

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



Appendix B. Healthy Eating Index



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Appendix B. Healthy Eating Index



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Appendix B. Healthy Eating Index

Table B.1. Healthy Eating Index-2015 Scores for Young Children WIC Participants and Nonparticipants by Age and Gender

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
All Young Children 2–4 Years Old									
Both genders									
Sample size	–	1,724	–	627	–	586	–	504	–
Total fruits	5	5.0	(0.04)	5.0	(0.07)	4.9	(0.10)	4.8	(0.11)
Whole fruits	5	5.0	(0.01)	4.9	(0.12)	4.8	(0.13)	5.0	(0.04)
Total vegetables	5	2.1	(0.06)	2.3	(0.11)	2.1	(0.09)	2.0	(0.11)
Greens and beans	5	1.6	(0.14)	2.1	(0.26)	1.4 *	(0.20)	1.6	(0.21)
Whole grains	10	3.2	(0.14)	3.0	(0.21)	2.8	(0.20)	3.8 *	(0.27)
Dairy	10	9.9	(0.11)	9.6	(0.15)	9.6	(0.27)	9.9	(0.11)
Total protein foods	5	4.1	(0.09)	4.2	(0.13)	4.1	(0.16)	3.9	(0.14)
Seafood and plant proteins	5	2.9	(0.17)	2.9	(0.27)	2.5	(0.25)	3.3	(0.31)
Fatty acids	10	2.5	(0.14)	3.1	(0.25)	2.3 *	(0.22)	2.3 *	(0.24)
Refined grains	10	5.9	(0.21)	5.9	(0.32)	6.2	(0.30)	5.5	(0.40)
Sodium	10	5.9	(0.14)	5.7	(0.21)	6.1	(0.22)	5.9	(0.24)
Added sugars	10	7.3	(0.14)	7.7	(0.22)	6.8 **	(0.22)	7.7	(0.21)
Saturated fats	10	5.1	(0.16)	5.7	(0.23)	5.1	(0.28)	4.8 *	(0.29)
Total HEI-2015 score	100	60.5	(0.62)	61.9	(1.02)	58.7 *	(0.94)	60.5	(1.13)
Boys									
Sample size	–	850	–	310	–	287	–	248	–
Total fruits	5	5.0	(0.03)	5.0	(0.03)	4.9	(0.13)	4.9	(0.16)
Whole fruits	5	5.0	(0.01)	5.0	(0.08)	4.8	(0.21)	5.0	(0.08)
Total vegetables	5	2.0	(0.08)	2.2	(0.14)	2.1	(0.15)	1.9	(0.16)
Greens and beans	5	1.6	(0.18)	1.9	(0.27)	1.4	(0.30)	1.5	(0.32)
Whole grains	10	3.1	(0.18)	3.4	(0.31)	2.6	(0.26)	3.4	(0.32)
Dairy	10	9.8	(0.20)	9.4	(0.19)	9.5	(0.48)	10.0 **	(0.08)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Total protein foods	5	4.0	(0.13)	4.4	(0.16)	4.0	(0.21)	3.7 **	(0.19)
Seafood and plant proteins	5	2.8	(0.24)	3.3	(0.39)	2.3 *	(0.30)	3.0	(0.43)
Fatty acids	10	2.6	(0.18)	3.3	(0.29)	2.5	(0.29)	2.3 *	(0.28)
Refined grains	10	5.6	(0.30)	5.3	(0.48)	5.9	(0.38)	5.5	(0.54)
Sodium	10	6.0	(0.18)	5.3	(0.29)	6.4 *	(0.31)	6.2 *	(0.31)
Added sugars	10	7.3	(0.20)	8.2	(0.25)	6.7 ***	(0.25)	7.3 *	(0.34)
Saturated fats	10	5.4	(0.23)	5.9	(0.31)	5.5	(0.43)	5.1	(0.39)
Total HEI-2015 score	100	60.3	(0.89)	62.5	(1.64)	58.6	(1.29)	59.6	(1.66)
Girls									
Sample size	–	874	–	317	–	299	–	256	–
Total fruits	5	5.0	(0.07)	4.9	(0.14)	4.9	(0.15)	4.8	(0.13)
Whole fruits	5	5.0	(0.02)	4.8	(0.23)	4.9	(0.17)	5.0	(0.04)
