
Boys	434	0.2 u	(0.37)	162	0.0	(0.33)	119	0.2 u	(0.67)	158	0.1 u	(0.22)	39	0.0	(0.16)	109	0.9 u	(1.70)
Girls	419	0.2 u	(0.53)	177	0.0 u	(0.23)	135	0.1 u	(0.30)	140	0.0	(0.20)	39	0.0	(0.46)	89	5.3 u	(4.74)
9–13 years old	1,071	0.9 u	(0.47)	388	0.1 u	(0.12)	285	0.1 u	(0.19)	380	1.2 u	(1.14)	94	0.0	(0.00)	276	3.3 u	(2.31)
Boys	515	1.8 u	(0.92)	200	0.2 u	(0.23)	143	0.2 u	(0.34)	181	2.3 u	(2.16)	51	0.0	(0.00)	122	6.3 u	(4.10)
Girls	556	0.0 u	(0.14)	188	0.0	(0.00)	142	0.0	(0.17)	199	0.1 u	(0.60)	43	0.0	(0.00)	154	0.1 u	(1.99)
14–18 years old	802	0.3 u	(0.37)	197	0.2 u	(0.51)	125	0.4 u	(1.19)	361	0.3 u	(0.69)	65	0.7 u	(1.37)	214	0.2 u	(0.70)
Boys	406	0.5 u	(0.69)	115	0.4 u	(0.98)	71	0.7 u	(2.32)	173	0.3 u	(1.00)	39	0.2 u	(0.88)	104	0.4 u	(0.81)
Girls	396	0.0 u	(0.22)	82	0.0	(0.18)	54	0.0	(0.20)	188	0.4 u	(0.95)	26	1.2 u	(2.66)	110	0.0	(1.15)

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Percent of Children With Usual Intake Within the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	99.5	(0.24)	924	99.9	(0.21)	664	99.8	(0.46)	1,039	99.4	(0.48)	237	99.7	(0.52)	688	97.9	(1.10)
Boys	1,355	99.1	(0.43)	477	99.8	(0.39)	333	99.6	(0.89)	512	99.1	(0.85)	129	99.9	(0.34)	335	97.4	(1.55)
Girls	1,371	99.9	(0.18)	447	100.0	(0.09)	331	100.0	(0.13)	527	99.8	(0.41)	108	99.6	(1.01)	353	98.5	(1.55)
5–8 years old	853	99.8	(0.32)	339	100.0	(0.20)	254	99.9	(0.38)	298	100.0	(0.15)	78	100.0	(0.24)	198	96.9	(2.48)
Boys	434	99.8	(0.37)	162	100.0	(0.33)	119	99.8	(0.67)	158	99.9	(0.22)	39	100.0	(0.16)	109	99.1	(1.71)
Girls	419	99.8	(0.53)	177	100.0	(0.23)	135	99.9	(0.30)	140	100.0	(0.20)	39	100.0	(0.46)	89	94.7	(4.74)
9–13 years old	1,071	99.1	(0.48)	388	99.9	(0.12)	285	99.9	(0.19)	380	98.8	(1.14)	94	100.0	(0.03)	276	96.7	(2.31)
Boys	515	98.2	(0.92)	200	99.8	(0.23)	143	99.8	(0.34)	181	97.7	(2.16)	51	100.0	(0.05)	122	93.7	(4.11)
Girls	556	100.0	(0.14)	188	100.0	(0.00)	142	100.0	(0.17)	199	99.9	(0.60)	43	100.0	(0.00)	154	99.9	(1.99)
14–18 years old	802	99.7	(0.37)	197	99.8	(0.52)	125	99.6	(1.20)	361	99.7	(0.69)	65	99.3	(1.41)	214	99.8	(0.70)
Boys	406	99.5	(0.70)	115	99.6	(1.01)	71	99.3	(2.32)	173	99.7	(1.00)	39	99.7	(0.90)	104	99.6	(0.82)
Girls	396	100.0	(0.22)	82	100.0	(0.18)	54	100.0	(0.20)	188	99.6	(0.95)	26	98.8	(2.73)	110	100.0	(1.15)
Percent of Children With Usual Intake Above the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	0.0 u	(0.00)	924	0.0	(0.01)	664	0.0	(0.00)	1,039	0.0	(0.00)	237	0.0 u	(0.03)	688	0.0	(0.01)
Boys	1,355	0.0 u	(0.00)	477	0.0	(0.01)	333	0.0	(0.00)	512	0.0	(0.00)	129	0.0 u	(0.04)	335	0.0	(0.02)
Girls	1,371	0.0	(0.00)	447	0.0	(0.00)	331	0.0	(0.00)	527	0.0	(0.00)	108	0.0	(0.05)	353	0.0	(0.00)
5–8 years old	853	0.0	(0.00)	339	0.0	(0.00)	254	0.0	(0.00)	298	0.0	(0.00)	78	0.0	(0.00)	198	0.0	(0.01)
Boys	434	0.0	(0.00)	162	0.0	(0.00)	119	0.0	(0.00)	158	0.0	(0.00)	39	0.0	(0.00)	109	0.0	(0.02)
Girls	419	0.0	(0.00)	177	0.0	(0.00)	135	0.0	(0.00)	140	0.0	(0.00)	39	0.0	(0.00)	89	0.0	(0.00)
9–13 years old	1,071	0.0 u	(0.00)	388	0.0	(0.00)	285	0.0	(0.00)	380	0.0	(0.00)	94	0.0	(0.03)	276	0.0	(0.02)
Boys	515	0.0 u	(0.01)	200	0.0	(0.00)	143	0.0	(0.00)	181	0.0	(0.00)	51	0.0	(0.05)	122	0.0	(0.04)
Girls	556	0.0	(0.00)	188	0.0	(0.00)	142	0.0	(0.00)	199	0.0	(0.00)	43	0.0	(0.00)	154	0.0	(0.00)
14–18 years old	802	0.0	(0.00)	197	0.0	(0.02)	125	0.0	(0.00)	361	0.0	(0.01)	65	0.0 u	(0.07)	214	0.0	(0.01)
Boys	406	0.0	(0.01)	115	0.0	(0.04)	71	0.0	(0.01)	173	0.0	(0.01)	39	0.0 u	(0.08)	104	0.0	(0.02)
Girls	396	0.0	(0.00)	82	0.0	(0.00)	54	0.0	(0.00)	188	0.0	(0.00)	26	0.0	(0.12)	110	0.0	(0.00)

See notes at end of table.

Table E.4a. Protein (Percentage of Calorie Intake): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	11.4	12.1	12.6	13.3	14.8	16.5	17.5	18.2	19.3
5–8 years old	11.7	12.3	12.7	13.3	14.5	15.8	16.5	17.0	17.8
9–13 years old	10.9	11.6	12.2	13.0	14.6	16.5	17.6	18.3	19.5
14–18 years old	11.6	12.3	12.8	13.7	15.3	17.1	18.2	19.0	20.1
All NSLP participants	12.4	13.1	13.5	14.2	15.7	17.3	18.2	18.8	19.8
5–8 years old	13.3	13.7	14.0	14.4	15.3	16.2	16.7	17.1	17.7
9–13 years old	12.3	13.0	13.5	14.3	15.8	17.4	18.4	19.1	20.2
14–18 years old	11.8	12.6	13.2	14.0	15.9	17.9	19.0	19.8	21.1
Income-eligible NSLP participants	11.9	12.6	13.1	13.9	15.4	17.0	17.9	18.5	19.5
5–8 years old	12.1	12.8	13.2	14.0	15.3	16.8	17.7	18.4	19.3
9–13 years old	12.1	12.7	13.2	13.9	15.3	16.8	17.7	18.3	19.3
14–18 years old	11.6	12.4	12.9	13.8	15.5	17.2	18.2	18.9	19.9
Income-eligible nonparticipants	11.4	12.1	12.5	13.2	14.5	16.0	16.9	17.5	18.4
5–8 years old	11.7	12.1	12.4	12.9	13.7	14.6	15.1	15.4	16.0
9–13 years old	10.6	11.4	11.9	12.7	14.3	16.1	17.1	17.9	19.0
14–18 years old	12.0	12.7	13.2	13.9	15.4	17.0	18.0	18.6	19.7
Higher income NSLP participants	13.9	14.4	14.8	15.4	16.6	17.8	18.6	19.0	19.9
5–8 years old	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
9–13 years old	14.7	15.3	15.7	16.4	17.7	19.1	20.0	20.5	21.4
14–18 years old	12.3	13.2	13.8	14.7	16.6	18.7	19.9	20.7	22.1
Higher income nonparticipants	10.9 *	11.6 **	12.0 **	12.8 **	14.3 **	16.0	17.1	17.8	18.9
5–8 years old	11.2	11.8	12.3	13.0	14.4	16.0	16.9	17.5	18.4
9–13 years old	9.8 ***	10.5 ***	11.1 ***	11.9 ***	13.6 ***	15.5 *	16.7	17.6	18.8
14–18 years old	11.7	12.3	12.8	13.5	15.0	16.6	17.5	18.2	19.2

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	12.2	12.6	12.9	13.4	14.3	15.3	15.8	16.2	16.8
5–8 years old	11.6	12.1	12.4	13.0	14.0	15.1	15.8	16.2	16.9
9–13 years old	12.3	12.7	13.0	13.5	14.3	15.2	15.7	16.1	16.6
14–18 years old	12.5	12.9	13.2	13.7	14.6	15.5	16.0	16.4	16.9
All NSLP participants	13.2	13.5	13.7	14.1	14.7	15.4	15.7	16.0	16.3
5–8 years old	12.1	12.6	12.9	13.4	14.4	15.4	15.9	16.4	16.9
9–13 years old	14.2	14.4	14.5	14.7	15.0	15.3	15.5	15.6	15.8
14–18 years old	13.0	13.4	13.6	14.0	14.7	15.4	15.8	16.1	16.5
Income-eligible NSLP participants	13.2	13.5	13.7	14.0	14.5	15.1	15.5	15.7	16.1
5–8 years old	12.2	12.7	13.0	13.6	14.6	15.8	16.4	16.9	17.6
9–13 years old	13.0	13.4	13.6	14.0	14.8	15.5	16.0	16.3	16.7
14–18 years old	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3
Income-eligible nonparticipants	12.1	12.6	12.9	13.4	14.4	15.5	16.1	16.5	17.2
5–8 years old	13.0	13.3	13.5	13.8	14.3	14.9	15.2	15.4	15.7
9–13 years old	12.0	12.5	12.9	13.5	14.6	15.7	16.4	16.9	17.6
14–18 years old	11.5	12.0	12.4	13.1	14.3	15.7	16.5	17.0	17.8
Higher income NSLP participants	13.2	13.6	13.8	14.3	15.1	15.9	16.4	16.7	17.3
5–8 years old	12.2	12.6	12.8	13.1	13.8	14.4	14.7	15.0	15.3
9–13 years old	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9	15.9
14–18 years old	11.4	12.3	12.7	13.6	15.3	17.1	18.1	18.8	20.2

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Higher income nonparticipants	11.8	12.2	12.6	13.0	13.9	14.9	15.5	15.9	16.5
5–8 years old	10.0	10.6	11.1	11.9	13.4	15.0	16.1	16.7	17.9
9–13 years old	11.7	12.1 *	12.3 *	12.7 *	13.5 *	14.3	14.8	15.1	15.6
14–18 years old	13.3	13.6	13.8	14.1	14.7	15.4	15.7	16.0	16.3

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Estimates are based on the day 1 dietary recall. The acceptable macronutrient distribution range (AMDR) is the range of intakes for macronutrients, as a percentage of calories, associated with reduced risk of chronic disease while providing recommended intakes of other essential nutrients. The AMDR for protein is 10–30 percent of calories for children 4–18 years old. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.5. Protein (Grams Per Kilogram Body Weight): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	1.80	(0.017)	924	2.00	(0.034)	664	1.99	(0.034)	1,039	1.67 ***	(0.022)	237	2.05	(0.061)	688	1.74 **	(0.031)
Boys	1,355	1.94	(0.029)	477	2.14	(0.059)	333	2.15	(0.054)	512	1.74 ***	(0.034)	129	2.21	(0.095)	335	1.90 **	(0.045)
Girls	1,371	1.66	(0.019)	447	1.84	(0.034)	331	1.82	(0.041)	527	1.60 ***	(0.027)	108	1.88	(0.075)	353	1.58 **	(0.042)
5–8 years old	853	2.61	(0.041)	339	2.75	(0.077)	254	2.84	(0.076)	298	2.49 ***	(0.051)	78	2.61	(0.108)	198	2.59	(0.076)
Boys	434	2.74	(0.069)	162	2.92	(0.137)	119	3.10	(0.122)	158	2.46 ***	(0.076)	39	2.65	(0.171)	109	2.81	(0.112)
Girls	419	2.48	(0.041)	177	2.58	(0.066)	135	2.57	(0.089)	140	2.53	(0.067)	39	2.56	(0.128)	89	2.36	(0.101)
9–13 years old	1,071	1.78	(0.028)	388	2.03	(0.058)	285	2.02	(0.064)	380	1.57 ***	(0.038)	94	2.15	(0.121)	276	1.67 **	(0.055)
Boys	515	1.94	(0.042)	200	2.17	(0.091)	143	2.16	(0.099)	181	1.71 ***	(0.062)	51	2.34	(0.176)	122	1.82 **	(0.078)
Girls	556	1.61	(0.037)	188	1.88	(0.071)	142	1.88	(0.081)	199	1.43 ***	(0.043)	43	1.95	(0.165)	154	1.52 *	(0.077)
14–18 years old	802	1.22	(0.024)	197	1.40	(0.047)	125	1.32	(0.039)	361	1.15 ***	(0.027)	65	1.53	(0.086)	214	1.18 **	(0.033)
Boys	406	1.34	(0.041)	115	1.55	(0.083)	71	1.42	(0.064)	173	1.24 *	(0.041)	39	1.76	(0.148)	104	1.29 **	(0.050)
Girls	396	1.09	(0.022)	82	1.25	(0.039)	54	1.21	(0.041)	188	1.06 **	(0.033)	26	1.29	(0.082)	110	1.05 **	(0.044)
Percent of Children With Usual Intake Greater Than Estimated Average Requirements																		
All children 5–18 years old	2,726	97.2	(0.48)	924	98.4	(0.61)	664	98.2	(0.82)	1,039	96.1	(0.81)	237	98.8	(0.57)	688	98.9	(1.09)
Boys	1,355	98.0	(0.55)	477	98.9	(0.47)	333	98.8	(0.50)	512	97.2	(1.03)	129	99.8	(0.33)	335	99.3	(0.95)
Girls	1,371	96.4	(0.79)	447	97.9	(1.15)	331	97.6	(1.59)	527	94.9	(1.27)	108	97.8	(1.10)	353	98.4	(1.99)
5–8 years old	853	100.0	(0.01)	339	100.0	(0.00)	254	100.0	(0.01)	298	100.0	(0.02)	78	100.0	(0.03)	198	100.0	(0.06)
Boys	434	100.0	(0.00)	162	100.0	(0.00)	119	100.0	(0.02)	158	100.0	(0.02)	39	100.0	(0.04)	109	100.0	(0.00)
Girls	419	100.0	(0.01)	177	100.0	(0.00)	135	100.0	(0.00)	140	100.0	(0.03)	39	100.0	(0.05)	89	99.9	(0.11)
9–13 years old	1,071	98.4	(0.48)	388	99.0	(0.46)	285	98.7	(0.67)	380	97.1	(0.89)	94	99.9	(0.13)	276	99.4	(0.84)
Boys	515	99.0	(0.55)	200	98.8	(0.70)	143	99.0	(0.74)	181	99.1	(0.85)	51	99.8	(0.22)	122	99.6	(1.07)
Girls	556	97.7	(0.80)	188	99.1	(0.59)	142	98.5	(1.13)	199	95.0	(1.58)	43	100.0	(0.12)	154	99.1	(1.32)
14–18 years old	802	94.1	(1.21)	197	96.7	(1.59)	125	96.3	(2.11)	361	92.1	(2.03)	65	96.9	(1.52)	214	97.5	(2.83)
Boys	406	95.7	(1.40)	115	98.1	(1.07)	71	97.6	(1.14)	173	93.3	(2.66)	39	99.7	(0.88)	104	98.5	(2.36)
Girls	396	92.4	(2.00)	82	95.1	(3.07)	54	94.9	(4.17)	188	91.0	(3.10)	26	94.0	(2.99)	110	96.5	(5.25)

See notes at end of table.