Total vegetables	5	2.1	(0.10)	2.3	(0.18)	2.1	(0.12)	2.1	(0.16)
Greens and beans	5	1.7	(0.21)	2.2	(0.44)	1.4	(0.25)	1.7	(0.26)
Whole grains	10	3.3	(0.22)	2.5	(0.28)	2.9	(0.31)	4.2 **	(0.43)
Dairy	10	9.9	(0.09)	9.8	(0.24)	9.8	(0.21)	9.8	(0.20)
Total protein foods	5	4.1	(0.14)	4.0	(0.20)	4.1	(0.24)	4.2	(0.21)
Seafood and plant proteins	5	3.1	(0.25)	2.6	(0.37)	2.7	(0.39)	3.7	(0.46)
Fatty acids	10	2.4	(0.23)	2.9	(0.40)	2.1	(0.32)	2.3	(0.38)
Refined grains	10	6.1	(0.30)	6.5	(0.43)	6.6	(0.46)	5.5	(0.58)
Sodium	10	5.8	(0.21)	6.0	(0.30)	5.8	(0.30)	5.6	(0.36)
Added sugars	10	7.4	(0.19)	7.1	(0.36)	6.8	(0.37)	8.1 *	(0.25)
Saturated fats	10	4.8	(0.23)	5.4	(0.34)	4.8	(0.36)	4.5	(0.43)
Total HEI-2015 score	100	60.8	(0.87)	61.2	(1.18)	58.8	(1.37)	61.4	(1.52)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
2-Year-Olds									
Both genders									
Sample size	–	701	–	282	–	222	–	193	–
Total fruits	5	5.0	(0.00)	5.0	(0.01)	4.9	(0.15)	5.0	(0.11)
Whole fruits	5	5.0	(0.01)	5.0	(0.12)	4.8	(0.22)	5.0	(0.01)
Total vegetables	5	2.0	(0.09)	1.9	(0.13)	2.0	(0.15)	2.1	(0.17)
Greens and beans	5	1.5	(0.20)	1.1	(0.17)	1.6	(0.42)	1.8	(0.35)
Whole grains	10	3.4	(0.22)	2.8	(0.37)	3.2	(0.38)	4.2 *	(0.41)
Dairy	10	10.0	(0.00)	10.0	(0.02)	10.0	(0.02)	10.0	(0.00)
Total protein foods	5	3.8	(0.14)	3.8	(0.19)	3.8	(0.29)	3.9	(0.19)
Seafood and plant proteins	5	2.5	(0.24)	1.8	(0.24)	2.4	(0.36)	3.2 *	(0.57)
Fatty acids	10	1.9	(0.21)	2.4	(0.38)	1.2 *	(0.31)	2.1	(0.39)
Refined grains	10	6.6	(0.29)	6.7	(0.49)	6.3	(0.40)	6.7	(0.55)
Sodium	10	6.2	(0.20)	6.6	(0.39)	5.9	(0.29)	6.1	(0.29)
Added sugars	10	7.8	(0.24)	7.5	(0.44)	7.3	(0.34)	8.5	(0.36)
Saturated fats	10	4.8	(0.25)	5.3	(0.34)	4.4	(0.50)	4.6	(0.46)
Total HEI-2015 score	100	60.5	(0.92)	60.0	(1.30)	57.8	(1.34)	63.1	(1.88)
Boys									
Sample size	–	327	–	126	–	108	–	90	–
Total fruits	5	5.0	(0.01)	5.0	(0.02)	5.0	(0.14)	4.9	(0.21)
Whole fruits	5	5.0	(0.01)	5.0	(0.16)	4.7	(0.43)	5.0	(0.02)
Total vegetables	5	1.8	(0.12)	1.9	(0.15)	2.0	(0.24)	1.6	(0.22)
Greens and beans	5	1.0	(0.25)	1.1	(0.28)	1.3 u	(0.58)	0.8 u	(0.30)
Whole grains	10	3.2	(0.31)	2.7	(0.36)	3.4	(0.55)	3.5	(0.53)
Dairy	10	10.0	(0.00)	10.0	(0.04)	10.0	(0.03)	10.0	(0.00)
Total protein foods	5	3.8	(0.20)	3.8	(0.25)	4.0	(0.46)	3.6	(0.26)
Seafood and plant proteins	5	2.2	(0.36)	1.8	(0.36)	2.1	(0.39)	2.8 u	(0.91)
Fatty acids	10	2.0	(0.27)	2.6	(0.38)	1.3 * u	(0.41)	2.1	(0.43)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Refined grains	10	6.1	(0.47)	6.2	(0.80)	6.1	(0.64)	6.1	(0.89)
Sodium	10	6.1	(0.26)	6.4	(0.51)	5.8	(0.45)	6.1	(0.41)
Added sugars	10	7.8	(0.34)	7.9	(0.59)	7.3	(0.51)	8.1	(0.57)