Table E.5a. Protein (Grams Per Kilogram Body Weight): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	1.12	1.27	1.38	1.54	1.89	2.28	2.51	2.67	2.92
5–8 years old	1.74	1.92	2.05	2.26	2.69	3.15	3.43	3.62	3.92
9–13 years old	1.03	1.19	1.31	1.49	1.88	2.32	2.57	2.76	3.03
14–18 years old	0.75	0.85	0.93	1.06	1.31	1.60	1.76	1.88	2.06
All NSLP participants	1.28	1.44	1.56	1.73	2.10	2.51	2.74	2.90	3.17
5–8 years old	2.13	2.28	2.40	2.57	2.89	3.24	3.45	3.58	3.81
9–13 years old	1.06	1.27	1.41	1.64	2.11	2.63	2.93	3.14	3.49
14–18 years old	0.86	0.98	1.06	1.20	1.50	1.84	2.04	2.17	2.40
Income-eligible NSLP participants	1.23	1.40	1.52	1.71	2.09	2.53	2.78	2.96	3.24
5–8 years old	1.95	2.17	2.32	2.56	3.03	3.57	3.89	4.12	4.47
9–13 years old	1.09	1.28	1.42	1.64	2.11	2.62	2.92	3.12	3.46
14–18 years old	0.84	0.94	1.01	1.13	1.38	1.66	1.83	1.95	2.11
Income-eligible nonparticipants	1.00	1.13 *	1.22 **	1.37 ***	1.69 ***	2.05 ***	2.27 ***	2.43 ***	2.68 **
5–8 years old	1.50	1.66	1.77	1.97 *	2.38 ***	2.86 ***	3.14 **	3.34 *	3.68
9–13 years old	0.94	1.07	1.17	1.31 *	1.64 ***	2.01 **	2.25 *	2.43	2.71
14–18 years old	0.69	0.79	0.86	0.98	1.22	1.48	1.63	1.74	1.91
Higher income NSLP participants	1.50	1.64	1.72	1.87	2.18	2.51	2.70	2.83	3.05
5–8 years old	2.28	2.36	2.41	2.49	2.65	2.82	2.90	2.95	3.03
9–13 years old	1.35	1.53	1.64	1.83	2.28	2.76	3.05	3.24	3.59
14–18 years old	1.05	1.19	1.29	1.44	1.73	2.05	2.23	2.34	2.54
Higher income nonparticipants	1.18	1.32	1.41	1.56 *	1.86 *	2.19	2.40	2.54	2.75
5–8 years old	1.76	1.95	2.08	2.30	2.73	3.24	3.55	3.77	4.10
9–13 years old	1.09	1.24	1.33	1.49	1.80	2.13 *	2.32 *	2.46 *	2.64
14–18 years old	0.83	0.92	0.98	1.08	1.27 *	1.48	1.61	1.70	1.84

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	1.00	1.12	1.21	1.35	1.63	1.93	2.11	2.24	2.43
5–8 years old	1.60	1.77	1.89	2.08	2.45	2.84	3.07	3.23	3.48
9–13 years old	0.88	1.01	1.10	1.25	1.56	1.91	2.12	2.27	2.50
14–18 years old	0.66	0.74	0.80	0.89	1.07	1.27	1.38	1.46	1.58
All NSLP participants	1.09	1.23	1.33	1.49	1.80	2.15	2.36	2.50	2.71
5–8 years old	1.70	1.87	1.98	2.16	2.53	2.94	3.18	3.36	3.62
9–13 years old	1.02	1.17	1.28	1.46	1.83	2.24	2.48	2.66	2.90
14–18 years old	0.71	0.82	0.89	1.01	1.23	1.47	1.61	1.70	1.84
Income-eligible NSLP participants	1.07	1.22	1.32	1.48	1.79	2.14	2.34	2.49	2.70
5–8 years old	1.69	1.85	1.97	2.15	2.52	2.94	3.18	3.37	3.63
9–13 years old	0.97	1.14	1.25	1.45	1.83	2.25	2.50	2.68	2.96
14–18 years old	0.71	0.81	0.88	0.99	1.20	1.42	1.54	1.63	1.75
Income-eligible nonparticipants	0.99	1.11	1.18	1.31 *	1.57 ***	1.85 ***	2.02 **	2.14 **	2.32 *
5–8 years old	1.75	1.91	2.02	2.18	2.51	2.86	3.05	3.18	3.39
9–13 years old	0.76	0.88	0.96 *	1.09 **	1.38 ***	1.71 ***	1.91 ***	2.05 **	2.28 *
14–18 years old	0.65	0.72	0.77	0.86	1.04 *	1.23	1.35	1.43	1.56
Higher income NSLP participants	1.17	1.32	1.40	1.56	1.86	2.17	2.36	2.48	2.67
5–8 years old	1.61	1.81	1.93	2.13	2.53	2.95	3.19	3.37	3.62
9–13 years old	1.34	1.46	1.53	1.67	1.93	2.20	2.39	2.49	2.67
14–18 years old	0.67	0.81	0.88	1.03	1.30	1.55	1.70	1.80	1.97
Higher income nonparticipants	1.00	1.11	1.19	1.30 *	1.55 **	1.82 *	1.98	2.10	2.28
5–8 years old	1.41	1.58	1.72	1.92	2.32	2.76	3.03	3.20	3.50
9–13 years old	0.95	1.06	1.13	1.24	1.48	1.76	1.91	2.03	2.21
14–18 years old	0.74	0.80	0.84	0.90	1.03	1.18 *	1.26 *	1.33	1.42

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. The estimated average requirement is the average daily nutrient intake level estimated to meet the requirements for half the healthy individuals in a life stage or gender group. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.6. Carbohydrate (Grams): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	261	(2.1)	924	282	(4.9)	664	282	(4.8)	1,039	245 ***	(2.7)	237	282	(8.7)	688	261 *	(3.6)
Boys	1,355	283	(3.4)	477	304	(7.9)	333	303	(7.5)	512	262 ***	(4.0)	129	306	(12.5)	335	286	(5.1)
Girls	1,371	238	(2.4)	447	260	(5.7)	331	261	(5.9)	527	227 ***	(3.7)	108	258	(12.0)	353	236	(5.0)
5–8 years old	853	249	(2.7)	339	251	(3.8)	254	253	(4.8)	298	247	(4.8)	78	252	(5.0)	198	252	(6.2)
Boys	434	261	(3.7)	162	268	(6.1)	119	278	(7.8)	158	255 *	(6.0)	39	252	(4.7)	109	263	(7.2)
Girls	419	236	(3.8)	177	235	(4.3)	135	226	(5.6)	140	239	(7.5)	39	252	(9.1)	89	241	(10.3)
9–13 years old	1,071	264	(3.2)	388	282	(5.8)	285	288	(6.7)	380	242 ***	(5.2)	94	270	(12.4)	276	265	(5.8)
Boys	515	279	(4.9)	200	290	(8.8)	143	300	(9.5)	181	262 **	(7.7)	51	279	(17.6)	122	280	(8.4)
Girls	556	248	(4.1)	188	273	(7.5)	142	276	(9.4)	199	222 ***	(6.9)	43	261	(17.4)	154	248	(7.9)
14–18 years old	802	267	(4.3)	197	305	(11.7)	125	299	(10.6)	361	246 ***	(4.1)	65	316	(19.9)	214	265 *	(6.4)
Boys	406	303	(7.2)	115	343	(18.9)	71	324	(17.0)	173	268 **	(6.6)	39	371	(29.0)	104	307 *	(9.9)
Girls	396	230	(4.2)	82	265	(13.3)	54	272	(12.4)	188	223 ***	(4.9)	26	259	(27.1)	110	220	(8.0)
Percent of Children With Usual Intake Greater Than Estimated Average Requirements																		
All children 5–18 years old	2,726	100.0	(0.03)	924	100.0	(0.02)	664	100.0	(0.03)	1,039	99.8	(0.13)	237	100.0	(0.02)	688	99.9	(0.10)
Boys	1,355	100.0	(0.02)	477	100.0	(0.03)	333	100.0	(0.04)	512	100.0	(0.01)	129	100.0	(0.04)	335	100.0	(0.04)
Girls	1,371	99.9	(0.06)	447	100.0	(0.01)	331	100.0	(0.04)	527	99.6	(0.28)	108	100.0	(0.00)	353	99.8	(0.20)
5–8 years old	853	100.0	(0.01)	339	100.0	(0.00)	254	100.0	(0.03)	298	100.0	(0.06)	78	100.0	(0.00)	198	100.0	(0.06)
Boys	434	100.0	(0.01)	162	100.0	(0.00)	119	100.0	(0.00)	158	100.0	(0.03)	39	100.0	(0.00)	109	100.0	(0.03)
Girls	419	100.0	(0.02)	177	100.0	(0.00)	135	100.0	(0.06)	140	100.0	(0.11)	39	100.0	(0.00)	89	100.0	(0.11)
9–13 years old	1,071	100.0	(0.03)	388	100.0	(0.01)	285	100.0	(0.04)	380	99.7	(0.28)	94	100.0	(0.05)	276	100.0	(0.07)
Boys	515	100.0	(0.00)	200	100.0	(0.00)	143	100.0	(0.00)	181	100.0	(0.01)	51	100.0	(0.10)	122	100.0	(0.05)
Girls	556	99.9	(0.06)	188	100.0	(0.02)	142	99.9	(0.09)	199	99.4	(0.57)	43	100.0	(0.00)	154	100.0	(0.13)
14–18 years old	802	99.9	(0.07)	197	100.0	(0.04)	125	100.0	(0.07)	361	99.8	(0.24)	65	100.0	(0.02)	214	99.7	(0.26)
Boys	406	100.0	(0.04)	115	100.0	(0.08)	71	100.0	(0.12)	173	100.0	(0.00)	39	100.0	(0.05)	104	99.9	(0.10)
Girls	396	99.9	(0.14)	82	100.0	(0.01)	54	100.0	(0.07)	188	99.6	(0.50)	26	100.0	(0.00)	110	99.5	(0.52)

See notes at end of table.

Table E.6a. Carbohydrate (Grams): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	195	212	224	243	280	319	342	358	382
5–8 years old	181	196	207	223	258	294	316	331	355
9–13 years old	202	217	228	244	277	311	331	344	365
14–18 years old	199	219	233	255	299	346	372	391	420
All NSLP participants	222	239	249	267	301	337	358	373	396
5–8 years old	195	209	219	234	264	297	318	331	354
9–13 years old	218	233	243	258	288	320	338	349	370
14–18 years old	247	266	278	299	339	384	409	426	453
Income-eligible NSLP participants	218	234	246	264	300	338	361	376	399
5–8 years old	198	213	223	240	273	310	333	349	374
9–13 years old	238	251	259	272	299	326	342	352	369
14–18 years old	213	235	249	273	321	371	399	419	447
Income-eligible nonparticipants	194	208	217	231	260 ***	290 ***	308 **	319 *	338
5–8 years old	172	187	198	216	251	290	312	328	352
9–13 years old	193	207	217	231	260 *	290	307	319	338
14–18 years old	212	224	231	243	267 *	291 *	305 *	314	329
Higher income NSLP participants	262	271	276	285	304	324	335	343	355
5–8 years old	203	214	220	230	251	273	285	291	302
9–13 years old	193	210	220	238	276	315	338	353	379
14–18 years old	371	371	371	371	371	371	371	371	371
Higher income nonparticipants	182	202	216	237	281	328	357	377	406
5–8 years old	177	192	203	221	257	298	324 **	341 ***	368 ***
9–13 years old	186	206	218	238	277	319	344	361	385
14–18 years old	181	205	222	248	302	359	393	418	455

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	160	175	186	202	235	271	291	305	327
5–8 years old	173	186	194	208	234	262	279	290	307
9–13 years old	162	178	190	209	245	284	307	323	347
14–18 years old	149	165	176	192	226	263	285	300	323
All NSLP participants	185	199	209	225	256	290	311	325	346
5–8 years old	185	195	202	213	233	255	268	277	289
9–13 years old	181	198	210	229	268	311	337	355	381
14–18 years old	190	204	213	229	260	297	319	333	357
Income-eligible NSLP participants	176	192	203	222	257	296	318	335	359
5–8 years old	174	184	192	203	225	248	261	271	284
9–13 years old	178	197	210	232	273	316	341	359	386
14–18 years old	175	193	206	226	266	312	339	361	390
Income-eligible nonparticipants	145	161 *	172 **	189 ***	224 ***	261 **	283 *	297	321
5–8 years old	164	178	188	203	236	271	290	305	326
9–13 years old	135	152 *	163 *	181 **	218 ***	258 ***	281 **	298 *	323
14–18 years old	142	157	168	186	220 **	256 *	278	291	314
Higher income NSLP participants	208	219	225	236	257	278	291	300	314
5–8 years old	197	209	217	228	251	275	289	300	314
9–13 years old	210	221	227	238	260	282	296	304	318
14–18 years old	214	224	229	240	259	277	288	296	309

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Higher income nonparticipants	157 *	171 *	182 *	198	231	269	290	306	330
5–8 years old	165	178	189	205	236	272	293	308	332
9–13 years old	172	188	198	213	245	280	299	313	335
14–18 years old	135	150	162	179	214	255	279	296	324

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. The estimated average requirement is the average daily nutrient intake level estimated to meet the requirements for half the healthy individuals in a life stage or gender group. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.7. Carbohydrate (Percentage of Calorie Intake): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	53.3	(0.26)	924	53.5	(0.44)	664	53.4	(0.50)	1,039	53.1	(0.40)	237	53.3	(0.70)	688	53.4	(0.55)
Boys	1,355	53.2	(0.29)	477	53.6	(0.57)	333	53.7	(0.68)	512	53.5	(0.60)	129	53.0	(0.95)	335	52.8	(0.53)
Girls	1,371	53.4	(0.44)	447	53.4	(0.67)	331	53.1	(0.73)	527	52.7	(0.51)	108	53.5	(1.04)	353	54.0	(0.97)
5–8 years old	853	54.7	(0.36)	339	54.8	(0.52)	254	54.3	(0.57)	298	55.4	(0.70)	78	55.9	(0.66)	198	54.0	(0.86)
Boys	434	54.6	(0.46)	162	55.2	(0.84)	119	54.5	(0.81)	158	56.3	(0.80)	39	56.1	(0.91)	109	52.8 *	(1.06)
Girls	419	54.8	(0.56)	177	54.5	(0.58)	135	54.1	(0.82)	140	54.5	(1.17)	39	55.8	(0.96)	89	55.3	(1.37)
9–13 years old	1,071	53.5	(0.54)	388	53.2	(0.49)	285	53.4	(0.52)	380	53.4	(0.65)	94	51.7	(0.97)	276	53.9	(1.14)
Boys	515	53.2	(0.48)	200	52.9	(0.78)	143	53.1	(0.81)	181	54.0	(0.94)	51	51.1	(1.52)	122	53.0	(0.81)
Girls	556	53.8	(0.99)	188	53.4	(0.58)	142	53.8	(0.63)	199	52.6	(0.91)	43	52.3	(1.19)	154	54.8	(2.18)
14–18 years old	802	52.1	(0.40)	197	52.8	(1.02)	125	52.7	(1.18)	361	51.0	(0.69)	65	52.8	(1.58)	214	52.4	(0.76)
Boys	406	52.1	(0.52)	115	53.2	(1.18)	71	53.7	(1.56)	173	50.8	(1.21)	39	52.6	(1.99)	104	52.5	(0.89)
Girls	396	52.0	(0.61)	82	52.4	(1.69)	54	51.6	(1.79)	188	51.3	(0.62)	26	53.0	(2.47)	110	52.2	(1.23)
Percent of Children With Usual Intake Below the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	1.2 u	(0.73)	924	0.2 u	(0.53)	664	0.2 u	(0.60)	1,039	1.7 u	(1.44)	237	1.2 u	(2.76)	688	3.4 u	(1.45)
Boys	1,355	0.9 u	(1.15)	477	0.4 u	(0.99)	333	0.2 u	(0.94)	512	2.0 u	(2.46)	129	1.7 u	(3.68)	335	2.7 u	(2.23)
Girls	1,371	1.4 u	(0.88)	447	0.0	(0.29)	331	0.2 u	(0.73)	527	1.5 u	(1.42)	108	0.6 u	(4.12)	353	4.1 u	(1.83)
5–8 years old	853	0.2 u	(0.21)	339	0.0	(0.00)	254	0.4 u	(0.35)	298	0.0 u	(0.14)	78	0.0	(0.00)	198	4.0 u	(2.84)
Boys	434	0.3 u	(0.37)	162	0.0	(0.01)	119	0.0	(0.07)	158	0.0 u	(0.26)	39	0.0	(0.00)	109	4.6 u	(5.16)
Girls	419	0.0 u	(0.16)	177	0.0	(0.00)	135	0.8 u	(0.72)	140	0.0	(0.06)	39	0.0	(0.00)	89	3.5 u	(2.19)
9–13 years old	1,071	1.0 u	(0.98)	388	0.5 u	(1.35)	285	0.4 u	(1.40)	380	2.0 u	(1.77)	94	2.4 u	(2.67)	276	0.5 u	(1.70)
Boys	515	1.9 u	(1.91)	200	1.0 u	(2.63)	143	0.7 u	(2.66)	181	2.4 u	(2.66)	51	4.7 u	(5.23)	122	1.0 u	(3.31)
Girls	556	0.0 u	(0.19)	188	0.0	(0.23)	142	0.0	(0.66)	199	1.5 u	(2.34)	43	0.0	(0.00)	154	0.0 u	(0.32)
14–18 years old	802	2.1 u	(1.72)	197	0.0	(0.62)	125	0.0	(0.87)	361	2.8 u	(3.50)	65	0.9 u	(7.00)	214	5.7 u	(2.87)
Boys	406	0.4 u	(2.49)	115	0.0	(0.96)	71	0.0	(0.00)	173	3.0 u	(6.12)	39	0.2 u	(8.58)	104	2.9 u	(3.40)
Girls	396	3.8 u	(2.36)	82	0.0	(0.77)	54	0.0	(1.79)	188	2.5 u	(3.14)	26	1.7 u	(11.19)	110	8.6 u	(4.68)

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Percent of Children With Usual Intake Within the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	98.8	(0.76)	924	99.8	(0.57)	664	99.8	(0.64)	1,039	98.1	(1.59)	237	98.7	(2.90)	688	95.7	(1.78)
Boys	1,355	99.0	(1.22)	477	99.6	(1.07)	333	99.8	(1.01)	512	97.7	(2.76)	129	98.3	(3.72)	335	97.2	(2.41)
Girls	1,371	98.6	(0.90)	447	100.0	(0.31)	331	99.8	(0.77)	527	98.5	(1.49)	108	99.1	(4.47)	353	94.2	(2.64)
5–8 years old	853	99.8	(0.33)	339	100.0	(0.01)	254	99.6	(0.48)	298	99.8	(0.81)	78	100.0	(0.00)	198	93.6	(3.83)
Boys	434	99.5	(0.60)	162	100.0	(0.01)	119	100.0	(0.11)	158	99.6	(1.58)	39	100.0	(0.00)	109	95.0	(5.81)
Girls	419	100.0	(0.25)	177	100.0	(0.00)	135	99.2	(0.98)	140	100.0	(0.07)	39	100.0	(0.00)	89	92.1	(4.95)
9–13 years old	1,071	99.0	(1.10)	388	99.5	(1.46)	285	99.6	(1.51)	380	97.6	(2.32)	94	97.6	(2.67)	276	99.5	(2.23)
Boys	515	98.0	(2.12)	200	98.9	(2.84)	143	99.3	(2.85)	181	96.9	(3.77)	51	95.3	(5.22)	122	99.0	(3.43)
Girls	556	100.0	(0.38)	188	100.0	(0.23)	142	100.0	(0.77)	199	98.4	(2.65)	43	100.0	(0.00)	154	99.9	(2.82)
14–18 years old	802	97.9	(1.76)	197	100.0	(0.64)	125	100.0	(0.87)	361	97.2	(3.63)	65	98.8	(7.40)	214	93.7	(3.24)
Boys	406	99.6	(2.55)	115	100.0	(0.98)	71	100.0	(0.00)	173	97.0	(6.42)	39	99.8	(8.70)	104	97.1	(3.59)
Girls	396	96.1	(2.41)	82	100.0	(0.80)	54	100.0	(1.79)	188	97.5	(3.14)	26	97.7	(12.13)	110	90.2	(5.49)
Percent of Children With Usual Intake Above the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	0.0 u	(0.08)	924	0.0 u	(0.05)	664	0.0 u	(0.08)	1,039	0.2 u	(0.37)	237	0.1 u	(0.28)	688	0.9 u	(0.80)
Boys	1,355	0.1 u	(0.12)	477	0.0 u	(0.10)	333	0.0 u	(0.08)	512	0.4 u	(0.71)	129	0.0	(0.07)	335	0.1 u	(0.27)
Girls	1,371	0.0 u	(0.09)	447	0.0	(0.01)	331	0.0 u	(0.14)	527	0.0 u	(0.15)	108	0.2 u	(0.56)	353	1.7 u	(1.61)
5–8 years old	853	0.1 u	(0.14)	339	0.0	(0.00)	254	0.0 u	(0.23)	298	0.2 u	(0.71)	78	0.0	(0.00)	198	2.4 u	(2.00)
Boys	434	0.1 u	(0.27)	162	0.0	(0.00)	119	0.0	(0.07)	158	0.3 u	(1.40)	39	0.0	(0.00)	109	0.4 u	(0.85)
Girls	419	0.0 u	(0.09)	177	0.0	(0.00)	135	0.0 u	(0.47)	140	0.0	(0.04)	39	0.0	(0.00)	89	4.4 u	(3.99)
9–13 years old	1,071	0.1 u	(0.17)	388	0.0 u	(0.14)	285	0.0 u	(0.13)	380	0.4 u	(0.86)	94	0.0	(0.03)	276	0.0 u	(1.28)
Boys	515	0.1 u	(0.27)	200	0.0 u	(0.27)	143	0.0 u	(0.23)	181	0.7 u	(1.63)	51	0.0	(0.06)	122	0.0	(0.20)
Girls	556	0.0 u	(0.21)	188	0.0	(0.01)	142	0.0	(0.12)	199	0.0 u	(0.41)	43	0.0	(0.00)	154	0.1 u	(2.62)
14–18 years old	802	0.0 u	(0.07)	197	0.0	(0.02)	125	0.0	(0.00)	361	0.0 u	(0.24)	65	0.3 u	(0.75)	214	0.6 u	(0.94)
Boys	406	0.0	(0.07)	115	0.0	(0.02)	71	0.0	(0.00)	173	0.0 u	(0.46)	39	0.0	(0.19)	104	0.1 u	(0.29)
Girls	396	0.0 u	(0.12)	82	0.0	(0.04)	54	0.0	(0.00)	188	0.0	(0.01)	26	0.6 u	(1.52)	110	1.2 u	(1.91)

See notes at end of table.