Saturated fats	10	4.8	(0.38)	5.7	(0.43)	4.4	(0.80)	4.4	(0.57)
Total HEI-2015 score	100	58.9	(1.38)	60.1	(1.90)	57.3	(1.88)	59.1	(2.82)
Girls									
Sample size	–	374	–	156	–	114	–	103	–
Total fruits	5	5.0	(0.00)	5.0	(0.01)	4.9	(0.28)	5.0	(0.00)
Whole fruits	5	5.0	(0.00)	5.0	(0.17)	5.0	(0.07)	5.0	(0.00)
Total vegetables	5	2.2	(0.14)	2.0	(0.22)	2.0	(0.18)	2.5	(0.26)
Greens and beans	5	2.0	(0.31)	1.2	(0.18)	1.9 u	(0.60)	2.8 *	(0.65)
Whole grains	10	3.7	(0.32)	3.0	(0.66)	2.9	(0.52)	5.0 *	(0.63)
Dairy	10	10.0	(0.00)	10.0	(0.01)	10.0	(0.02)	10.0	(0.00)
Total protein foods	5	3.9	(0.19)	3.7	(0.28)	3.7	(0.35)	4.2	(0.27)
Seafood and plant proteins	5	2.7	(0.31)	1.8	(0.33)	2.7	(0.62)	3.7 *	(0.68)
Fatty acids	10	1.8	(0.33)	2.2 u	(0.67)	1.1 u	(0.47)	2.0 u	(0.66)
Refined grains	10	7.1	(0.32)	7.3	(0.55)	6.6	(0.47)	7.3	(0.65)
Sodium	10	6.3	(0.31)	6.8	(0.60)	6.0	(0.38)	6.0	(0.42)
Added sugars	10	7.7	(0.32)	7.0	(0.65)	7.2	(0.46)	8.9 *	(0.44)
Saturated fats	10	4.7	(0.32)	5.0	(0.52)	4.4	(0.60)	4.7	(0.74)
Total HEI-2015 score	100	62.1	(1.20)	59.9	(1.77)	58.3	(1.91)	67.2 *	(2.48)
3-Year-Olds									
Both genders									
Sample size	–	522	–	186	–	171	–	162	–
Total fruits	5	5.0	(0.02)	5.0	(0.09)	4.9	(0.17)	5.0	(0.08)
Whole fruits	5	5.0	(0.00)	4.9	(0.19)	4.8	(0.30)	5.0	(0.00)
Total vegetables	5	2.0	(0.10)	2.1	(0.12)	2.2	(0.17)	1.9	(0.19)
Greens and beans	5	1.3	(0.18)	1.8	(0.31)	1.1	(0.25)	1.2	(0.36)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Whole grains	10	3.2	(0.25)	3.1	(0.34)	2.6	(0.31)	3.6	(0.44)
Dairy	10	10.0	(0.06)	10.0	(0.10)	9.8	(0.35)	9.8	(0.28)
Total protein foods	5	4.2	(0.16)	4.6	(0.19)	4.0	(0.29)	4.2	(0.27)
Seafood and plant proteins	5	3.3	(0.31)	3.8	(0.49)	2.3 *	(0.47)	3.6	(0.47)
Fatty acids	10	2.6	(0.27)	3.3	(0.36)	2.2	(0.45)	2.4	(0.46)
Refined grains	10	6.2	(0.37)	6.4	(0.62)	6.3	(0.66)	6.1	(0.69)
Sodium	10	5.9	(0.28)	5.6	(0.30)	6.3	(0.38)	5.8	(0.53)
Added sugars	10	7.4	(0.24)	7.9	(0.27)	6.7 *	(0.42)	7.5	(0.41)
Saturated fats	10	5.0	(0.30)	5.5	(0.36)	5.0	(0.51)	4.9	(0.53)
Total HEI-2015 score	100	61.1	(1.25)	63.8	(1.70)	58.1 *	(1.79)	61.0	(2.14)
Boys									
Sample size	–	271	–	97	–	93	–	79	–
Total fruits	5	5.0	(0.03)	5.0	(0.07)	4.9	(0.21)	5.0	(0.16)
Whole fruits	5	5.0	(0.00)	5.0	(0.18)	4.8	(0.36)	5.0	(0.00)
Total vegetables	5	2.0	(0.11)	2.1	(0.18)	2.2	(0.27)	1.7	(0.21)
Greens and beans	5	1.6	(0.32)	2.1	(0.45)	1.1 u	(0.41)	1.7 u	(0.69)
Whole grains	10	2.9	(0.32)	3.1	(0.54)	2.1	(0.33)	3.4	(0.62)
Dairy	10	10.0	(0.01)	10.0	(0.08)	9.7	(0.60)	10.0	(0.06)
Total protein foods	5	4.1	(0.25)	4.7	(0.26)	3.7 **	(0.33)	4.0	(0.47)
Seafood and plant proteins	5	3.1	(0.37)	4.1	(0.67)	2.4 *	(0.49)	3.0	(0.66)