Table E.7a. Carbohydrate (Percentage of Calorie Intake): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	47.6	48.9	49.7	50.9	53.2	55.5	56.7	57.5	58.7
5–8 years old	48.8	50.1	50.9	52.3	54.7	57.0	58.3	59.1	60.5
9–13 years old	46.8	48.2	49.2	50.6	53.2	55.8	57.2	58.1	59.5
14–18 years old	47.6	48.6	49.3	50.3	52.1	54.0	54.9	55.6	56.6
All NSLP participants	50.9	51.5	51.9	52.5	53.6	54.8	55.4	55.8	56.4
5–8 years old	52.3	53.0	53.4	54.0	55.2	56.3	57.0	57.4	58.0
9–13 years old	47.2	48.5	49.3	50.6	52.9	55.2	56.5	57.3	58.6
14–18 years old	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2	53.2
Income-eligible NSLP participants	51.1	51.6	52.0	52.6	53.7	54.8	55.3	55.7	56.3
5–8 years old	51.7	52.3	52.7	53.3	54.4	55.6	56.3	56.7	57.4
9–13 years old	47.9	48.9	49.7	51.0	53.1	55.2	56.3	57.1	58.2
14–18 years old	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7	53.7
Income-eligible nonparticipants	47.4	48.7	49.7	51.0	53.5	55.9	57.2	58.1	59.4
5–8 years old	50.8	52.0	52.8	54.1	56.3	58.6	59.7	60.5	61.7
9–13 years old	46.6	48.2	49.4	51.0	54.1	57.1	58.7	59.7	61.4
14–18 years old	45.7	46.8	47.5	48.7	50.7	52.8	54.0	54.8	55.9
Higher income NSLP participants	48.9	49.7	50.4	51.3	53.1	54.8	55.7	56.3	57.3
5–8 years old	53.2	53.7	54.2	54.8	56.1	57.4	58.0	58.5	59.2
9–13 years old	45.1	46.5	47.4	48.8	51.1	53.6	54.9	55.7	57.1
14–18 years old	49.1	49.8	50.3	51.1	52.7	54.1	54.7	55.2	56.0
Higher income nonparticipants	46.3	47.8	48.9	50.3	52.8	55.3	56.7	57.6	58.9
5–8 years old	45.2	46.8	48.0	49.8	52.8	55.9	57.4	58.4	60.1
9–13 years old	47.5	48.9	49.8	51.0	53.1	55.2	56.3	57.1	58.1
14–18 years old	46.1	47.6	48.6	50.0	52.5	55.1	56.5	57.4	58.8

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	48.2	49.4	50.1	51.3	53.4	55.5	56.7	57.4	58.6
5–8 years old	50.4	51.4	52.0	53.0	54.8	56.6	57.5	58.2	59.1
9–13 years old	49.4	50.3	50.9	51.9	53.7	55.6	56.6	57.3	58.3
14–18 years old	45.5	47.0	48.0	49.5	52.1	54.7	56.1	57.0	58.4
All NSLP participants	52.5	52.7	52.8	53.0	53.4	53.7	53.9	54.0	54.2
5–8 years old	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5
9–13 years old	51.0	51.6	51.9	52.5	53.4	54.4	55.0	55.3	55.9
14–18 years old	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4	52.4
Income-eligible NSLP participants	50.3	50.9	51.4	52.0	53.1	54.2	54.8	55.2	55.8
5–8 years old	48.4	49.7	50.6	52.0	54.2	56.4	57.5	58.3	59.4
9–13 years old	50.5	51.2	51.7	52.5	53.8	55.2	56.0	56.4	57.2
14–18 years old	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6	51.6
Income-eligible nonparticipants	48.7	49.6	50.2	51.1	52.7	54.3	55.2	55.7	56.5
5–8 years old	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5	54.5
9–13 years old	46.8	48.1	49.0	50.2	52.6	55.0	56.3	57.1	58.4
14–18 years old	46.1	47.3	48.1	49.4	51.5	53.5	54.5	55.2	56.2
Higher income NSLP participants	51.4	51.8	51.9	52.4	53.4	54.6	55.0	55.5	55.9
5–8 years old	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
9–13 years old	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3	52.3
14–18 years old	47.2	48.3	48.7	50.0	52.6	55.8	57.1	58.3	59.5

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Higher income nonparticipants	46.5	48.1	49.2	50.8	53.9	57.0	58.8	60.0	61.8
5–8 years old	45.9 ***	48.0 ***	49.2 **	51.5	55.3	59.1	61.3	62.6 *	64.6 **
9–13 years old	50.0	51.0	51.7	52.7	54.8	56.9	57.9	58.7	59.9
14–18 years old	43.6	45.4	46.7	48.5	52.0	55.6	57.7	59.2	61.5

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. The acceptable macronutrient distribution range (AMDR) is the range of intakes for macronutrients, as a percentage of calories, associated with reduced risk of chronic disease while providing recommended intakes of other essential nutrients. The AMDR for carbohydrates is 45–65 percent of calories for individuals 1 year old and older. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.8. Dietary Fiber (Grams): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	15.0	(0.22)	924	16.5	(0.43)	664	17.1	(0.54)	1,039	13.7 ***	(0.28)	237	16.0	(0.69)	688	15.1	(0.37)
Boys	1,355	16.0	(0.35)	477	17.4	(0.75)	333	18.4	(0.85)	512	14.5 ***	(0.41)	129	16.3	(1.22)	335	16.0	(0.47)
Girls	1,371	14.0	(0.26)	447	15.6	(0.41)	331	15.8	(0.66)	527	12.7 ***	(0.38)	108	15.6	(0.59)	353	14.2	(0.58)
5–8 years old	853	14.3	(0.33)	339	14.9	(0.49)	254	15.3	(0.56)	298	13.7 *	(0.38)	78	14.1	(0.69)	198	14.3	(0.74)
Boys	434	14.9	(0.55)	162	15.7	(0.83)	119	16.7	(0.91)	158	14.0 *	(0.58)	39	14.1	(0.89)	109	14.9	(0.99)
Girls	419	13.6	(0.35)	177	14.0	(0.51)	135	13.9	(0.65)	140	13.4	(0.48)	39	14.2	(1.07)	89	13.7	(1.10)
9–13 years old	1,071	15.3	(0.39)	388	17.3	(0.69)	285	17.9	(0.82)	380	13.4 ***	(0.54)	94	16.9	(1.33)	276	14.7	(0.52)
Boys	515	15.9	(0.62)	200	18.1	(1.08)	143	19.1	(1.17)	181	14.5 **	(0.85)	51	17.0	(2.38)	122	14.5	(0.67)
Girls	556	14.6	(0.45)	188	16.5	(0.86)	142	16.8	(1.14)	199	12.2 ***	(0.66)	43	16.7	(1.11)	154	14.9	(0.80)
14–18 years old	802	15.3	(0.40)	197	17.0	(0.89)	125	17.7	(1.16)	361	13.9 **	(0.48)	65	16.5	(1.26)	214	16.0	(0.67)
Boys	406	16.9	(0.62)	115	18.0	(1.61)	71	18.9	(1.88)	173	14.9 *	(0.61)	39	17.4	(2.31)	104	18.2	(0.81)
Girls	396	13.6	(0.50)	82	15.9	(0.66)	54	16.4	(1.32)	188	12.7 *	(0.74)	26	15.5	(0.89)	110	13.7	(1.09)
Mean Usual Intake as a Percent of Adequate Intake																		
All children 5–18 years old	2,726	52.6	(0.76)	924	58.0	(1.37)	664	60.0	(1.77)	1,039	48.0 ***	(0.98)	237	56.1	(2.18)	688	52.8	(1.35)
Boys	1,355	51.0	(1.12)	477	55.5	(2.20)	333	58.6	(2.48)	512	46.6 ***	(1.30)	129	51.9	(3.66)	335	50.7	(1.55)
Girls	1,371	54.4	(1.02)	447	60.7	(1.60)	331	61.5	(2.54)	527	49.5 ***	(1.48)	108	60.5	(2.30)	353	55.0	(2.25)
5–8 years old	853	57.1	(1.32)	339	59.6	(1.97)	254	61.3	(2.25)	298	54.9 *	(1.51)	78	56.5	(2.77)	198	57.2	(2.96)
Boys	434	59.5	(2.21)	162	62.9	(3.34)	119	66.8	(3.64)	158	56.1 *	(2.32)	39	56.3	(3.54)	109	59.4	(3.97)
Girls	419	54.6	(1.41)	177	56.1	(2.02)	135	55.5	(2.61)	140	53.6	(1.92)	39	56.8	(4.30)	89	54.9	(4.39)
9–13 years old	1,071	53.7	(1.33)	388	61.0	(2.41)	285	63.0	(2.88)	380	46.8 ***	(1.87)	94	59.5	(4.44)	276	52.0	(1.86)
Boys	515	51.3	(2.01)	200	58.5	(3.49)	143	61.5	(3.77)	181	46.9 **	(2.73)	51	54.8	(7.68)	122	46.9	(2.16)
Girls	556	56.2	(1.73)	188	63.6	(3.31)	142	64.5	(4.38)	199	46.8 ***	(2.56)	43	64.3	(4.25)	154	57.4	(3.07)
14–18 years old	802	48.3	(1.26)	197	54.1	(2.51)	125	56.3	(3.55)	361	44.0 **	(1.61)	65	52.5	(3.54)	214	50.2	(2.32)
Boys	406	44.4	(1.63)	115	47.2	(4.24)	71	49.8	(4.95)	173	39.3 *	(1.61)	39	45.7	(6.07)	104	47.8	(2.13)
Girls	396	52.5	(1.94)	82	61.3	(2.54)	54	63.1	(5.08)	188	49.0 *	(2.85)	26	59.7	(3.44)	110	52.9	(4.20)

See notes at end of table.

Table E.8a. Dietary Fiber (Grams): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	9.6	10.8	11.6	12.9	15.6	18.6	20.4	21.7	23.6
5–8 years old	8.9	10.0	10.7	11.9	14.5	17.3	19.1	20.3	22.3
9–13 years old	10.0	11.1	11.9	13.1	15.6	18.4	20.0	21.2	22.9
14–18 years old	9.8	11.1	12.0	13.5	16.5	19.9	21.8	23.2	25.3
All NSLP participants	11.6	12.8	13.5	14.8	17.2	19.8	21.3	22.3	24.0
5–8 years old	9.8	10.9	11.7	13.0	15.4	18.2	19.8	20.9	22.8
9–13 years old	11.5	12.9	13.8	15.1	17.9	20.9	22.6	23.7	25.7
14–18 years old	13.1	14.1	14.7	15.7	17.8	20.0	21.2	22.0	23.4
Income-eligible NSLP participants	11.7	13.0	13.9	15.3	18.1	21.2	22.9	24.2	26.0
5–8 years old	9.6	11.0	11.9	13.4	16.4	19.6	21.6	22.9	25.0
9–13 years old	13.8	14.9	15.6	16.7	18.9	21.3	22.6	23.5	24.9
14–18 years old	11.2	12.7	13.7	15.3	18.6	22.2	24.2	25.7	27.7
Income-eligible nonparticipants	8.3	9.4	10.2	11.4 *	14.1 ***	17.1 *	19.0	20.3	22.5
5–8 years old	9.0	9.9	10.5	11.5	13.7	16.1	17.6	18.7	20.4
9–13 years old	8.1	9.2	10.0	11.3 *	14.0 **	17.2	19.2	20.6	22.9
14–18 years old	7.9	9.2	10.1	11.5	14.5	17.9	19.9	21.3	23.5
Higher income NSLP participants	11.8	12.7	13.2	14.0	16.0	18.2	19.6	20.5	22.0
5–8 years old	11.6	12.1	12.4	13.0	14.1	15.2	15.8	16.2	16.7
9–13 years old	8.4	9.8	10.7	12.3	16.2	20.6	23.4	25.4	28.9
14–18 years old	15.3 u	15.8 u	16.1	16.5	17.4	18.3	18.7	19.0	19.5
Higher income nonparticipants	9.6	10.8	11.6	12.9	15.6	18.6	20.4	21.7	23.6
5–8 years old	8.3	9.5	10.3	11.7	14.4	17.6	19.5	20.9	23.0
9–13 years old	10.1	11.0	11.6	12.5	14.4	16.4	17.6	18.4	19.6
14–18 years old	10.2	11.7	12.7	14.3	17.6	21.4	23.7	25.4	28.0

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	8.4	9.4	10.1	11.3	13.6	16.3	17.9	19.1	20.8
5–8 years old	8.8	9.7	10.4	11.4	13.4	15.6	17.0	17.9	19.3
9–13 years old	8.8	9.8	10.6	11.8	14.2	17.0	18.7	19.9	21.8
14–18 years old	7.6	8.7	9.5	10.7	13.3	16.2	17.9	19.1	21.0
All NSLP participants	10.1	11.1	11.8	13.0	15.3	17.9	19.5	20.6	22.3
5–8 years old	10.4	11.1	11.6	12.4	13.9	15.5	16.5	17.1	18.1
9–13 years old	9.6	10.8	11.6	13.0	16.0	19.4	21.6	23.1	25.3
14–18 years old	10.3	11.4	12.1	13.3	15.6	18.3	19.9	20.9	22.6
Income-eligible NSLP participants	9.6	10.7	11.5	12.8	15.4	18.4	20.2	21.6	23.7
5–8 years old	10.0	10.8	11.3	12.1	13.7	15.5	16.5	17.2	18.2
9–13 years old	9.4	10.7	11.5	13.0	16.1	19.8	22.1	23.9	26.7
14–18 years old	9.4	10.7	11.6	13.1	16.0	19.3	21.3	22.8	24.8
Income-eligible nonparticipants	7.3	8.3	8.9 *	10.1 **	12.4 ***	15.0 *	16.6	17.6	19.4
5–8 years old	7.9	8.8	9.5	10.6	13.1	15.7	17.3	18.5	20.3
9–13 years old	7.6	8.4	9.0	10.0	11.9 **	14.1 **	15.3 **	16.2 **	17.7 *
14–18 years old	6.6	7.7	8.4	9.7	12.4	15.3	17.2	18.4	20.4
Higher income NSLP participants	11.9	12.7	13.1	13.9	15.5	17.1	18.1	18.8	19.9
5–8 years old	10.7	11.5	11.9	12.6	14.1	15.6	16.5	17.2	18.1
9–13 years old	13.2	14.0	14.4	15.2	16.7	18.2	19.1	19.6	20.5
14–18 years old	11.4	12.3	12.7	13.6	15.4	17.2	18.3	19.1	20.5
Higher income nonparticipants	8.5	9.5	10.3	11.4	13.8	16.5	18.2	19.3	21.2
5–8 years old	8.6	9.5	10.2	11.3	13.4	15.8	17.3	18.3	20.0
9–13 years old	9.9	10.9	11.5	12.5	14.6	17.0	18.5	19.5	21.1
14–18 years old	7.2	8.3	9.1	10.4	13.2	16.5	18.5	20.0	22.3