Fatty acids	10	2.3	(0.33)	3.4	(0.40)	2.2	(0.61)	1.8 * u	(0.55)
Refined grains	10	5.9	(0.57)	5.8	(0.81)	5.7	(0.66)	6.1	(1.17)
Sodium	10	6.1	(0.34)	5.1	(0.46)	6.8 *	(0.53)	6.2	(0.71)
Added sugars	10	7.2	(0.38)	8.3	(0.37)	6.7 **	(0.40)	7.1	(0.72)
Saturated fats	10	5.3	(0.42)	5.8	(0.40)	4.9	(0.70)	5.2	(0.77)
Total HEI-2015 score	100	60.6	(1.74)	64.4	(2.53)	57.3 *	(1.79)	60.2	(3.34)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Girls									
<i>Sample size</i>	–	251	–	89	–	78	–	83	–
Total fruits	5	5.0	(0.01)	4.9	(0.16)	4.9	(0.27)	5.0	(0.02)
Whole fruits	5	5.0	(0.00)	4.9	(0.35)	4.7	(0.49)	5.0	(0.00)
Total vegetables	5	2.1	(0.18)	2.0	(0.16)	2.3	(0.22)	2.1	(0.32)
Greens and beans	5	1.0	(0.16)	1.6	(0.42)	1.0	(0.26)	0.8	(0.17)
Whole grains	10	3.4	(0.39)	3.0	(0.43)	3.1	(0.54)	3.8	(0.63)
Dairy	10	10.0	(0.13)	10.0	(0.18)	9.9	(0.36)	9.6	(0.56)
Total protein foods	5	4.4	(0.18)	4.4	(0.28)	4.4	(0.48)	4.4	(0.28)
Seafood and plant proteins	5	3.5	(0.51)	3.5	(0.72)	2.3 u	(0.81)	4.2	(0.67)
Fatty acids	10	2.8	(0.44)	3.3	(0.61)	2.2 u	(0.66)	3.0	(0.75)
Refined grains	10	6.5	(0.47)	6.9	(0.94)	6.9	(1.15)	6.1	(0.73)
Sodium	10	5.6	(0.44)	6.1	(0.37)	5.7	(0.53)	5.4	(0.78)
Added sugars	10	7.5	(0.27)	7.5	(0.40)	6.7	(0.75)	8.0	(0.36)
Saturated fats	10	4.8	(0.44)	5.2	(0.61)	5.0	(0.74)	4.5	(0.73)
Total HEI-2015 score	100	61.7	(1.80)	63.2	(2.25)	59.0	(3.15)	61.8	(2.64)
4-Year-Olds									
Both genders									
<i>Sample size</i>	–	501	–	159	–	193	–	149	–
Total fruits	5	4.9	(0.12)	4.9	(0.19)	4.9	(0.19)	4.5	(0.29)
Whole fruits	5	5.0	(0.03)	4.8	(0.28)	4.9	(0.15)	4.9	(0.14)
Total vegetables	5	2.2	(0.13)	2.8	(0.29)	2.0 *	(0.16)	2.0 *	(0.23)
Greens and beans	5	2.1	(0.32)	3.2	(0.70)	1.5 *	(0.34)	1.7 *	(0.36)
Whole grains	10	3.0	(0.26)	3.0	(0.37)	2.6	(0.36)	3.4	(0.53)
Dairy	10	9.6	(0.33)	8.8	(0.45)	9.1	(0.72)	9.9 *	(0.16)
Total protein foods	5	4.1	(0.18)	4.3	(0.28)	4.4	(0.24)	3.7	(0.27)
Seafood and plant proteins	5	3.0	(0.35)	3.2	(0.59)	2.7	(0.44)	3.2	(0.58)
Fatty acids	10	3.1	(0.26)	3.5	(0.52)	3.5	(0.35)	2.4	(0.36)
Refined grains	10	4.8	(0.43)	4.5	(0.57)	6.1 *	(0.44)	3.6	(0.80)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Sodium	10	5.7	(0.24)	4.8	(0.40)	6.2 *	(0.45)	5.8	(0.38)
Added sugars	10	6.9	(0.23)	7.7	(0.41)	6.3 *	(0.38)	7.0	(0.33)
Saturated fats	10	5.6	(0.30)	6.2	(0.48)	6.0	(0.46)	4.9	(0.50)
Total HEI-2015 score	100	60.0	(1.03)	61.8	(2.19)	60.2	(1.71)	57.3	(1.81)
Boys									
Sample size	–	252	–	87	–	86	–	79	–
Total fruits	5	5.0	(0.10)	5.0	(0.06)	4.9	(0.29)	4.7	(0.41)
Whole fruits	5	5.0	(0.04)	5.0	(0.01)	4.8	(0.26)	4.9	(0.24)
Total vegetables	5	2.3	(0.19)	2.8	(0.35)	2.0	(0.25)	2.3	(0.37)
Greens and beans	5	2.0	(0.35)	2.5	(0.62)	1.8 u	(0.55)	2.0 u	(0.59)
Whole grains	10	3.2	(0.32)	4.4	(0.67)	2.4 *	(0.44)	3.2	(0.49)
Dairy	10	9.4	(0.60)	8.3	(0.56)	8.7	(1.32)	9.9 **	(0.24)
Total protein foods	5	4.1	(0.19)	4.6	(0.32)	4.5	(0.30)	3.5 **	(0.22)
Seafood and plant proteins	5	3.1	(0.50)	3.9	(0.87)	2.4	(0.66)	3.3	(0.61)
Fatty acids	10	3.5	(0.32)	3.9	(0.67)	4.0	(0.47)	2.9	(0.48)
Refined grains	10	4.8	(0.49)	3.8	(0.90)	6.0	(0.65)	4.4	(0.68)
Sodium	10	5.9	(0.33)	4.4	(0.56)	6.6 *	(0.63)	6.2 *	(0.44)
Added sugars	10	6.9	(0.30)	8.5	(0.30)	6.2 ***	(0.38)	6.6 ***	(0.46)
Saturated fats	10	6.3	(0.42)	6.1	(0.71)	7.0	(0.73)	5.6	(0.67)
Total HEI-2015 score	100	61.5	(1.48)	63.1	(3.79)	61.3	(2.86)	59.5	(2.37)
Girls									
Sample size	–	249	–	72	–	107	–	70	–
Total fruits	5	4.9	(0.22)	4.8	(0.39)	4.9	(0.25)	4.3	(0.41)
Whole fruits	5	5.0	(0.06)	4.6	(0.58)	5.0	(0.13)	5.0	(0.13)
Total vegetables	5	2.1	(0.19)	3.0	(0.46)	2.0	(0.21)	1.6 *	(0.26)
Greens and beans	5	2.1	(0.54)	4.0 u	(1.26)	1.3 * u	(0.39)	1.4	(0.41)
Whole grains	10	2.8	(0.42)	1.5	(0.29)	2.8	(0.58)	3.7 *	(0.95)
Dairy	10	9.9	(0.25)	9.4	(0.71)	9.5	(0.54)	9.9	(0.19)
Total protein foods	5	4.2	(0.31)	4.1	(0.47)	4.3	(0.38)	4.0	(0.50)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Seafood and plant proteins	5	2.9	(0.47)	2.4 u	(0.80)	3.0	(0.59)	3.1 u	(1.00)
Fatty acids	10	2.6	(0.41)	3.1	(0.81)	3.0	(0.51)	1.9	(0.54)
Refined grains	10	4.7	(0.70)	5.2	(0.68)	6.3	(0.59)	2.9 u	(1.47)
Sodium	10	5.5	(0.34)	5.2	(0.56)	5.8	(0.63)	5.4	(0.62)
Added sugars	10	6.9	(0.37)	6.9	(0.77)	6.3	(0.66)	7.5	(0.48)
Saturated fats	10	4.9	(0.43)	6.2	(0.64)	4.9	(0.54)	4.2 *	(0.74)
Total HEI-2015 score	100	58.5	(1.44)	60.4	(2.09)	59.1	(1.80)	55.0	(2.75)

Notes: "All young children" includes children with missing WIC participation or income. Estimates are based on the day 1 dietary recall. Mean component scores may not sum to total score because of rounding. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population 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 WIC participants with income-eligible nonparticipants or higher income nonparticipants. WIC participants consist of children in households that at the time of data collection reported receiving WIC benefits.

HEI = Healthy Eating Index

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

– Denotes not applicable

Sources: National Health And Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls; Food Pattern Equivalents Database 2011–2012, 2013–2014, and 2015–2016. Sample includes NHANES children aged 2–4 years with complete day 1 dietary recall data.