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Adequate intake is the recommended average daily intake level. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample *t*-tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.9. Dietary Fiber (Grams per 1,000 Calories): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	7.8	(0.08)	924	8.1	(0.16)	664	8.3	(0.21)	1,039	7.5 **	(0.13)	237	7.9	(0.26)	688	7.9	(0.16)
Boys	1,355	7.6	(0.12)	477	7.9	(0.26)	333	8.3	(0.31)	512	7.5 *	(0.16)	129	7.4	(0.34)	335	7.5	(0.19)
Girls	1,371	8.0	(0.12)	447	8.3	(0.20)	331	8.2	(0.26)	527	7.5 *	(0.20)	108	8.4	(0.38)	353	8.3	(0.26)
5–8 years old	853	7.9	(0.14)	339	8.2	(0.15)	254	8.3	(0.20)	298	7.7 *	(0.21)	78	7.8	(0.29)	198	7.9	(0.32)
Boys	434	7.8	(0.20)	162	8.1	(0.23)	119	8.2	(0.32)	158	7.7	(0.26)	39	7.9	(0.29)	109	7.6	(0.37)
Girls	419	8.1	(0.20)	177	8.3	(0.20)	135	8.5	(0.22)	140	7.8	(0.34)	39	7.8	(0.52)	89	8.3	(0.53)
9–13 years old	1,071	7.9	(0.16)	388	8.3	(0.30)	285	8.5	(0.35)	380	7.6 *	(0.23)	94	8.2	(0.40)	276	7.6	(0.22)
Boys	515	7.7	(0.24)	200	8.3	(0.45)	143	8.7	(0.56)	181	7.7	(0.34)	51	7.7	(0.61)	122	7.0	(0.34)
Girls	556	8.1	(0.21)	188	8.3	(0.39)	142	8.3	(0.41)	199	7.5	(0.29)	43	8.7	(0.50)	154	8.3	(0.28)
14–18 years old	802	7.7	(0.14)	197	7.8	(0.32)	125	8.1	(0.42)	361	7.3	(0.22)	65	7.5	(0.54)	214	8.1	(0.30)
Boys	406	7.5	(0.18)	115	7.5	(0.51)	71	8.2	(0.61)	173	7.2	(0.23)	39	6.7	(0.69)	104	7.9	(0.29)
Girls	396	7.9	(0.21)	82	8.2	(0.37)	54	8.1	(0.58)	188	7.4	(0.37)	26	8.5	(0.83)	110	8.3	(0.53)
Mean Usual Intake as a Percent of Adequate Intake																		
All children 5–18 years old	2,726	55.8	(0.61)	924	57.9	(1.17)	664	59.2	(1.47)	1,039	53.8 **	(0.90)	237	56.1	(1.83)	688	56.4	(1.15)
Boys	1,355	54.5	(0.85)	477	56.7	(1.83)	333	59.6	(2.23)	512	53.7 *	(1.16)	129	52.6	(2.46)	335	53.6	(1.36)
Girls	1,371	57.1	(0.86)	447	59.0	(1.44)	331	58.9	(1.89)	527	53.9 *	(1.40)	108	59.7	(2.73)	353	59.3	(1.88)
5–8 years old	853	56.6	(1.00)	339	58.4	(1.09)	254	59.4	(1.40)	298	55.3 *	(1.50)	78	56.0	(2.09)	198	56.7	(2.31)
Boys	434	55.5	(1.40)	162	57.7	(1.63)	119	58.2	(2.28)	158	54.9	(1.83)	39	56.1	(2.05)	109	54.3	(2.65)
Girls	419	57.8	(1.43)	177	59.2	(1.44)	135	60.5	(1.59)	140	55.6	(2.40)	39	55.9	(3.71)	89	59.1	(3.81)
9–13 years old	1,071	56.2	(1.13)	388	59.4	(2.13)	285	60.4	(2.49)	380	54.3 *	(1.61)	94	58.4	(2.83)	276	54.5	(1.58)
Boys	515	54.9	(1.68)	200	59.6	(3.23)	143	61.8	(3.99)	181	55.2	(2.43)	51	55.1	(4.35)	122	50.1	(2.42)
Girls	556	57.6	(1.51)	188	59.3	(2.77)	142	59.0	(2.93)	199	53.3	(2.10)	43	62.0	(3.58)	154	59.2	(2.00)
14–18 years old	802	54.7	(0.97)	197	55.9	(2.29)	125	58.0	(3.00)	361	52.2	(1.54)	65	53.9	(3.85)	214	57.9	(2.11)
Boys	406	53.3	(1.27)	115	53.2	(3.68)	71	58.4	(4.34)	173	51.4	(1.62)	39	47.7	(4.94)	104	56.3	(2.04)
Girls	396	56.2	(1.49)	82	58.7	(2.66)	54	57.6	(4.13)	188	53.1	(2.66)	26	60.5	(5.94)	110	59.5	(3.76)

See notes at end of table.

Table E.9a. Dietary Fiber (Grams per 1,000 Calories): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	5.2	5.7	6.0	6.5	7.5	8.6	9.3	9.7	10.4
5–8 years old	5.4	5.8	6.2	6.6	7.7	8.7	9.4	9.9	10.6
9–13 years old	5.4	5.9	6.2	6.6	7.6	8.6	9.2	9.7	10.3
14–18 years old	4.9	5.4	5.7	6.3	7.4	8.6	9.2	9.7	10.4
All NSLP participants	5.6	6.1	6.4	6.9	7.9	8.9	9.5	9.9	10.6
5–8 years old	6.1	6.5	6.8	7.2	8.0	8.9	9.4	9.8	10.4
9–13 years old	6.4	6.8	7.1	7.5	8.3	9.2	9.7	10.0	10.5
14–18 years old	4.6	5.2	5.5	6.1	7.3	8.7	9.4	9.9	10.8
Income-eligible NSLP participants	6.1	6.5	6.8	7.3	8.3	9.3	9.9	10.3	10.9
5–8 years old	5.6	6.1	6.4	7.0	8.0	9.2	9.9	10.4	11.1
9–13 years old	7.2	7.5	7.7	8.0	8.6	9.3	9.6	9.9	10.2
14–18 years old	5.3	5.9	6.2	6.9	8.1	9.4	10.1	10.7	11.4
Income-eligible nonparticipants	5.0	5.5	5.8	6.3	7.4	8.6	9.3	9.8	10.6
5–8 years old	5.6	6.0	6.3	6.7	7.6	8.6	9.1	9.5	10.2
9–13 years old	5.0	5.5	5.8	6.4	7.5	8.9	9.7	10.3	11.2
14–18 years old	4.6	5.1	5.4	6.0	7.1	8.3	9.0	9.5	10.3
Higher income NSLP participants	5.2	5.6	5.9	6.3	7.3	8.3	8.9	9.3	9.9
5–8 years old	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9
9–13 years old	4.8	5.4	5.7	6.3	7.5	8.9	9.7	10.3	11.3
14–18 years old	3.7 u	4.2 u	4.6 u	5.3	6.5	8.0	8.8	9.3	10.2
Higher income nonparticipants	5.1	5.6	5.9	6.4	7.4	8.5	9.1	9.6	10.2
5–8 years old	4.7 ***	5.3 ***	5.6 ***	6.3 **	7.5	8.8	9.6 *	10.2 **	11.0 ***
9–13 years old	4.8	5.2	5.5	6.0	6.9	7.9	8.6	9.0	9.6
14–18 years old	5.8	6.2	6.5	6.9	7.8	8.8	9.3	9.7	10.2

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	5.3	5.8	6.1	6.7	7.8	9.1	9.9	10.4	11.2
5–8 years old	5.7	6.1	6.5	6.9	8.0	9.1	9.8	10.2	11.0
9–13 years old	5.6	6.1	6.4	6.9	7.9	9.1	9.8	10.3	11.1
14–18 years old	4.7	5.3	5.7	6.3	7.7	9.2	10.1	10.7	11.6
All NSLP participants	5.8	6.3	6.6	7.1	8.1	9.3	10.0	10.5	11.2
5–8 years old	6.7	7.0	7.2	7.6	8.2	9.0	9.4	9.7	10.1
9–13 years old	5.9	6.3	6.6	7.1	8.2	9.3	10.0	10.5	11.2
14–18 years old	5.2	5.7	6.1	6.8	8.0	9.5	10.4	11.0	12.0
Income-eligible NSLP participants	5.7	6.2	6.5	7.1	8.1	9.3	10.0	10.5	11.3
5–8 years old	6.3	6.7	7.0	7.5	8.4	9.4	9.9	10.3	10.9
9–13 years old	5.8	6.3	6.6	7.1	8.1	9.3	10.0	10.5	11.3
14–18 years old	5.1	5.7	6.1	6.7	7.9	9.3	10.0	10.6	11.4
Income-eligible nonparticipants	5.2	5.6	5.9	6.4	7.4	8.5	9.2	9.6	10.4
5–8 years old	5.7	6.1	6.3	6.8	7.7	8.7	9.3	9.7	10.4
9–13 years old	5.2	5.7	5.9	6.4	7.3	8.4	9.0	9.5	10.2
14–18 years old	4.8	5.3	5.6	6.2	7.3	8.5	9.3	9.7	10.5
Higher income NSLP participants	7.0	7.2	7.4	7.7	8.3	8.9	9.4	9.7	10.2
5–8 years old	7.5	7.6	7.6	7.7	7.8	8.0	8.0	8.1	8.1
9–13 years old	8.6	8.6	8.6	8.7	8.7	8.7	8.7	8.7	8.7
14–18 years old	5.0	5.6	6.0	6.7	8.2	9.9	11.0	11.8	13.2
Higher income nonparticipants	5.1 *	5.7 *	6.1	6.7	8.1	9.6	10.5	11.2	12.2
5–8 years old	4.9	5.5	6.0	6.7	8.1	9.7	10.6	11.3	12.4
9–13 years old	5.7 *	6.2 *	6.5	7.0	8.1	9.4	10.1	10.7	11.5
14–18 years old	4.7	5.3	5.8	6.6	8.1	9.9	10.9	11.6	12.8

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Adequate intake is the recommended average daily intake level. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.10. Saturated Fat (Grams): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
All children 5–18 years old	2,726	25.9	(0.35)	924	28.0	(0.77)	664	28.1	(0.89)	1,039	24.2 ***	(0.51)	237	28.1	(1.35)	688	26.1	(0.63)
Boys	1,355	28.3	(0.52)	477	29.8	(1.30)	333	30.2	(1.33)	512	26.1 **	(0.76)	129	30.0	(2.23)	335	28.8	(0.82)
Girls	1,371	23.5	(0.47)	447	26.0	(0.78)	331	25.9	(1.16)	527	22.1 **	(0.67)	108	26.2	(1.49)	353	23.3	(0.97)
5–8 years old	853	24.0	(0.51)	339	23.9	(0.82)	254	24.4	(0.96)	298	22.4	(0.99)	78	23.0	(1.12)	198	26.0	(1.29)
Boys	434	25.1	(0.68)	162	24.7	(1.44)	119	26.4	(1.61)	158	22.4 *	(1.10)	39	22.3	(1.67)	109	28.1 **	(1.23)
Girls	419	22.8	(0.76)	177	23.0	(0.76)	135	22.3	(1.01)	140	22.4	(1.67)	39	23.8	(1.47)	89	23.7	(2.29)
9–13 years old	1,071	26.0	(0.60)	388	28.0	(1.06)	285	28.7	(1.32)	380	23.4 ***	(0.69)	94	27.6	(1.77)	276	26.1	(1.08)
Boys	515	27.8	(0.91)	200	28.9	(1.74)	143	30.3	(2.01)	181	24.8 *	(1.03)	51	27.9	(2.38)	122	28.4	(1.60)
Girls	556	24.2	(0.77)	188	27.0	(1.19)	142	27.1	(1.70)	199	22.1 **	(0.92)	43	27.2	(2.62)	154	23.6	(1.44)
14–18 years old	802	27.3	(0.65)	197	31.0	(1.70)	125	30.2	(1.91)	361	26.2	(0.95)	65	32.5	(3.14)	214	26.3	(0.96)
Boys	406	31.2	(0.97)	115	34.5	(2.90)	71	32.8	(2.80)	173	30.2	(1.59)	39	37.8	(5.43)	104	29.6	(1.33)
Girls	396	23.2	(0.87)	82	27.3	(1.70)	54	27.4	(2.59)	188	22.0	(0.99)	26	26.9	(2.97)	110	22.8	(1.40)

See notes at end of table.

Table E.10a. Saturated Fat (Grams): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	17.6	19.5	20.9	23.1	27.7	32.8	35.8	37.9	41.2
5–8 years old	15.3	17.0	18.2	20.2	24.4	29.1	32.1	34.1	37.4
9–13 years old	18.1	19.9	21.2	23.2	27.3	31.8	34.5	36.3	39.2
14–18 years old	18.8	21.0	22.6	25.2	30.5	36.4	39.8	42.2	46.0
All NSLP participants	18.9	21.0	22.3	24.5	29.2	34.4	37.5	39.6	43.2
5–8 years old	15.9	17.5	18.6	20.4	24.1	28.4	31.0	32.9	36.0
9–13 years old	18.9	20.8	22.1	24.2	28.4	33.0	35.8	37.6	40.9
14–18 years old	21.2	23.7	25.2	28.0	33.6	40.1	43.9	46.5	50.9
Income-eligible NSLP participants	24.7	25.7	26.4	27.5	29.8	32.4	34.0	35.1	36.9
5–8 years old	17.0	18.7	19.9	21.8	25.7	30.3	33.1	35.2	38.5
9–13 years old	22.1	23.7	24.8	26.5	29.9	33.7	35.9	37.4	39.8
14–18 years old	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8
Income-eligible nonparticipants	15.8	17.7	19.0	21.1 *	25.5 *	30.4	33.4	35.5	38.8
5–8 years old	14.3	15.7	16.7	18.3	21.8	25.8	28.2	29.9	32.8
9–13 years old	15.1	16.9	18.2	20.2	24.3	28.7	31.4	33.3	36.3
14–18 years old	17.5	19.9	21.5	24.1	29.5	35.5	39.1	41.6	45.7
Higher income NSLP participants	16.4	18.9	20.6	23.4	29.3	35.9	39.7	42.1	46.4
5–8 years old	15.1	16.5	17.3	18.8	22.0	25.5	27.4	28.5	30.3
9–13 years old	17.0	19.1	20.3	22.5	27.4	32.5	35.6	37.6	41.2
14–18 years old	16.8	20.6	23.3	27.6	36.6	46.9	52.8	56.6	63.3
Higher income nonparticipants	19.0	20.9	22.2	24.2	28.3	32.8	35.5	37.4	40.1
5–8 years old	15.9	18.2	19.7	22.3	27.4	33.2 *	36.8 *	39.2	42.8
9–13 years old	21.1	22.6	23.6	25.2	28.2	31.4	33.3	34.6	36.4
14–18 years old	19.2	21.2	22.6	24.7	29.1	33.8	36.6	38.7	41.7

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	15.6	17.1	18.1	19.8	23.1	26.7	28.9	30.4	32.7
5–8 years old	16.8	17.9	18.8	20.0	22.6	25.3	26.9	28.0	29.7
9–13 years old	16.9	18.3	19.3	20.9	23.9	27.3	29.2	30.6	32.7
14–18 years old	13.5	15.3	16.5	18.5	22.7	27.3	30.1	32.0	35.0
All NSLP participants	18.3	19.8	20.7	22.4	25.6	29.2	31.3	32.7	34.9
5–8 years old	20.3	20.9	21.2	21.8	22.9	24.1	24.7	25.2	25.8
9–13 years old	18.0	19.7	20.9	22.8	26.6	30.8	33.3	35.0	37.5
14–18 years old	17.0	19.0	20.2	22.5	26.7	31.5	34.5	36.3	39.3
Income-eligible NSLP participants	17.2	18.9	20.0	21.8	25.4	29.5	31.8	33.6	36.1
5–8 years old	17.6	18.5	19.2	20.2	22.2	24.3	25.5	26.4	27.6
9–13 years old	16.8	18.7	20.0	22.2	26.5	31.3	34.3	36.4	39.6
14–18 years old	17.4 u	19.3 u	20.6	22.7	26.8	31.5	34.2	36.4	39.3
Income-eligible nonparticipants	14.7	16.0	16.9	18.5	21.7	25.2	27.4	28.8	31.3
5–8 years old	19.7	20.2	20.6	21.2	22.4	23.6	24.2	24.7	25.5
9–13 years old	12.0	13.9	15.1	17.1	21.3	26.2	29.1	31.2	34.5
14–18 years old	13.4	14.9	16.0	17.8	21.5	25.5	28.0	29.7	32.5
Higher income NSLP participants	22.1	23.1	23.6	24.5	26.2	27.8	28.7	29.3	30.3
5–8 years old	23.7	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
9–13 years old	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2
14–18 years old	16.1 u	18.7	19.9	22.6	27.2	31.4	33.8	35.4	38.2
Higher income nonparticipants	16.7	17.9	18.8	20.1	22.9	26.1	28.0	29.3	31.4
5–8 years old	13.2 ***	15.0 **	16.4 *	18.6	22.9	27.9	31.1	33.1	36.7 *
9–13 years old	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.6	23.7
14–18 years old	12.6	14.5	15.9	17.9	22.2	27.0	29.8	31.8	34.9

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.11. Saturated Fat (Percentage of Calorie Intake): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	11.6	(0.10)	924	11.6	(0.16)	664	11.6	(0.19)	1,039	11.4	(0.15)	237	11.6	(0.28)	688	11.8	(0.19)
Boys	1,355	11.6	(0.13)	477	11.5	(0.27)	333	11.7	(0.30)	512	11.6	(0.23)	129	11.3	(0.47)	335	11.7	(0.23)
Girls	1,371	11.5	(0.15)	447	11.7	(0.17)	331	11.5	(0.23)	527	11.3	(0.20)	108	11.9	(0.29)	353	11.9	(0.30)
5–8 years old	853	11.5	(0.15)	339	11.4	(0.20)	254	11.5	(0.19)	298	10.9	(0.23)	78	11.2	(0.38)	198	12.3	(0.41)
Boys	434	11.5	(0.17)	162	11.2	(0.34)	119	11.3	(0.32)	158	10.8	(0.26)	39	11.0	(0.54)	109	12.4 *	(0.45)
Girls	419	11.5	(0.24)	177	11.7	(0.20)	135	11.7	(0.21)	140	11.1	(0.38)	39	11.5	(0.53)	89	12.1	(0.70)
9–13 years old	1,071	11.6	(0.18)	388	11.6	(0.26)	285	11.6	(0.31)	380	11.5	(0.23)	94	11.8	(0.35)	276	11.7	(0.30)
Boys	515	11.7	(0.25)	200	11.4	(0.36)	143	11.7	(0.47)	181	11.3	(0.33)	51	11.3	(0.37)	122	11.9	(0.37)
Girls	556	11.6	(0.25)	188	11.7	(0.37)	142	11.6	(0.40)	199	11.7	(0.31)	43	12.3	(0.60)	154	11.5	(0.47)
14–18 years old	802	11.6	(0.17)	197	11.7	(0.33)	125	11.6	(0.40)	361	11.8	(0.30)	65	11.8	(0.61)	214	11.5	(0.28)
Boys	406	11.8	(0.24)	115	11.8	(0.58)	71	12.0	(0.65)	173	12.4	(0.48)	39	11.6	(1.15)	104	11.1	(0.38)
Girls	396	11.5	(0.26)	82	11.6	(0.28)	54	11.3	(0.47)	188	11.1	(0.33)	26	11.9	(0.34)	110	12.0	(0.42)
Percent of Children Meeting Dietary Guidelines Recommendation																		
All children 5–18 years old	2,726	14.6	(2.57)	924	10.3 u	(3.58)	664	8.4 u	(4.03)	1,039	15.6	(4.04)	237	12.0 u	(5.13)	688	12.8 u	(4.92)
Boys	1,355	14.0	(3.39)	477	13.1 u	(5.68)	333	7.7 u	(5.30)	512	16.4 u	(5.61)	129	18.9 u	(8.65)	335	8.5 u	(8.40)
Girls	1,371	15.2	(3.88)	447	7.3 u	(4.28)	331	9.2 u	(6.10)	527	14.7 u	(5.81)	108	4.7 u	(5.30)	353	17.3	(4.91)
5–8 years old	853	16.7	(4.34)	339	7.9 u	(6.03)	254	5.5 u	(6.44)	298	13.0 u	(5.56)	78	13.2 u	(6.13)	198	18.9	(5.31)
Boys	434	20.1	(4.95)	162	14.8 u	(11.29)	119	0.6 u	(10.63)	158	25.6 u	(10.85)	39	25.9 u	(12.00)	109	14.9 u	(5.92)
Girls	419	13.1 u	(7.21)	177	0.8 u	(3.61)	135	10.6 u	(7.10)	140	0.0	(1.07)	39	0.0	(0.00)	89	23.1 **u	(8.93)
9–13 years old	1,071	17.1	(3.70)	388	19.5	(5.55)	285	19.6 u	(6.72)	380	15.4 u	(7.02)	94	13.3 u	(8.30)	276	16.9 u	(5.94)
Boys	515	17.6 u	(6.19)	200	22.3 u	(9.47)	143	21.4 u	(10.80)	181	16.7 u	(11.53)	51	18.1 u	(14.39)	122	12.4 u	(7.30)
Girls	556	16.7	(3.93)	188	16.6 u	(5.54)	142	17.6 u	(7.84)	199	14.0 u	(7.81)	43	8.2 u	(7.85)	154	21.6 u	(9.45)
14–18 years old	802	10.6 u	(5.01)	197	3.2 u	(6.73)	125	0.0	(7.36)	361	17.6 u	(7.53)	65	9.9 u	(10.41)	214	4.2 u	(11.37)
Boys	406	6.0 u	(5.94)	115	3.1 u	(9.09)	71	0.0	(5.99)	173	9.3 u	(6.53)	39	14.5 u	(16.62)	104	0.0	(21.12)
Girls	396	15.4 u	(8.17)	82	3.3 u	(9.95)	54	0.0	(13.75)	188	26.4 u	(13.86)	26	4.9 u	(12.25)	110	8.7 u	(7.08)

See notes at end of table.

Table E.11a. Saturated Fat (Percentage of Calorie Intake): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	9.2	9.7	10.1	10.6	11.6	12.7	13.2	13.6	14.2
5–8 years old	8.7	9.3	9.7	10.3	11.4	12.6	13.3	13.7	14.4
9–13 years old	8.8	9.4	9.8	10.4	11.6	12.8	13.5	14.0	14.6
14–18 years old	9.9	10.3	10.6	11.0	11.7	12.5	13.0	13.3	13.7
All NSLP participants	9.3	9.8	10.1	10.6	11.5	12.4	12.9	13.2	13.8
5–8 years old	9.4	9.8	10.0	10.4	11.1	11.9	12.3	12.6	13.1
9–13 years old	8.4	9.1	9.5	10.2	11.4	12.7	13.4	13.8	14.6
14–18 years old	10.2	10.5	10.7	11.1	11.7	12.5	12.8	13.1	13.5
Income-eligible NSLP participants	10.3	10.6	10.8	11.1	11.7	12.3	12.6	12.8	13.1
5–8 years old	10.4	10.6	10.7	10.9	11.3	11.6	11.8	12.0	12.2
9–13 years old	8.4	9.1	9.6	10.3	11.6	13.0	13.8	14.3	15.1
14–18 years old	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Income-eligible nonparticipants	9.2	9.7	10.0	10.6	11.6	12.6	13.2	13.6	14.2
5–8 years old	8.9	9.3	9.5	10.0	10.8	11.7	12.1	12.4	12.9
9–13 years old	9.1	9.6	9.9	10.4	11.3	12.3	12.8	13.2	13.7
14–18 years old	9.4	10.1	10.5	11.1	12.4	13.7	14.4	14.9	15.6
Higher income NSLP participants	9.0	9.5	9.8	10.3	11.3	12.3	12.8	13.2	13.7
5–8 years old	8.7	9.2	9.5	10.0	11.0	12.0	12.5	12.8	13.3
9–13 years old	9.1	9.6	9.9	10.3	11.3	12.2	12.7	13.0	13.5
14–18 years old	9.1	9.7	10.0	10.6	11.6	12.7	13.2	13.6	14.1
Higher income nonparticipants	9.6	10.1	10.4	10.9	11.7	12.6	13.1	13.5	13.9
5–8 years old	8.7	9.5	10.0	10.9	12.4	13.9	14.9	15.4	16.3
9–13 years old	9.2	9.8	10.2	10.8	11.9	13.1	13.7	14.2	14.8
14–18 years old	10.7	10.8	10.8	10.9	11.1	11.2	11.3	11.3	11.4

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	9.1	9.6	10.0	10.5	11.5	12.6	13.1	13.5	14.1
5–8 years old	9.3	9.8	10.1	10.6	11.5	12.4	13.0	13.3	13.9
9–13 years old	8.9	9.5	9.9	10.5	11.6	12.8	13.4	13.8	14.4
14–18 years old	9.1	9.6	10.0	10.5	11.5	12.5	13.0	13.4	13.9
All NSLP participants	9.8	10.2	10.5	10.9	11.7	12.4	12.9	13.2	13.6
5–8 years old	10.5	10.8	10.9	11.2	11.7	12.1	12.4	12.6	12.8
9–13 years old	8.9	9.5	9.9	10.5	11.7	12.9	13.6	14.1	14.7
14–18 years old	10.2	10.5	10.7	11.1	11.6	12.2	12.6	12.8	13.1
Income-eligible NSLP participants	10.0	10.3	10.5	10.8	11.5	12.1	12.5	12.8	13.1
5–8 years old	9.5	10.0	10.3	10.7	11.7	12.6	13.1	13.5	14.0
9–13 years old	8.9	9.5	9.9	10.4	11.5	12.6	13.3	13.7	14.4
14–18 years old	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3	11.3
Income-eligible nonparticipants	9.4	9.8	10.1	10.5	11.3	12.0	12.5	12.7	13.2
5–8 years old	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1
9–13 years old	9.1	9.7	10.1	10.6	11.7	12.7	13.3	13.7	14.2
14–18 years old	8.5	9.0	9.4	9.9	11.0	12.1	12.8	13.2	13.8
Higher income NSLP participants	10.2	10.6	10.9	11.3	12.0	12.6	13.0	13.2	13.6
5–8 years old	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5	11.5
9–13 years old	9.5	10.2	10.5	11.2	12.3	13.4	14.1	14.5	15.1
14–18 years old	10.0	10.5	10.7	11.3	12.1	12.7	13.1	13.3	13.7
Higher income nonparticipants	8.7	9.4	9.8	10.5	11.8	13.2	13.9	14.4	15.2
5–8 years old	7.9 **	8.7 *	9.3	10.2	11.9	13.8	14.9 *	15.7 **	16.9 ***
9–13 years old	8.4	9.1	9.6	10.2	11.5	12.8	13.5	14.0	14.7
14–18 years old	9.6	10.1	10.5	11.0	12.0	13.0	13.6	13.9	14.5

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. The 2015–2020 dietary guidelines apply to children 2 years old and older and recommend less than 10 percent of calories per day from saturated fat. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t-tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.12. Linoleic Acid (Grams): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	14.7	(0.25)	924	15.3	(0.45)	664	16.1	(0.59)	1,039	14.5 *	(0.34)	237	14.8	(0.71)	688	14.7	(0.44)
Boys	1,355	15.5	(0.38)	477	15.3	(0.53)	333	15.9	(0.61)	512	14.8	(0.47)	129	14.9	(0.81)	335	16.3	(0.72)
Girls	1,371	14.0	(0.32)	447	15.4	(0.75)	331	16.3	(1.02)	527	14.2	(0.50)	108	14.6	(1.17)	353	13.0	(0.50)
5–8 years old	853	13.2	(0.37)	339	12.8	(0.50)	254	13.0	(0.54)	298	13.6	(0.70)	78	13.1	(0.54)	198	13.3	(0.46)
Boys	434	13.5	(0.57)	162	12.9	(0.77)	119	13.9	(0.80)	158	13.6	(0.94)	39	11.9	(0.57)	109	14.2 **	(0.67)
Girls	419	12.9	(0.47)	177	12.8	(0.63)	135	12.0	(0.73)	140	13.6	(1.04)	39	14.4	(0.92)	89	12.4	(0.62)
9–13 years old	1,071	14.6	(0.31)	388	15.4	(0.53)	285	15.9	(0.65)	380	13.8 **	(0.45)	94	14.8	(1.15)	276	14.6	(0.58)
Boys	515	15.2	(0.38)	200	15.4	(0.77)	143	16.2	(0.94)	181	14.6	(0.70)	51	14.8	(1.28)	122	15.5	(0.61)
Girls	556	14.0	(0.50)	188	15.4	(0.72)	142	15.6	(0.89)	199	12.9 *	(0.57)	43	14.8	(1.94)	154	13.6	(1.00)
14–18 years old	802	16.0	(0.54)	197	17.2	(1.05)	125	18.6	(1.40)	361	15.9	(0.63)	65	15.9	(1.51)	214	15.7	(1.00)
Boys	406	17.1	(0.86)	115	17.0	(1.07)	71	17.1	(1.26)	173	16.0	(0.82)	39	17.4	(1.78)	104	18.6	(1.79)
Girls	396	14.8	(0.64)	82	17.3	(1.85)	54	20.2	(2.56)	188	15.8	(0.96)	26	14.4	(2.48)	110	12.8	(0.82)
Mean Usual Intake as a Percent of Adequate Intake																		
All children 5–18 years old	2,726	128.2	(2.06)	924	133.8	(3.94)	664	140.6	(5.14)	1,039	126.7 *	(3.04)	237	128.4	(6.16)	688	126.7	(3.42)
Boys	1,355	121.8	(2.77)	477	120.3	(3.98)	333	125.7	(4.59)	512	117.4	(3.82)	129	116.6	(5.79)	335	127.9	(4.88)
Girls	1,371	135.0	(3.06)	447	148.0	(6.91)	331	156.2	(9.36)	527	136.3	(4.77)	108	140.8	(11.07)	353	125.5	(4.80)
5–8 years old	853	132.2	(3.70)	339	128.3	(4.98)	254	129.6	(5.42)	298	135.6	(6.99)	78	131.4	(5.39)	198	133.3	(4.56)
Boys	434	135.2	(5.66)	162	129.1	(7.67)	119	138.7	(8.00)	158	135.7	(9.39)	39	119.0	(5.72)	109	141.8 **	(6.66)
Girls	419	129.1	(4.71)	177	127.5	(6.27)	135	120.1	(7.29)	140	135.6	(10.40)	39	144.3	(9.25)	89	124.4	(6.22)
9–13 years old	1,071	133.2	(2.93)	388	140.8	(4.82)	285	145.3	(5.90)	380	125.3 **	(4.07)	94	135.3	(10.93)	276	132.7	(5.53)
Boys	515	126.7	(3.20)	200	128.3	(6.42)	143	135.3	(7.83)	181	121.6	(5.79)	51	122.9	(10.64)	122	129.5	(5.07)
Girls	556	140.0	(4.97)	188	153.9	(7.23)	142	155.7	(8.86)	199	129.3 *	(5.71)	43	148.2	(19.40)	154	136.0	(10.00)
14–18 years old	802	120.6	(3.95)	197	131.3	(8.86)	125	144.4	(12.03)	361	121.2	(5.00)	65	119.6	(12.35)	214	116.1	(6.79)
Boys	406	107.2	(5.37)	115	106.2	(6.71)	71	106.9	(7.88)	173	99.9	(5.15)	39	108.8	(11.10)	104	115.9	(11.19)
Girls	396	134.7	(5.81)	82	157.7	(16.77)	54	183.9	(23.28)	188	143.7	(8.71)	26	131.0	(22.50)	110	116.3	(7.44)

See notes at end of table.

Table E.12a. Linoleic Acid (Grams): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	9.1	10.2	11.0	12.3	15.1	18.1	19.9	21.2	23.3
5–8 years old	8.1	9.1	9.8	10.9	13.2	15.7	17.3	18.4	20.1
9–13 years old	9.8	10.8	11.5	12.6	14.9	17.4	19.0	20.1	21.8
14–18 years old	9.2	10.6	11.6	13.2	16.6	20.5	22.8	24.4	27.0
All NSLP participants	9.2	10.3	11.1	12.3	14.9	17.9	19.6	20.8	22.8
5–8 years old	8.1	9.0	9.7	10.7	12.7	14.9	16.3	17.2	18.7
9–13 years old	9.3	10.4	11.2	12.4	15.0	17.9	19.7	20.9	23.1
14–18 years old	9.8	11.2	12.0	13.5	16.6	20.0	22.0	23.4	25.7
Income-eligible NSLP participants	9.5	10.7	11.5	12.8	15.6	18.6	20.4	21.7	23.6
5–8 years old	7.9	9.1	9.9	11.1	13.6	16.3	17.9	19.1	20.8
9–13 years old	10.2	11.2	12.0	13.2	15.8	18.8	20.6	21.8	23.9
14–18 years old	10.0 u	11.3	12.2	13.7	16.8	20.1	22.1	23.5	25.4
Income-eligible nonparticipants	8.7	9.8	10.6	11.8	14.4	17.3	19.1	20.4	22.4
5–8 years old	7.7	8.7	9.3	10.6	13.1	16.1	17.8	19.1	21.2
9–13 years old	8.2	9.3	10.1	11.4	14.1	17.2	19.1	20.5	22.7
14–18 years old	10.1	11.2	11.9	13.2	15.7	18.4	20.1	21.2	23.1
Higher income NSLP participants	9.5	10.6	11.2	12.3	14.7	17.3	18.8	19.7	21.4
5–8 years old	9.9	10.3	10.6	11.0	11.9	12.8	13.3	13.6	14.1
9–13 years old	9.2	10.2	10.9	11.9	14.4	17.1	18.7	19.8	21.7
14–18 years old	9.5	11.0	12.1	13.7	17.1	20.8	22.9	24.2	26.5
Higher income nonparticipants	10.3	11.4	12.1	13.4	15.9	18.7	20.5	21.8	23.7
5–8 years old	8.3	9.3	10.1	11.3	13.8	16.6 *	18.4	19.6	21.4
9–13 years old	13.5	13.9	14.2	14.6	15.5	16.4	16.9	17.3	17.8
14–18 years old	8.9	10.5	11.7	13.7	17.8	22.5	25.5	27.7	30.9

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	9.4	10.2	10.8	11.8	13.7	15.9	17.2	18.1	19.6
5–8 years old	8.8	9.6	10.1	11.0	12.7	14.6	15.7	16.5	17.7
9–13 years old	11.0	11.6	12.0	12.7	13.9	15.2	16.0	16.5	17.3
14–18 years old	8.3	9.4	10.3	11.5	14.3	17.6	19.5	20.9	23.1
All NSLP participants	11.5	12.2	12.7	13.5	15.2	17.0	18.1	18.9	20.0
5–8 years old	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8	12.8
9–13 years old	9.5	10.5	11.3	12.5	15.0	17.8	19.6	20.8	22.7
14–18 years old	12.5 u	13.4	14.0	15.1	17.1	19.4	20.7	21.6	22.9
Income-eligible NSLP participants	12.2	13.0	13.5	14.4	16.1	18.0	19.1	20.0	21.2
5–8 years old	10.6	10.9	11.1	11.4	12.0	12.6	13.0	13.2	13.6
9–13 years old	8.6	9.8	10.6	12.0	15.0	18.4	20.6	22.2	24.8
14–18 years old	17.0 u	17.7	18.2	18.9	20.2	21.6	22.3	22.9	23.6 u
Income-eligible nonparticipants	8.8	9.8	10.4	11.5	13.8	16.4	17.9	19.0	20.8
5–8 years old	8.6	9.5	10.1	11.1	13.2	15.6	17.0	18.1	19.7
9–13 years old	8.0	8.9	9.5	10.5	12.6	15.0	16.4	17.3	18.9
14–18 years old	9.7	10.8	11.5	12.8	15.4	18.4	20.2	21.3	23.4
Higher income NSLP participants	12.0	12.5	12.8	13.4	14.6	15.7	16.3	16.7	17.5
5–8 years old	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
9–13 years old	14.8 u	14.8	14.8	14.8	14.8	14.8	14.8 u	14.8 u	14.8 u
14–18 years old	7.3	8.9	9.7	11.3	14.4	17.4	19.1	20.3	22.4
Higher income nonparticipants	9.1	9.8	10.2	11.0	12.6	14.6	15.8	16.7	18.1
5–8 years old	6.9 **	7.8 **	8.6 **	9.7 **	12.0	14.7	16.4	17.6	19.5
9–13 years old	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6	13.6
14–18 years old	6.5 u	7.5 u	8.3 u	9.5	12.1	15.4	17.4	18.9	21.4