Table B.2. Healthy Eating Index-2010 Scores for Young Children WIC Participants and Nonparticipants by Age and Gender

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
All Young Children 2–4 Years Old									
Both genders									
Sample size	–	1,724	–	627	–	586	–	504	–
Total fruits	5	5.0	(0.04)	5.0	(0.07)	4.9	(0.10)	4.8	(0.11)
Whole fruits	5	5.0	(0.01)	4.9	(0.12)	4.8	(0.13)	5.0	(0.04)
Total vegetables	5	1.9	(0.06)	2.0	(0.11)	1.9	(0.09)	1.8	(0.11)
Greens and beans	5	0.8	(0.12)	0.9 u	(0.30)	0.7	(0.18)	0.8	(0.16)
Whole grains	10	3.2	(0.14)	2.9	(0.21)	2.8	(0.21)	3.8 *	(0.27)
Dairy	10	9.9	(0.11)	9.6	(0.15)	9.6	(0.27)	9.9	(0.11)
Total protein foods	5	4.1	(0.09)	4.2	(0.13)	4.1	(0.16)	3.9	(0.14)
Seafood and plant proteins	5	2.9	(0.17)	2.9	(0.26)	2.5	(0.24)	3.3	(0.31)
Fatty acids	10	2.5	(0.14)	3.1	(0.25)	2.3 *	(0.22)	2.3 *	(0.24)
Refined grains	10	5.9	(0.21)	5.9	(0.32)	6.2	(0.29)	5.5	(0.40)
Sodium	10	5.9	(0.14)	5.7	(0.21)	6.1	(0.22)	5.9	(0.24)
Empty calories	20	14.3	(0.23)	15.1	(0.34)	13.5 ***	(0.33)	14.5	(0.40)
Total HEI-2010 score	100	61.3	(0.60)	62.1	(0.95)	59.5	(0.95)	61.5	(1.10)
Boys									
Sample size	–	850	–	310	–	287	–	248	–
Total fruits	5	5.0	(0.04)	5.0	(0.03)	4.9	(0.13)	4.9	(0.16)
Whole fruits	5	5.0	(0.01)	5.0	(0.09)	4.8	(0.20)	5.0	(0.08)
Total vegetables	5	1.9	(0.08)	2.0	(0.12)	1.9	(0.14)	1.7	(0.16)
Greens and beans	5	0.7	(0.12)	0.6	(0.18)	0.8 u	(0.27)	0.7 u	(0.20)
Whole grains	10	3.1	(0.19)	3.4	(0.31)	2.6	(0.26)	3.4	(0.32)
Dairy	10	9.8	(0.20)	9.4	(0.19)	9.5	(0.48)	10.0 **	(0.08)
Total protein foods	5	4.0	(0.12)	4.4	(0.16)	4.0	(0.21)	3.7 **	(0.19)
Seafood and plant proteins	5	2.8	(0.24)	3.2	(0.38)	2.3	(0.30)	3.0	(0.42)
Fatty acids	10	2.6	(0.18)	3.3	(0.29)	2.5	(0.29)	2.3 *	(0.28)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Refined grains	10	5.6	(0.30)	5.3	(0.48)	5.9	(0.37)	5.5	(0.54)
Sodium	10	6.0	(0.18)	5.3	(0.29)	6.4 *	(0.31)	6.2 *	(0.31)
Empty calories	20	14.3	(0.32)	16.0	(0.38)	13.6 ***	(0.44)	13.9 **	(0.58)
Total HEI-2010 score	100	60.8	(0.87)	62.8	(1.53)	59.2	(1.33)	60.1	(1.62)
Girls									
Sample size	–	874	–	317	–	299	–	256	–
Total fruits	5	5.0	(0.07)	4.9	(0.14)	4.9	(0.16)	4.8	(0.13)
Whole fruits	5	5.0	(0.02)	4.8	(0.23)	4.9	(0.17)	5.0	(0.04)
Total vegetables	5	2.0	(0.10)	2.1	(0.18)	2.0	(0.12)	1.9	(0.17)
Greens and beans	5	0.8	(0.20)	1.1 u	(0.59)	0.7 u	(0.22)	1.0	(0.25)
Whole grains	10	3.3	(0.22)	2.5	(0.28)	2.9	(0.32)	4.2 **	(0.44)
Dairy	10	9.9	(0.09)	9.8	(0.24)	9.8	(0.21)	9.8	(0.20)
Total protein foods	5	4.1	(0.14)	4.0	(0.20)	4.1	(0.23)	4.2	(0.21)
Seafood and plant proteins	5	3.1	(0.25)	2.6	(0.37)	2.6	(0.38)	3.7	(0.46)
Fatty acids	10	2.4	(0.23)	2.9	(0.40)	2.1	(0.32)	2.3	(0.38)
Refined grains	10	6.1	(0.30)	6.5	(0.42)	6.6	(0.46)	5.4	(0.58)
Sodium	10	5.8	(0.21)	6.0	(0.30)	5.8	(0.30)	5.6	(0.36)
Empty calories	20	14.3	(0.33)	14.2	(0.57)	13.4	(0.50)	15.1	(0.55)
Total HEI-2010 score	100	61.8	(0.84)	61.4	(1.11)	59.8	(1.35)	63.0	(1.49)
2-Year-Olds									
Both genders									
Sample size	–	701	–	282	–	222	–	193	–
Total fruits	5	5.0	(0.01)	5.0	(0.01)	4.9	(0.16)	5.0	(0.11)
Whole fruits	5	5.0	(0.01)	5.0	(0.12)	4.8	(0.22)	5.0	(0.01)
Total vegetables	5	1.9	(0.09)	1.8	(0.13)	1.9	(0.15)	1.9	(0.18)
Greens and beans	5	0.7	(0.17)	0.3	(0.07)	0.9 u	(0.40)	0.9 u	(0.33)
Whole grains	10	3.4	(0.23)	2.8	(0.38)	3.2	(0.38)	4.2 *	(0.41)
Dairy	10	10.0	(0.00)	10.0	(0.02)	10.0	(0.02)	10.0	(0.00)
Total protein foods	5	3.8	(0.14)	3.8	(0.19)	3.8	(0.29)	3.9	(0.18)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Seafood and plant proteins	5	2.5	(0.24)	1.8	(0.24)	2.4	(0.36)	3.2 *	(0.57)
Fatty acids	10	1.9	(0.21)	2.4	(0.38)	1.2 *	(0.31)	2.1	(0.39)
Refined grains	10	6.6	(0.29)	6.7	(0.49)	6.3	(0.40)	6.7	(0.55)
Sodium	10	6.2	(0.20)	6.6	(0.39)	5.9	(0.29)	6.1	(0.29)
Empty calories	20	14.7	(0.37)	14.9	(0.64)	13.6	(0.53)	15.7	(0.58)
Total HEI-2010 score	100	61.7	(0.91)	61.1	(1.30)	59.0	(1.29)	64.6	(1.81)
Boys									
Sample size	–	327	–	126	–	108	–	90	–
Total fruits	5	5.0	(0.01)	5.0	(0.03)	5.0	(0.14)	4.9	(0.22)
Whole fruits	5	5.0	(0.01)	5.0	(0.17)	4.7	(0.42)	5.0	(0.02)
Total vegetables	5	1.7	(0.11)	1.7	(0.14)	1.9	(0.24)	1.5	(0.22)
Greens and beans	5	0.4 u	(0.19)	0.2 u	(0.09)	0.6 u	(0.53)	0.3 u	(0.23)
Whole grains	10	3.2	(0.31)	2.7	(0.36)	3.4	(0.55)	3.5	(0.53)
Dairy	10	10.0	(0.00)	10.0	(0.04)	10.0	(0.03)	10.0	(0.00)
Total protein foods	5	3.8	(0.20)	3.8	(0.25)	4.0	(0.46)	3.5	(0.25)
Seafood and plant proteins	5	2.2	(0.36)	1.8	(0.36)	2.1	(0.40)	2.8 u	(0.91)
Fatty acids	10	2.0	(0.27)	2.6	(0.38)	1.3 * u	(0.41)	2.1	(0.43)
Refined grains	10	6.1	(0.47)	6.2	(0.81)	6.1	(0.64)	6.1	(0.88)
Sodium	10	6.1	(0.26)	6.4	(0.51)	5.8	(0.44)	6.1	(0.40)
Empty calories	20	14.6	(0.49)	15.7	(0.62)	13.5 *	(0.79)	14.7	(0.80)
Total HEI-2010 score	100	60.1	(1.39)	61.2	(1.80)	58.3	(1.81)	60.7	(2.84)
Girls									
Sample size	–	374	–	156	–	114	–	103	–
Total fruit	5	5.0	(0.00)	5.0	(0.01)	4.9	(0.28)	5.0	(0.00)
Whole fruit	5	5.0	(0.00)	5.0	(0.17)	5.0	(0.08)	5.0	(0.00)
Total vegetables	5	2.0	(0.14)	1.8	(0.21)	1.8	(0.18)	2.3	(0.29)
Greens and beans	5	1.0 u	(0.30)	0.3 u	(0.10)	1.2 u	(0.59)	1.5 u	(0.64)
Whole grains	10	3.7	(0.33)	3.0	(0.67)	2.9	(0.52)	5.0 *	(0.64)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Dairy	10	10.0	(0.00)	10.0	(0.01)	10.0	(0.01)	10.0	(0.00)
Total protein foods	5	3.9	(0.19)	3.7	(0.28)	3.7	(0.35)	4.2	(0.26)
Seafood and plant proteins	5	2.7	(0.31)	1.8	(0.33)	2.7	(0.61)	3.7 *	(0.68)
Fatty acids	10	1.8	(0.33)	2.2 u	(0.66)	1.1 u	(0.48)	2.0 u	(0.66)
Refined grains	10	7.1	(0.32)	7.2	(0.54)	6.6	(0.46)	7.3	(0.65)