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Adequate intake is the recommended average daily intake level. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample *t*-tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.13. Linoleic Acid (Percentage of Calorie Intake): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	6.6	(0.09)	924	6.5	(0.17)	664	6.8	(0.22)	1,039	6.9	(0.11)	237	6.2	(0.18)	688	6.6	(0.14)
Boys	1,355	6.4	(0.11)	477	6.0	(0.17)	333	6.2	(0.20)	512	6.6	(0.13)	129	5.8	(0.23)	335	6.7 **	(0.20)
Girls	1,371	6.9	(0.13)	447	7.0	(0.30)	331	7.3	(0.39)	527	7.3	(0.19)	108	6.6	(0.29)	353	6.6	(0.20)
5–8 years old	853	6.4	(0.11)	339	6.2	(0.18)	254	6.1	(0.21)	298	6.6	(0.18)	78	6.4	(0.24)	198	6.3	(0.17)
Boys	434	6.2	(0.17)	162	5.9	(0.24)	119	6.0	(0.30)	158	6.5	(0.27)	39	5.9	(0.26)	109	6.3	(0.26)
Girls	419	6.5	(0.15)	177	6.4	(0.28)	135	6.2	(0.28)	140	6.7	(0.23)	39	6.9	(0.41)	89	6.2	(0.23)
9–13 years old	1,071	6.6	(0.13)	388	6.5	(0.18)	285	6.5	(0.20)	380	6.8	(0.17)	94	6.3	(0.30)	276	6.6	(0.23)
Boys	515	6.4	(0.16)	200	6.2	(0.30)	143	6.4	(0.34)	181	6.7	(0.20)	51	6.1	(0.47)	122	6.6	(0.21)
Girls	556	6.7	(0.22)	188	6.7	(0.19)	142	6.7	(0.20)	199	6.9	(0.26)	43	6.5	(0.37)	154	6.7	(0.42)
14–18 years old	802	6.9	(0.18)	197	6.7	(0.40)	125	7.5	(0.53)	361	7.3	(0.22)	65	5.9	(0.36)	214	6.8	(0.29)
Boys	406	6.5	(0.23)	115	5.9	(0.30)	71	6.2	(0.37)	173	6.6	(0.19)	39	5.5	(0.39)	104	6.9 *	(0.46)
Girls	396	7.4	(0.28)	82	7.6	(0.76)	54	8.7	(1.01)	188	8.1	(0.40)	26	6.4	(0.63)	110	6.7	(0.34)
Percent of Children With Usual Intake Below the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	5.8	(1.65)	924	9.0 u	(2.82)	664	6.7 u	(3.19)	1,039	3.6 u	(1.95)	237	13.4 u	(5.41)	688	6.6 u	(2.73)
Boys	1,355	8.1 u	(2.69)	477	15.6 u	(5.24)	333	10.3 u	(6.08)	512	5.0 u	(3.49)	129	21.0 u	(8.77)	335	4.9 u	(3.00)
Girls	1,371	3.4 u	(1.85)	447	2.1 u	(1.82)	331	2.9 u	(1.42)	527	2.1 u	(1.59)	108	5.4 u	(6.21)	353	8.5 u	(4.64)
5–8 years old	853	4.6 u	(3.40)	339	0.0	(3.80)	254	1.4 u	(4.65)	298	6.8 u	(4.63)	78	0.4 u	(3.78)	198	7.6 u	(5.45)
Boys	434	6.4 u	(6.17)	162	0.0	(7.44)	119	2.8 u	(9.10)	158	10.7 u	(8.35)	39	0.0	(7.14)	109	3.2 u	(6.03)
Girls	419	2.6 u	(2.60)	177	0.0	(0.19)	135	0.0	(0.30)	140	2.7 u	(3.71)	39	0.9 u	(2.09)	89	12.2 u	(9.20)
9–13 years old	1,071	1.4 u	(2.24)	388	11.2 u	(5.33)	285	6.8 u	(4.52)	380	0.0	(2.32)	94	15.4 u	(7.35)	276	0.0 *	(0.13)
Boys	515	2.7 u	(4.35)	200	16.5 u	(9.88)	143	5.5 u	(8.15)	181	0.0	(4.48)	51	29.5 u	(12.32)	122	0.0 *	(0.05)
Girls	556	0.0	(0.51)	188	5.6 u	(3.51)	142	8.1 u	(3.61)	199	0.0 *	(0.78)	43	0.6 u	(7.74)	154	0.0	(0.25)
14–18 years old	802	10.8	(2.97)	197	13.7 u	(4.92)	125	10.5 u	(6.59)	361	4.6 u	(3.28)	65	21.3 u	(12.53)	214	12.2 u	(6.16)
Boys	406	14.3	(3.81)	115	26.3 u	(8.96)	71	20.4 u	(12.74)	173	5.5 u	(5.62)	39	28.7 u	(19.83)	104	10.7 u	(6.72)
Girls	396	7.1 u	(4.59)	82	0.4 u	(3.60)	54	0.0	(1.69)	188	3.8 u	(3.20)	26	13.5 u	(15.03)	110	13.8 u	(10.49)

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Percent of Children With Usual Intake Within the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	92.6	(2.12)	924	90.2	(3.26)	664	92.3	(5.45)	1,039	93.3	(3.06)	237	86.0	(5.46)	688	92.0	(3.05)
Boys	1,355	91.4	(2.83)	477	84.1	(5.31)	333	89.3	(6.31)	512	94.8	(3.84)	129	77.9	(8.80)	335	93.7	(3.79)
Girls	1,371	93.8	(3.16)	447	96.6	(3.69)	331	95.4	(8.99)	527	91.8	(4.81)	108	94.5	(6.33)	353	90.2	(4.83)
5–8 years old	853	95.4	(3.45)	339	100.0	(3.80)	254	98.6	(4.65)	298	92.9	(5.16)	78	99.5	(4.06)	198	92.3	(6.60)
Boys	434	93.6	(6.25)	162	100.0	(7.44)	119	97.2	(9.10)	158	88.9	(9.22)	39	100.0	(7.14)	109	96.8	(10.43)
Girls	419	97.4	(2.66)	177	100.0	(0.19)	135	100.0	(0.30)	140	97.1	(4.33)	39	99.0	(3.68)	89	87.6	(9.50)
9–13 years old	1,071	98.6	(2.30)	388	88.3	(5.60)	285	92.3	(4.99)	380	100.0	(2.43)	94	83.1	(7.50)	276	100.0 *	(0.16)
Boys	515	97.3	(4.46)	200	83.1	(10.15)	143	94.5	(8.51)	181	100.0	(4.69)	51	67.5	(12.52)	122	100.0 **	(0.05)
Girls	556	100.0	(0.57)	188	93.7	(4.30)	142	89.9	(5.02)	199	100.0 *	(0.85)	43	99.4	(7.98)	154	100.0	(0.32)
14–18 years old	802	84.7	(4.61)	197	84.7	(6.40)	125	87.6	(13.51)	361	87.3	(6.94)	65	78.7	(12.56)	214	84.1	(7.24)
Boys	406	84.3	(4.32)	115	73.2	(8.98)	71	78.5	(13.36)	173	94.3	(6.33)	39	71.3	(19.83)	104	85.4	(7.71)
Girls	396	85.1	(8.31)	82	96.7	(9.12)	54	97.1	(23.91)	188	79.9	(12.60)	26	86.4	(15.11)	110	82.8	(12.46)
Percent of Children With Usual Intake Above the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	419	97.4	(2.66)	177	100.0	(0.19)	135	100.0	(0.30)	140	97.1	(4.33)	39	99.0	(3.68)	89	87.6	(9.50)
Boys	1,071	98.6	(2.30)	388	88.3	(5.60)	285	92.3	(4.99)	380	100.0	(2.43)	94	83.1	(7.50)	276	100.0 *	(0.16)
Girls	515	97.3	(4.46)	200	83.1	(10.15)	143	94.5	(8.51)	181	100.0	(4.69)	51	67.5	(12.52)	122	100.0 **	(0.05)
5–8 years old	556	100.0	(0.57)	188	93.7	(4.30)	142	89.9	(5.02)	199	100.0 *	(0.85)	43	99.4	(7.98)	154	100.0	(0.32)
Boys	802	84.7	(4.61)	197	84.7	(6.40)	125	87.6	(13.51)	361	87.3	(6.94)	65	78.7	(12.56)	214	84.1	(7.24)
Girls	406	84.3	(4.32)	115	73.2	(8.98)	71	78.5	(13.36)	173	94.3	(6.33)	39	71.3	(19.83)	104	85.4	(7.71)
9–13 years old	396	85.1	(8.31)	82	96.7	(9.12)	54	97.1	(23.91)	188	79.9	(12.60)	26	86.4	(15.11)	110	82.8	(12.46)
Boys	419	97.4	(2.66)	177	100.0	(0.19)	135	100.0	(0.30)	140	97.1	(4.33)	39	99.0	(3.68)	89	87.6	(9.50)
Girls	1,071	98.6	(2.30)	388	88.3	(5.60)	285	92.3	(4.99)	380	100.0	(2.43)	94	83.1	(7.50)	276	100.0 *	(0.16)
14–18 years old	515	97.3	(4.46)	200	83.1	(10.15)	143	94.5	(8.51)	181	100.0	(4.69)	51	67.5	(12.52)	122	100.0 **	(0.05)
Boys	556	100.0	(0.57)	188	93.7	(4.30)	142	89.9	(5.02)	199	100.0 *	(0.85)	43	99.4	(7.98)	154	100.0	(0.32)
Girls	802	84.7	(4.61)	197	84.7	(6.40)	125	87.6	(13.51)	361	87.3	(6.94)	65	78.7	(12.56)	214	84.1	(7.24)

See notes at end of table.

Table E.13a. Linoleic Acid (Percentage of Calorie Intake): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	4.8	5.1	5.3	5.7	6.4	7.1	7.5	7.8	8.2
5–8 years old	4.9	5.2	5.4	5.7	6.2	6.8	7.1	7.3	7.6
9–13 years old	5.2	5.5	5.6	5.9	6.4	7.0	7.3	7.5	7.8
14–18 years old	4.3	4.8	5.0	5.5	6.4	7.4	8.0	8.4	9.0
All NSLP participants	4.6	4.8	5.0	5.3	6.0	6.6	7.0	7.3	7.8
5–8 years old	5.7	5.7	5.8	5.8	5.9	6.0	6.1	6.1	6.2
9–13 years old	4.3	4.7	4.9	5.3	6.1	7.0	7.5	7.9	8.5
14–18 years old	3.9	4.3	4.5	5.0	5.8	6.7	7.3	7.6	8.3
Income-eligible NSLP participants	4.7	5.0	5.2	5.5	6.2	6.9	7.3	7.5	7.9
5–8 years old	5.2	5.3	5.5	5.7	6.0	6.4	6.6	6.7	6.9
9–13 years old	5.0	5.2	5.4	5.7	6.3	6.9	7.3	7.5	7.9
14–18 years old	4.0	4.5	4.8	5.2	6.2	7.2	7.7	8.1	8.7
Income-eligible nonparticipants	5.2	5.5	5.7	6.0	6.5	7.1	7.5	7.7	8.1
5–8 years old	4.6	5.0	5.2	5.6	6.4	7.3	7.7	8.1	8.6
9–13 years old	6.0	6.1	6.2	6.4	6.7	6.9	7.1	7.2	7.3
14–18 years old	5.0	5.3	5.5	5.9	6.5	7.3	7.7	8.0	8.4
Higher income NSLP participants	4.5	4.7	4.9	5.2	5.7	6.4	6.7	7.0	7.5
5–8 years old	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9	5.9
9–13 years old	3.7	4.1	4.3	4.8	5.9	7.1	7.9	8.4	9.4
14–18 years old	4.3	4.5	4.7	4.9	5.4	6.0	6.3	6.5	6.9
Higher income nonparticipants	5.4	5.7	5.8	6.1	6.6 *	7.2	7.5	7.7	8.0
5–8 years old	5.2	5.4	5.6	5.8	6.3	6.8	7.1	7.3	7.5
9–13 years old	6.6 **	6.6 **	6.6 **	6.6 *	6.6	6.6	6.6	6.6	6.6
14–18 years old	4.5	4.9	5.3	5.8	6.8	7.9	8.6	9.1	9.8

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	5.6	5.8	6.0	6.3	6.8	7.5	7.8	8.1	8.5
5–8 years old	5.2	5.5	5.7	5.9	6.5	7.0	7.3	7.6	7.9
9–13 years old	6.7	6.7	6.7	6.7	6.7	6.7	6.8	6.8	6.8
14–18 years old	4.8	5.3	5.6	6.1	7.2	8.5	9.2	9.7	10.5
All NSLP participants	5.7	5.9	6.1	6.4	6.9	7.5	7.8	8.1	8.4
5–8 years old	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
9–13 years old	4.9	5.3	5.5	5.9	6.6	7.5	7.9	8.3	8.8
14–18 years old	5.8 u	6.2	6.4	6.8	7.5	8.3	8.8	9.1	9.6
Income-eligible NSLP participants	6.2	6.5	6.6	6.8	7.3	7.8	8.1	8.3	8.6
5–8 years old	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
9–13 years old	4.8	5.1	5.4	5.8	6.6	7.6	8.1	8.5	9.2
14–18 years old	7.7 u	7.9	8.1	8.3	8.7	9.2	9.4	9.6	9.8
Income-eligible nonparticipants	5.6	5.9	6.1	6.5	7.2	8.0	8.5	8.8	9.3
5–8 years old	5.2	5.5	5.7	6.1	6.7	7.4	7.7	8.0	8.4
9–13 years old	6.2	6.4	6.4	6.6	6.9	7.2	7.3	7.4	7.6
14–18 years old	5.2	5.7	6.1	6.7	7.9	9.3	10.1	10.7	11.6
Higher income NSLP participants	5.0	5.4	5.6	5.9	6.6	7.2	7.6	7.8	8.2
5–8 years old	5.5	5.8	6.0	6.3	6.9	7.5	7.8	8.1	8.4
9–13 years old	5.4	5.6	5.8	6.0	6.5	7.0	7.3	7.5	7.8
14–18 years old	4.4 u	4.9	5.1	5.6	6.4	7.2	7.7	8.0	8.5

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Higher income nonparticipants	5.2	5.5	5.7	5.9	6.5	7.1	7.5	7.7	8.2
5–8 years old	4.6	4.9	5.2	5.5	6.2	6.9	7.4	7.6	8.1
9–13 years old	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
14–18 years old	4.3	4.8	5.1	5.5	6.5	7.7	8.3	8.8	9.6

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. The acceptable macronutrient distribution range (AMDR) is the range of intakes for macronutrients, as a percentage of calories, associated with reduced risk of chronic disease while providing recommended intakes of other essential nutrients. The AMDR for linoleic acid is 5–10 percent of calories for individuals 1 year old and older. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.14. Linolenic Acid (Grams): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	1.4	(0.03)	924	1.5	(0.06)	664	1.7	(0.08)	1,039	1.4 **	(0.04)	237	1.4	(0.07)	688	1.3	(0.05)
Boys	1,355	1.5	(0.04)	477	1.5	(0.06)	333	1.6	(0.07)	512	1.4 *	(0.05)	129	1.5	(0.09)	335	1.5	(0.08)
Girls	1,371	1.3	(0.04)	447	1.5	(0.10)	331	1.7	(0.13)	527	1.4 *	(0.06)	108	1.3	(0.09)	353	1.2	(0.06)
5–8 years old	853	1.3	(0.05)	339	1.3	(0.06)	254	1.3	(0.07)	298	1.3	(0.07)	78	1.2	(0.09)	198	1.3	(0.07)
Boys	434	1.3	(0.07)	162	1.2	(0.10)	119	1.3	(0.11)	158	1.2	(0.08)	39	1.1	(0.08)	109	1.3	(0.11)
Girls	419	1.3	(0.05)	177	1.3	(0.07)	135	1.2	(0.08)	140	1.3	(0.11)	39	1.4	(0.16)	89	1.2	(0.07)
9–13 years old	1,071	1.4	(0.03)	388	1.5	(0.05)	285	1.6	(0.07)	380	1.3 **	(0.05)	94	1.4	(0.11)	276	1.3	(0.07)
Boys	515	1.4	(0.03)	200	1.5	(0.07)	143	1.6	(0.09)	181	1.4 *	(0.07)	51	1.4	(0.14)	122	1.4	(0.06)
Girls	556	1.3	(0.05)	188	1.5	(0.08)	142	1.6	(0.10)	199	1.3 *	(0.08)	43	1.4	(0.18)	154	1.2	(0.12)
14–18 years old	802	1.5	(0.07)	197	1.7	(0.15)	125	2.0	(0.19)	361	1.6 *	(0.08)	65	1.5	(0.12)	214	1.4	(0.11)
Boys	406	1.7	(0.10)	115	1.7	(0.13)	71	1.8	(0.16)	173	1.6	(0.11)	39	1.7	(0.21)	104	1.7	(0.19)
Girls	396	1.4	(0.09)	82	1.7	(0.27)	54	2.2	(0.35)	188	1.6	(0.13)	26	1.2	(0.13)	110	1.2	(0.09)
Mean Usual Intake as a Percent of Adequate Intake																		
All children 5–18 years old	2,726	126.5	(2.53)	924	136.1	(5.30)	664	148.9	(6.69)	1,039	126.6 **	(3.63)	237	122.7	(5.68)	688	120.2	(4.10)
Boys	1,355	119.6	(3.30)	477	122.9	(4.71)	333	130.0	(5.73)	512	114.3 *	(4.09)	129	115.8	(6.78)	335	121.0	(5.87)
Girls	1,371	133.8	(3.85)	447	150.0	(9.67)	331	168.8	(12.32)	527	139.5 *	(6.08)	108	129.8	(9.20)	353	119.3	(5.72)
5–8 years old	853	141.7	(5.02)	339	140.9	(6.83)	254	144.3	(7.88)	298	142.6	(7.64)	78	135.5	(9.55)	198	142.0	(7.39)
Boys	434	141.2	(8.04)	162	137.6	(10.98)	119	149.5	(12.68)	158	136.5	(9.22)	39	120.0	(8.40)	109	148.6	(12.08)
Girls	419	142.3	(5.92)	177	144.2	(7.97)	135	138.8	(9.19)	140	148.9	(12.28)	39	151.7	(17.44)	89	135.2	(8.31)
9–13 years old	1,071	126.4	(2.70)	388	137.9	(4.95)	285	144.8	(6.11)	380	121.9 **	(4.66)	94	127.3	(10.75)	276	119.2	(6.39)
Boys	515	119.9	(2.34)	200	126.3	(5.77)	143	133.5	(7.60)	181	114.0 *	(5.58)	51	119.9	(11.98)	122	116.8	(5.18)
Girls	556	133.2	(4.96)	188	150.0	(8.15)	142	156.7	(9.65)	199	130.1 *	(7.55)	43	135.0	(18.07)	154	121.8	(11.90)
14–18 years old	802	115.2	(5.08)	197	130.9	(12.53)	125	156.3	(16.08)	361	119.2 *	(6.63)	65	108.6	(8.89)	214	104.7	(7.42)
Boys	406	103.2	(6.19)	115	108.7	(8.03)	71	112.0	(9.86)	173	98.1	(6.78)	39	108.8	(12.86)	104	104.4	(12.04)
Girls	396	128.0	(8.15)	82	154.3	(24.30)	54	203.1	(31.37)	188	141.5	(11.58)	26	108.4	(12.22)	110	104.9	(8.43)

See notes at end of table.

Table E.14a. Linolenic Acid (Grams): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	0.8	0.9	1.0	1.1	1.4	1.7	2.0	2.1	2.3
5–8 years old	0.7	0.8	0.9	1.0	1.2	1.5	1.7	1.8	2.0
9–13 years old	0.9	1.0	1.1	1.2	1.4	1.7	1.8	1.9	2.1
14–18 years old	0.8	0.9	1.0	1.2	1.6	2.0	2.3	2.5	2.8
All NSLP participants	0.9	1.0	1.1	1.2	1.5	1.8	2.0	2.1	2.4
5–8 years old	0.7	0.8	0.9	1.0	1.2	1.5	1.6	1.7	1.9
9–13 years old	1.1	1.2	1.2	1.3	1.5	1.7	1.8	1.9	2.1
14–18 years old	0.8	0.9	1.0	1.2	1.7	2.2	2.5	2.7	3.0
Income-eligible NSLP participants	1.0	1.1	1.2	1.3	1.6	1.9	2.1	2.2	2.4
5–8 years old	0.8	0.9	0.9	1.1	1.3	1.6	1.8	1.9	2.1
9–13 years old	1.1	1.2	1.3	1.4	1.6	1.8	1.9	2.0	2.2
14–18 years old	1.0	1.1	1.2	1.4	1.8	2.2	2.4	2.5	2.8
Income-eligible nonparticipants	0.8	0.9	1.0	1.1	1.4	1.7	1.9	2.0	2.2
5–8 years old	0.6	0.7	0.8	0.9	1.2	1.5	1.7	1.8	2.1
9–13 years old	0.7	0.8	0.9	1.0 *	1.3	1.7	1.9	2.0	2.3
14–18 years old	1.0 u	1.1	1.2	1.3	1.5	1.8	2.0	2.1	2.3
Higher income NSLP participants	0.8	0.9	1.0	1.1	1.4	1.7	1.9	2.0	2.2
5–8 years old	0.8	0.8	0.9	0.9	1.1	1.2	1.3	1.4	1.4
9–13 years old	1.2	1.2	1.2	1.3	1.4	1.6	1.6	1.7	1.8
14–18 years old	0.5 u	0.7	0.9	1.1	1.7	2.3	2.6	2.9	3.3
Higher income nonparticipants	0.9	1.0	1.0	1.2	1.4	1.7	1.9	2.1	2.3
5–8 years old	0.8	0.9	1.0	1.1	1.3	1.6	1.7	1.8	2.0
9–13 years old	1.1	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8
14–18 years old	0.7	0.9	1.0	1.1	1.5	2.1	2.4	2.7	3.1

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	0.9	1.0	1.0	1.1	1.3	1.5	1.7	1.8	1.9
5–8 years old	1.0	1.1	1.1	1.2	1.3	1.4	1.5	1.5	1.6
9–13 years old	0.9	1.0	1.1	1.1	1.3	1.5	1.6	1.7	1.8
14–18 years old	0.8	0.9	1.0	1.1	1.4	1.7	1.9	2.0	2.3
All NSLP participants	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7
5–8 years old	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
9–13 years old	1.1	1.2	1.2	1.3	1.5	1.7	1.8	1.9	2.0
14–18 years old	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7 u	1.7 u
Income-eligible NSLP participants	1.2	1.3	1.4	1.5	1.7	1.9	2.1	2.2	2.4
5–8 years old	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3 u
9–13 years old	0.9	1.0	1.1	1.2	1.5	1.8	2.0	2.2	2.4
14–18 years old	1.4 u	1.6 u	1.7 u	1.9	2.2	2.6	2.8	3.0	3.2 u
Income-eligible nonparticipants	0.8	0.9	1.0	1.1	1.4	1.7	1.8	2.0	2.2
5–8 years old	0.9 u	0.9	1.0	1.1	1.3	1.5	1.7	1.8	2.0
9–13 years old	0.8	0.9	1.0	1.1	1.3	1.5	1.6	1.8	1.9
14–18 years old	0.8	0.9	1.0	1.2	1.5	1.9	2.1	2.3	2.6
Higher income NSLP participants	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
5–8 years old	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
9–13 years old	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
14–18 years old	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Higher income nonparticipants	0.8 **	0.8 *	0.9 *	1.0	1.2	1.4	1.5	1.6	1.8
5–8 years old	1.0	1.0	1.1	1.1	1.2	1.3	1.4	1.4	1.5
9–13 years old	0.8	0.9	0.9	1.0	1.2	1.4	1.5	1.6	1.7
14–18 years old	0.6 u	0.7	0.7	0.8	1.1	1.4	1.6	1.8	2.0

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Adequate intake is the recommended average daily intake level. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.15. Linolenic Acid (Percentage of Calorie Intake): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children 5–18 years old	2,726	0.6	(0.01)	924	0.6	(0.02)	664	0.7	(0.03)	1,039	0.7	(0.02)	237	0.6	(0.02)	688	0.6	(0.02)
Boys	1,355	0.6	(0.01)	477	0.6	(0.02)	333	0.6	(0.02)	512	0.6	(0.02)	129	0.6	(0.03)	335	0.6	(0.02)
Girls	1,371	0.7	(0.02)	447	0.7	(0.04)	331	0.8	(0.05)	527	0.7	(0.03)	108	0.6	(0.03)	353	0.6	(0.02)
5–8 years old	853	0.6	(0.01)	339	0.6	(0.02)	254	0.6	(0.03)	298	0.6	(0.02)	78	0.6	(0.04)	198	0.6	(0.02)
Boys	434	0.6	(0.02)	162	0.6	(0.04)	119	0.6	(0.05)	158	0.6	(0.03)	39	0.5	(0.04)	109	0.6	(0.04)
Girls	419	0.6	(0.02)	177	0.7	(0.03)	135	0.6	(0.03)	140	0.7	(0.03)	39	0.7	(0.07)	89	0.6	(0.02)
9–13 years old	1,071	0.6	(0.01)	388	0.6	(0.02)	285	0.6	(0.02)	380	0.6	(0.02)	94	0.6	(0.03)	276	0.6	(0.03)
Boys	515	0.6	(0.01)	200	0.6	(0.02)	143	0.6	(0.03)	181	0.6	(0.02)	51	0.6	(0.03)	122	0.6	(0.03)
Girls	556	0.6	(0.02)	188	0.6	(0.02)	142	0.7	(0.02)	199	0.7	(0.03)	43	0.6	(0.05)	154	0.6	(0.05)
14–18 years old	802	0.7	(0.02)	197	0.7	(0.06)	125	0.8	(0.07)	361	0.7	(0.04)	65	0.5	(0.04)	214	0.6	(0.03)
Boys	406	0.6	(0.03)	115	0.6	(0.04)	71	0.7	(0.05)	173	0.6	(0.03)	39	0.6	(0.06)	104	0.6	(0.04)
Girls	396	0.7	(0.04)	82	0.7	(0.11)	54	0.9	(0.13)	188	0.8	(0.07)	26	0.5	(0.06)	110	0.6	(0.04)
Percent of Children With Usual Intake Below the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	40.5	(5.67)	924	30.6 u	(9.62)	664	27.7	(7.82)	1,039	30.9	(7.04)	237	78.7 u	(24.61)	688	42.8 u	(17.49)
Boys	1,355	51.7	(6.02)	477	54.6	(9.43)	333	46.0	(10.31)	512	44.2	(12.37)	129	79.1 u	(28.31)	335	36.0 u	(31.68)
Girls	1,371	28.8 u	(9.75)	447	5.5 u	(17.05)	331	8.5 u	(11.82)	527	16.9 u	(6.30)	108	78.2 u	(40.76)	353	49.8	(13.46)
5–8 years old	853	38.4	(10.66)	339	32.7	(5.89)	254	31.4 u	(17.01)	298	41.7	(11.43)	78	46.8 u	(24.75)	198	46.6 u	(29.98)
Boys	434	59.1	(8.91)	162	64.0	(11.55)	119	61.5	(17.70)	158	57.9	(12.66)	39	71.0	(13.69)	109	56.9 u	(42.33)
Girls	419	16.9 u	(19.69)	177	0.0	(0.00)	135	0.0	(29.44)	140	24.9 u	(19.25)	39	21.5 u	(48.49)	89	35.9 u	(42.45)
9–13 years old	1,071	39.6 u	(12.82)	388	31.3 u	(16.22)	285	31.6 u	(15.92)	380	24.1	(4.64)	94	100.0 u	(61.50)	276	26.5 u	(42.71)
Boys	515	47.5	(13.79)	200	46.4 u	(23.28)	143	39.3 u	(23.12)	181	47.2	(6.57)	51	100.0 u	(78.68)	122	0.0	(82.38)
Girls	556	31.3 u	(21.92)	188	15.5 u	(22.54)	142	23.4 u	(21.83)	199	0.0	(6.56)	43	100.0 u	(95.19)	154	54.2	(14.43)
14–18 years old	802	43.0	(4.59)	197	28.5 u	(20.44)	125	21.3 u	(7.30)	361	29.2 u	(16.41)	65	82.2 u	(25.20)	214	55.5	(8.32)
Boys	406	50.3	(6.83)	115	55.4	(9.04)	71	40.9	(10.70)	173	31.2 u	(31.39)	39	65.2	(10.76)	104	54.8	(12.48)
Girls	396	35.3	(6.07)	82	0.0	(40.90)	54	0.6 u	(9.90)	188	27.0 *	(6.45)	26	100.0 u	(50.51)	110	56.2	(10.90)

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Percent of Children With Usual Intake Within the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	59.2	(5.67)	924	69.2	(9.71)	664	71.3	(8.35)	1,039	67.7	(7.24)	237	21.0 u	(24.62)	688	57.1 u	(17.48)
Boys	1,355	48.2	(6.00)	477	45.0	(9.49)	333	53.8	(10.27)	512	55.8	(12.37)	129	20.3 u	(28.32)	335	63.8 u	(31.67)
Girls	1,371	70.7	(9.75)	447	94.5	(17.23)	331	89.6	(13.30)	527	80.3	(7.20)	108	21.8 u	(40.76)	353	50.1	(13.41)
5–8 years old	853	61.6	(10.65)	339	67.3	(5.86)	254	68.6	(17.00)	298	58.3	(11.44)	78	53.2 u	(24.74)	198	53.4 u	(29.98)
Boys	434	40.9	(8.90)	162	36.0 u	(11.48)	119	38.5 u	(17.69)	158	42.1 u	(12.66)	39	29.0 u	(13.65)	109	43.1 u	(42.32)
Girls	419	83.1	(19.69)	177	100.0	(0.00)	135	100.0	(29.44)	140	75.1	(19.28)	39	78.5 u	(48.49)	89	64.1 u	(42.45)
9–13 years old	1,071	60.4	(12.83)	388	68.7	(16.22)	285	68.4	(15.97)	380	75.9	(4.64)	94	0.0	(61.50)	276	73.5 u	(42.71)
Boys	515	52.5	(13.79)	200	53.6 u	(23.28)	143	60.7 u	(23.12)	181	52.8	(6.56)	51	0.0	(78.68)	122	100.0 u	(82.38)
Girls	556	68.7 u	(21.92)	188	84.5	(22.55)	142	76.6	(21.97)	199	100.0	(6.56)	43	0.0	(95.19)	154	45.7 u	(14.46)
14–18 years old	802	56.2	(4.57)	197	71.0	(20.76)	125	76.0	(10.75)	361	67.1	(17.05)	65	17.0 u	(25.22)	214	44.3	(8.07)
Boys	406	49.5	(6.76)	115	43.4	(9.53)	71	58.6	(10.46)	173	68.8 u	(31.39)	39	33.1 u	(10.94)	104	44.9	(12.23)
Girls	396	63.3	(6.12)	82	100.0 u	(41.45)	54	94.2	(19.13)	188	65.2	(11.45)	26	0.0	(50.51)	110	43.6	(10.43)
Percent of Children With Usual Intake Above the Acceptable Macronutrient Distribution Range																		
All children 5–18 years old	2,726	0.3 u	(0.44)	924	0.2 u	(0.40)	664	1.0 u	(2.40)	1,039	1.4 u	(1.37)	237	0.3 u	(0.31)	688	0.1 u	(0.24)
Boys	1,355	0.1 u	(0.14)	477	0.4 u	(0.47)	333	0.2 u	(0.23)	512	0.0 u	(0.07)	129	0.6 u	(0.61)	335	0.1 u	(0.27)
Girls	1,371	0.5 u	(0.88)	447	0.0	(0.66)	331	1.9 u	(4.90)	527	2.9 u	(2.81)	108	0.0	(0.00)	353	0.1 u	(0.41)
5–8 years old	853	0.0 u	(0.01)	339	0.0	(0.06)	254	0.0	(0.04)	298	0.0 u	(0.07)	78	0.0	(0.05)	198	0.0	(0.04)
Boys	434	0.0 u	(0.02)	162	0.0	(0.12)	119	0.0	(0.08)	158	0.0 u	(0.10)	39	0.0	(0.10)	109	0.0	(0.02)
Girls	419	0.0	(0.00)	177	0.0	(0.00)	135	0.0	(0.00)	140	0.0	(0.10)	39	0.0	(0.00)	89	0.0	(0.07)
9–13 years old	1,071	0.0	(0.01)	388	0.0	(0.01)	285	0.0	(0.25)	380	0.0 u	(0.09)	94	0.0	(0.00)	276	0.1 u	(0.11)
Boys	515	0.0	(0.00)	200	0.0	(0.00)	143	0.0	(0.04)	181	0.0 u	(0.17)	51	0.0	(0.00)	122	0.0	(0.00)
Girls	556	0.0	(0.02)	188	0.0	(0.03)	142	0.0	(0.51)	199	0.0	(0.00)	43	0.0	(0.00)	154	0.2 u	(0.22)
14–18 years old	802	0.8 u	(1.18)	197	0.6 u	(1.09)	125	2.7 u	(6.47)	361	3.8 u	(3.71)	65	0.8 u	(0.84)	214	0.3 u	(0.65)
Boys	406	0.3 u	(0.37)	115	1.2 u	(1.26)	71	0.5 u	(0.63)	173	0.0	(0.05)	39	1.7 u	(1.64)	104	0.3 u	(0.73)
Girls	396	1.4 u	(2.40)	82	0.0	(1.80)	54	5.1 u	(13.28)	188	7.8 u	(7.62)	26	0.0	(0.00)	110	0.2 u	(1.10)

See notes at end of table.

Table E.15a. Linolenic Acid (Percentage of Calorie Intake): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.8
5–8 years old	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
9–13 years old	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8
14–18 years old	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9
All NSLP participants	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.8	0.8
5–8 years old	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8
9–13 years old	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.7
14–18 years old	0.3	0.4	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Income-eligible NSLP participants	0.4	0.5	0.5	0.5	0.6	0.7	0.8	0.8	0.8
5–8 years old	0.4	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.8
9–13 years old	0.5	0.5	0.5	0.6	0.6	0.7	0.7	0.7	0.8
14–18 years old	0.4	0.4	0.5	0.5	0.6	0.8	0.8	0.9	1.0
Income-eligible nonparticipants	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.8
5–8 years old	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
9–13 years old	0.4	0.5	0.5	0.5	0.6	0.7	0.8	0.8	0.8
14–18 years old	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8
Higher income NSLP participants	0.4	0.4	0.5	0.5	0.6	0.6	0.7	0.7	0.8
5–8 years old	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.7	0.7
9–13 years old	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
14–18 years old	0.3 u	0.3	0.3	0.4	0.5	0.7	0.8	0.9	1.0
Higher income nonparticipants	0.5	0.5	0.5	0.5	0.6	0.7	0.7	0.7	0.8
5–8 years old	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.7
9–13 years old	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
14–18 years old	0.4	0.4	0.4	0.5	0.6	0.7	0.8	0.8	0.9

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	0.5	0.5	0.6	0.6	0.7	0.7	0.8	0.8	0.9
5–8 years old	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
9–13 years old	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8
14–18 years old	0.4	0.5	0.5	0.6	0.7	0.8	0.9	0.9	1.0
All NSLP participants	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
5–8 years old	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
9–13 years old	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
14–18 years old	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7 u	0.7 u
Income-eligible NSLP participants	0.6	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.9
5–8 years old	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
9–13 years old	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8
14–18 years old	0.7 u	0.7 u	0.8	0.8	0.9	1.0	1.1	1.1	1.2
Income-eligible nonparticipants	0.5	0.6	0.6	0.6	0.7	0.8	0.8	0.9	1.0
5–8 years old	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8
9–13 years old	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
14–18 years old	0.4	0.5	0.5	0.6	0.7	0.9	1.1	1.1	1.3
Higher income NSLP participants	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
5–8 years old	0.6 u	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8
9–13 years old	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
14–18 years old	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Higher income nonparticipants	0.4	0.5	0.5	0.5	0.6	0.7	0.7	0.8	0.8
5–8 years old	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
9–13 years old	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9 *
14–18 years old	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.9

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. The acceptable macronutrient distribution range (AMDR) is the range of intakes for macronutrients, as a percentage of calories, associated with reduced risk of chronic disease while providing recommended intakes of other essential nutrients. The AMDR for linolenic acid is 0.6–1.2 percent of calories for individuals 1 year old and older. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.16. Cholesterol (Milligrams): Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
All children 5–18 years old	2,726	211	(3.9)	924	229	(7.6)	664	229	(10.7)	1,039	197 **	(5.2)	237	236	(13.5)	688	206	(7.8)
Boys	1,355	235	(5.9)	477	252	(12.8)	333	246	(16.7)	512	213	(7.2)	129	273	(22.9)	335	237	(11.3)
Girls	1,371	185	(5.2)	447	205	(7.8)	331	211	(13.2)	527	181 *	(7.4)	108	196	(13.9)	353	175	(10.8)
5–8 years old	853	186	(7.5)	339	185	(9.5)	254	201	(10.3)	298	173 *	(8.4)	78	155	(12.7)	198	201 *	(16.7)
Boys	434	198	(12.0)	162	189	(15.8)	119	209	(15.0)	158	175	(11.0)	39	162	(20.8)	109	227 *	(25.0)
Girls	419	173	(8.6)	177	180	(10.3)	135	191	(14.1)	140	170	(12.8)	39	147	(14.3)	89	173	(22.0)
9–13 years old	1,071	210	(5.2)	388	235	(11.2)	285	230	(12.4)	380	189 **	(5.8)	94	262	(28.1)	276	200 *	(12.5)
Boys	515	231	(6.3)	200	248	(17.1)	143	240	(13.8)	181	196 **	(7.8)	51	289	(44.3)	122	236	(17.7)
Girls	556	189	(8.2)	188	221	(14.1)	142	220	(20.8)	199	181	(8.6)	43	233	(33.9)	154	162	(17.7)
14–18 years old	802	230	(7.6)	197	256	(16.0)	125	250	(25.4)	361	223	(11.2)	65	271	(23.0)	214	217 *	(12.2)
Boys	406	266	(11.7)	115	302	(28.1)	71	280	(41.7)	173	256	(16.0)	39	340	(42.3)	104	244 *	(17.3)
Girls	396	192	(9.6)	82	208	(14.2)	54	218	(27.9)	188	189	(15.5)	26	199	(15.4)	110	188	(17.0)

See notes at end of table.

Table E.16a. Cholesterol (Milligrams): Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	121	139	153	175	224	283	319	346	389
5–8 years old	120	133	143	158	192	230	254	271	298
9–13 years old	132	148	161	180	222	272	303	326	361
14–18 years old	111	134	152	182	249	332	383	421	483
All NSLP participants	146	163	175	195	241	296	330	354	396
5–8 years old	187	188	188	188	189	190	190	191	191
9–13 years old	142	160	173	194	240	291	324	346	385
14–18 years old	118	147	166	201	280	379	441	484	560
Income-eligible NSLP participants	161	176	187	204	241	282	307	324	351
5–8 years old	158	168	175	186	207	230	244	255	270
9–13 years old	147	163	174	193	233	279	307	326	358
14–18 years old	177 u	195 u	207	229	273	323	353	375	406 u
Income-eligible nonparticipants	100	117	130	151	200	259	297	325	372
5–8 years old	87	100	109	126	163	211	242	266	306
9–13 years old	111	125	136	153	189	231	257	277	308
14–18 years old	99	123	140	169	237	321	375	414	481
Higher income NSLP participants	156	176	189	212	263	323	360	384	427
5–8 years old	162	162	162	162	162	162	162	162	162
9–13 years old	190 u	208 u	220	239	283	331	360	379	414
14–18 years old	118	154	180	223	319	437	507	553	636
Higher income nonparticipants	138	155	167	186	228	277	308	331	366
5–8 years old	132 u	149	160	180	219	266	295	316	347
9–13 years old	142	158	169	187	227	275	306	329	363
14–18 years old	137 u	156	169	189	235	287	320	345	383

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	103	117	127	143	178	220	245	264	293
5–8 years old	107	119	128	141	169	200	219	232	254
9–13 years old	101	116	126	144	181	225	252	273	305
14–18 years old	101	116	127	144	183	229	258	279	312
All NSLP participants	126	140	149	166	199	238	262	278	304
5–8 years old	106	119	127	141	173	211	234	252	279
9–13 years old	130	145	157	175	214	259	287	307	336
14–18 years old	137	150	159	174	204	237	258	271	291
Income-eligible NSLP participants	161	170	176	187	208	232	247	258	274
5–8 years old	129	140	148	160	187	217	236	250	270
9–13 years old	128	145	156	175	213	258	285	305	336
14–18 years old	217 u	218	218	218	218	218	218	218	218 u
Income-eligible nonparticipants	109	121	129	143	174	211	234	250	278
5–8 years old	149	153	156	160	169	179	183	187	192
9–13 years old	94	108	119	136	173	217	244	264	297
14–18 years old	93	108	119	138	179	229	262	284	323
Higher income NSLP participants	113	130	139	158	194	231	254	269	295
5–8 years old	89 u	100 u	106 u	117	142	171	189	203	223
9–13 years old	161	175	184	199	229	262	284	296 u	318 u
14–18 years old	85	110	122	148	198	246	275	294	328
Higher income nonparticipants	88	101	112	128	165	210	239	261	297
5–8 years old	80	94	106	125	164	211	242	264	300
9–13 years old	90 u	102	111	124	154	191	214	231	259
14–18 years old	91	106	117	135	176	228	261	287	329

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design.

u Indicates individual estimates did not meet the standards of reliability or precision because of large coefficient of variation

Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.17. Calories: Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Mean Usual Intake																		
All children	2,726	1,972	(20.9)	924	2,124	(44.7)	664	2,128	(44.9)	1,039	1,857 ***	(27.9)	237	2,141	(82.5)	688	1,965	(34.8)
5–18 years old																		
Boys	1,355	2,146	(34.2)	477	2,281	(74.8)	333	2,269	(67.9)	512	1,984 ***	(41.0)	129	2,335	(127.9)	335	2,174	(51.0)
Girls	1,371	1,790	(23.2)	447	1,960	(47.3)	331	1,980	(58.4)	527	1,724 ***	(37.8)	108	1,937	(102.9)	353	1,747	(47.2)
5–8 years old	853	1,836	(29.0)	339	1,847	(44.3)	254	1,874	(50.2)	298	1,799	(53.8)	78	1,820	(53.2)	198	1,877	(56.7)
Boys	434	1,928	(43.7)	162	1,951	(75.1)	119	2,055	(77.8)	158	1,825 *	(65.4)	39	1,798	(71.4)	109	2,005 *	(60.5)
Girls	419	1,739	(37.8)	177	1,739	(45.4)	135	1,685	(62.6)	140	1,772	(86.2)	39	1,842	(79.1)	89	1,744	(97.2)
9–13 years old	1,071	1,985	(30.5)	388	2,133	(57.8)	285	2,171	(68.4)	380	1,816 ***	(45.7)	94	2,095	(125.3)	276	1,970	(55.9)
Boys	515	2,110	(46.8)	200	2,209	(88.5)	143	2,274	(95.2)	181	1,948 **	(69.6)	51	2,184	(175.4)	122	2,113	(81.2)
Girls	556	1,853	(38.8)	188	2,054	(73.5)	142	2,063	(98.3)	199	1,677 ***	(58.7)	43	2,002	(179.2)	154	1,820	(76.5)
14–18 years old	802	2,063	(43.2)	197	2,324	(102.4)	125	2,276	(95.3)	361	1,941 **	(46.6)	65	2,425	(184.0)	214	2,027 *	(64.9)
Boys	406	2,342	(74.0)	115	2,597	(174.6)	71	2,423	(148.0)	173	2,137	(73.8)	39	2,878	(297.2)	104	2,357	(104.3)
Girls	396	1,768	(42.2)	82	2,036	(101.7)	54	2,122	(118.2)	188	1,735 **	(55.8)	26	1,947	(211.5)	110	1,679	(75.1)

See notes at end of table.

Table E.17a. Calories: Percentile Distribution of Mean Usual Intakes for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Boys									
All children 5–18 years old	1,485	1,613	1,704	1,843	2,122	2,420	2,591	2,710	2,892
5–8 years old	1,348	1,458	1,537	1,658	1,905	2,165	2,321	2,427	2,593
9–13 years old	1,566	1,676	1,752	1,865	2,094	2,334	2,472	2,567	2,709
14–18 years old	1,510	1,667	1,783	1,961	2,311	2,693	2,907	3,057	3,289
All NSLP participants	1,616	1,750	1,837	1,977	2,256	2,557	2,731	2,847	3,040
5–8 years old	1,416	1,520	1,595	1,708	1,928	2,171	2,315	2,411	2,572
9–13 years old	1,668	1,782	1,857	1,971	2,197	2,431	2,566	2,654	2,804
14–18 years old	1,717	1,891	1,999	2,183	2,556	2,966	3,198	3,354	3,614
Income-eligible NSLP participants	1,683	1,801	1,878	2,005	2,251	2,512	2,662	2,765	2,918
5–8 years old	1,447	1,568	1,648	1,778	2,027	2,302	2,465	2,581	2,754
9–13 years old	1,824	1,917	1,977	2,074	2,263	2,461	2,574	2,647	2,767
14–18 years old	1,725	1,866	1,956	2,109	2,407	2,718	2,893	3,014	3,183
Income-eligible nonparticipants	1,378	1,497	1,577	1,704	1,960 **	2,235	2,394	2,505	2,681
5–8 years old	1,245	1,352	1,423	1,548	1,795	2,069	2,227	2,337	2,517
9–13 years old	1,374	1,486	1,567	1,686	1,926	2,182	2,333	2,439	2,604
14–18 years old	1,481	1,615	1,700	1,838	2,116	2,408	2,577	2,693	2,878
Higher income NSLP participants	1,666	1,808	1,896	2,037	2,324	2,618	2,781	2,882	3,054
5–8 years old	1,443	1,518	1,561	1,636	1,793	1,956	2,043	2,092	2,173
9–13 years old	1,590	1,714	1,788	1,910	2,173	2,432	2,581	2,677	2,842
14–18 years old	1,904 u	2,112	2,248	2,456	2,862	3,289	3,521	3,665	3,914
Higher income nonparticipants	1,513	1,645	1,734	1,874	2,149	2,443	2,618	2,740	2,915
5–8 years old	1,376	1,496	1,577	1,713	1,973	2,264	2,440 *	2,559 *	2,736
9–13 years old	1,607	1,714	1,784	1,892	2,100	2,320	2,448	2,536	2,658
14–18 years old	1,526	1,691	1,804	1,979	2,328	2,694	2,912	3,068	3,292

Subgroup	5th	10th	15th	25th	50th	75th	85th	90th	95th
Girls									
All children 5–18 years old	1,253	1,358	1,431	1,543	1,769	2,013	2,154	2,253	2,402
5–8 years old	1,308	1,394	1,453	1,544	1,724	1,917	2,028	2,103	2,223
9–13 years old	1,305	1,412	1,486	1,604	1,833	2,081	2,224	2,325	2,475
14–18 years old	1,161	1,279	1,360	1,484	1,742	2,021	2,183	2,296	2,467
All NSLP participants	1,424	1,527	1,597	1,712	1,935	2,182	2,328	2,426	2,573
5–8 years old	1,422	1,488	1,531	1,597	1,729	1,870	1,950	2,006	2,087
9–13 years old	1,427	1,544	1,629	1,761	2,026	2,315	2,486	2,605	2,775
14–18 years old	1,423	1,541	1,616	1,753	2,004	2,290	2,462	2,571	2,746
Income-eligible NSLP participants	1,368	1,488	1,568	1,698	1,952	2,232	2,395	2,517	2,690
5–8 years old	1,373	1,437	1,480	1,547	1,677	1,815	1,892	1,947	2,027
9–13 years old	1,367	1,507	1,598	1,751	2,041	2,349	2,530	2,657	2,847
14–18 years old	1,366	1,509	1,606	1,762	2,073	2,433	2,644	2,811	3,039
Income-eligible nonparticipants	1,154	1,265	1,339	1,458	1,702 **	1,961 *	2,113	2,216	2,382
5–8 years old	1,260	1,358	1,425	1,528	1,751	1,986	2,119	2,217	2,369
9–13 years old	1,054	1,176	1,256	1,385	1,648 **	1,934 *	2,100	2,217	2,400
14–18 years old	1,170	1,280	1,352	1,477	1,716	1,969 *	2,119	2,215	2,376
Higher income NSLP participants	1,590	1,668	1,709	1,786	1,933	2,080	2,167	2,228	2,324
5–8 years old	1,323	1,427	1,491	1,594	1,815	2,055	2,204	2,314	2,469
9–13 years old	1,983	1,987	1,990	1,994	2,002	2,009	2,014	2,016	2,021 u
14–18 years old	1,415	1,542	1,603	1,731	1,956	2,166	2,286	2,367	2,505
Higher income nonparticipants	1,256	1,349	1,418	1,518	1,723	1,951	2,083	2,176	2,323
5–8 years old	1,240	1,334	1,409	1,517	1,725	1,950	2,085	2,173	2,318
9–13 years old	1,482	1,554	1,600	1,669	1,810	1,962	2,045	2,104	2,194
14–18 years old	1,051	1,164	1,248	1,374	1,638	1,941	2,117	2,246	2,449

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. Estimates are based on two dietary recalls per person. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Usual intake was estimated using the National Cancer Institute method. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Standard errors were estimated using balanced repeated replication to account for complex survey design. Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 and day 2 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.

Table E.18. Saturated Fats and Added Sugars (Percentage of Calorie Intake): Mean Intakes on a Given Day for NSLP Participants and Nonparticipants by Age and Gender

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Percent of Calories From Saturated Fat																		
All children 5–18 years old	2,725	11.6	(0.09)	924	11.6	(0.18)	664	11.7	(0.23)	1,038	11.4	(0.15)	237	11.6	(0.27)	688	11.6	(0.18)
Boys	1,355	11.6	(0.13)	477	11.5	(0.27)	333	11.7	(0.30)	512	11.6	(0.20)	129	11.3	(0.47)	335	11.7	(0.22)
Girls	1,370	11.5	(0.13)	447	11.7	(0.18)	331	11.5	(0.27)	526	11.3	(0.20)	108	12.0	(0.27)	353	11.6	(0.28)
5–8 years old	853	11.5	(0.17)	339	11.5	(0.22)	254	11.6	(0.25)	298	10.8 *	(0.24)	78	11.4	(0.37)	198	12.2	(0.41)
Boys	434	11.5	(0.19)	162	11.3	(0.30)	119	11.4	(0.38)	158	10.7	(0.27)	39	11.3	(0.52)	109	12.4	(0.42)
Girls	419	11.5	(0.26)	177	11.8	(0.23)	135	11.8	(0.25)	140	10.9	(0.38)	39	11.5	(0.44)	89	11.9	(0.68)
9–13 years old	1,071	11.6	(0.17)	388	11.6	(0.26)	285	11.6	(0.33)	380	11.6	(0.26)	94	11.8	(0.36)	276	11.7	(0.35)
Boys	515	11.7	(0.24)	200	11.5	(0.37)	143	11.6	(0.44)	181	11.4	(0.40)	51	11.4	(0.44)	122	12.0	(0.37)
Girls	556	11.6	(0.23)	188	11.7	(0.33)	142	11.6	(0.41)	199	11.7	(0.32)	43	12.3	(0.59)	154	11.4	(0.50)
14–18 years old	801	11.5	(0.19)	197	11.7	(0.33)	125	11.8	(0.40)	360	11.7	(0.34)	65	11.6	(0.55)	214	11.2	(0.26)
Boys	406	11.7	(0.25)	115	11.7	(0.53)	71	12.1	(0.63)	173	12.5	(0.47)	39	11.3	(0.98)	104	10.8	(0.39)
Girls	395	11.4	(0.25)	82	11.7	(0.30)	54	11.3	(0.52)	187	11.1	(0.38)	26	12.1	(0.32)	110	11.6	(0.41)

Subgroup	All School Children			All NSLP Participants			Income-Eligible NSLP Participants			Income-Eligible Nonparticipants			Higher Income NSLP Participants			Higher Income Nonparticipants		
	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error	Sample Size	Mean	Standard Error
Percent of Calories From Added Sugars																		
All children 5–18 years old	2,725	14.0	(0.27)	924	13.3	(0.39)	664	13.2	(0.51)	1,038	14.1	(0.41)	237	13.1	(0.51)	688	14.6 *	(0.52)
Boys	1,355	14.1	(0.32)	477	13.3	(0.46)	333	13.1	(0.58)	512	14.0	(0.53)	129	13.1	(0.69)	335	15.2 *	(0.54)
Girls	1,370	13.9	(0.38)	447	13.2	(0.55)	331	13.2	(0.72)	526	14.2	(0.52)	108	12.9	(0.59)	353	13.9	(0.78)
5–8 years old	853	13.9	(0.42)	339	13.1	(0.55)	254	13.1	(0.63)	298	14.7	(0.67)	78	13.1	(0.91)	198	14.1	(0.60)
Boys	434	14.1	(0.43)	162	12.8	(0.64)	119	13.0	(0.87)	158	15.3	(0.82)	39	12.6	(0.95)	109	14.5	(0.72)
Girls	419	13.6	(0.55)	177	13.4	(0.78)	135	13.3	(0.82)	140	14.0	(0.98)	39	13.8	(1.54)	89	13.4	(0.77)
9–13 years old	1,071	13.7	(0.51)	388	12.2	(0.48)	285	12.6	(0.63)	380	13.9	(0.75)	94	10.8	(0.52)	276	15.1 ***	(1.06)
Boys	515	14.0	(0.53)	200	12.1	(0.59)	143	12.4	(0.75)	181	13.9	(1.22)	51	10.5	(0.72)	122	16.4 ***	(0.88)
Girls	556	13.5	(0.79)	188	12.4	(0.71)	142	12.7	(0.88)	199	13.8	(0.71)	43	11.2	(1.03)	154	14.1	(1.85)
14–18 years old	801	14.4	(0.36)	197	14.4	(0.72)	125	13.8	(0.88)	360	14.0	(0.59)	65	15.1	(0.99)	214	14.4	(0.73)
Boys	406	14.3	(0.42)	115	14.9	(0.80)	71	13.9	(0.97)	173	13.0	(0.72)	39	16.1	(1.45)	104	14.7	(0.82)
Girls	395	14.5	(0.56)	82	13.8	(1.26)	54	13.7	(1.45)	187	14.9	(0.90)	26	13.9	(1.48)	110	14.0	(0.99)

Notes: “All school children” includes children with missing NSLP participation or income. “All NSLP participants” includes children with missing income. The 2015–2020 dietary guidelines recommend consuming less than 10 percent of calories per day from saturated fat and less than 10 percent of calories per day from added sugars. Estimates are based on the day 1 dietary recall. The data reflect nutrient intakes from foods and beverages but do not include the contribution of vitamin and mineral supplements. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population to ensure different age distributions of NSLP participants and nonparticipants are accounted for. Significant differences in estimates are noted by * $p < .05$, ** $p < .01$, or *** $p < .001$. Differences were tested using two-sample t -tests comparing NSLP participants with nonparticipants within income and age groups. NSLP participants are identified as school children likely to have received a reimbursable school lunch on the intake day (see appendix A). Source: National Health and Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls. Sample includes NHANES children 5–18 years old with complete day 1 dietary recall data, where day 1 recall was on a weekday, who attend a school that serves lunch, and who did not eat all lunch foods at home on the day of dietary recall.