Sodium	10	6.3	(0.31)	6.8	(0.60)	6.0	(0.38)	6.0	(0.42)
Empty calories	20	14.9	(0.55)	14.0	(1.13)	13.8	(0.70)	16.7	(0.85)
Total HEI-2010 score	100	63.4	(1.14)	60.9	(1.87)	59.7	(1.85)	68.8 **	(2.22)
3-Year-Olds									
Both genders									
Sample size	–	522	–	186	–	171	–	162	–
Total fruits	5	5.0	(0.02)	5.0	(0.09)	4.9	(0.17)	5.0	(0.09)
Whole fruits	5	5.0	(0.00)	4.9	(0.20)	4.8	(0.30)	5.0	(0.00)
Total vegetables	5	1.9	(0.10)	1.8	(0.12)	2.1	(0.18)	1.8	(0.19)
Greens and beans	5	0.5	(0.12)	0.7 u	(0.23)	0.4 u	(0.23)	0.6 u	(0.24)
Whole grains	10	3.2	(0.26)	3.1	(0.34)	2.6	(0.32)	3.6	(0.44)
Dairy	10	10.0	(0.06)	10.0	(0.10)	9.8	(0.35)	9.8	(0.28)
Total protein foods	5	4.2	(0.16)	4.6	(0.19)	4.0	(0.29)	4.2	(0.27)
Seafood and plant proteins	5	3.3	(0.31)	3.7	(0.49)	2.3 *	(0.44)	3.6	(0.47)
Fatty acids	10	2.6	(0.27)	3.3	(0.36)	2.2	(0.44)	2.4	(0.46)
Refined grains	10	6.2	(0.37)	6.3	(0.61)	6.3	(0.65)	6.1	(0.69)
Sodium	10	5.9	(0.28)	5.6	(0.29)	6.3	(0.38)	5.8	(0.53)
Empty calories	20	14.2	(0.45)	15.1	(0.50)	13.1 **	(0.59)	14.4	(0.81)
Total HEI-2010 score	100	61.9	(1.23)	64.0	(1.60)	58.7 *	(1.78)	62.2	(2.10)
Boys									
Sample size	–	271	–	97	–	93	–	79	–
Total fruits	5	5.0	(0.03)	5.0	(0.08)	4.9	(0.21)	5.0	(0.17)
Whole fruits	5	5.0	(0.00)	5.0	(0.19)	4.8	(0.35)	5.0	(0.00)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Total vegetables	5	1.8	(0.11)	1.9	(0.17)	2.0	(0.27)	1.6	(0.19)
Greens and beans	5	0.7 u	(0.24)	0.9 u	(0.42)	0.5 u	(0.39)	0.9 u	(0.46)
Whole grains	10	2.9	(0.33)	3.1	(0.53)	2.1	(0.34)	3.4	(0.62)
Dairy	10	10.0	(0.01)	10.0	(0.08)	9.7	(0.61)	10.0	(0.06)
Total protein foods	5	4.1	(0.25)	4.7	(0.26)	3.7 **	(0.33)	4.0	(0.47)
Seafood and plant proteins	5	3.1	(0.36)	3.9	(0.66)	2.4	(0.49)	3.0	(0.65)
Fatty acids	10	2.3	(0.32)	3.4	(0.40)	2.2	(0.61)	1.8 * u	(0.55)
Refined grains	10	5.9	(0.57)	5.8	(0.81)	5.7	(0.66)	6.1	(1.17)
Sodium	10	6.1	(0.34)	5.1	(0.46)	6.8 *	(0.53)	6.2	(0.71)
Empty calories	20	14.0	(0.70)	15.9	(0.55)	12.8 **	(0.79)	13.7	(1.30)
Total HEI-2010 score	100	61.0	(1.69)	64.7	(2.55)	57.6 *	(1.83)	60.7	(3.22)
Girls									
Sample size	–	251	–	89	–	78	–	83	–
Total fruits	5	5.0	(0.02)	4.9	(0.17)	4.9	(0.27)	5.0	(0.02)
Whole fruits	5	5.0	(0.01)	4.9	(0.35)	4.7	(0.49)	5.0	(0.00)
Total vegetables	5	2.0	(0.17)	1.8	(0.17)	2.2	(0.22)	2.0	(0.32)
Greens and beans	5	0.3	(0.07)	0.3 u	(0.17)	0.4 u	(0.25)	0.2 u	(0.07)
Whole grains	10	3.4	(0.40)	3.0	(0.43)	3.1	(0.54)	3.8	(0.63)
Dairy	10	10.0	(0.13)	10.0	(0.18)	9.9	(0.35)	9.6	(0.56)
Total protein foods	5	4.4	(0.18)	4.4	(0.28)	4.4	(0.48)	4.4	(0.28)
Seafood and plant proteins	5	3.5	(0.51)	3.5	(0.72)	2.2 u	(0.74)	4.2	(0.68)
Fatty acids	10	2.8	(0.44)	3.3	(0.61)	2.2	(0.65)	3.0	(0.75)
Refined grains	10	6.5	(0.47)	6.9	(0.92)	6.8	(1.15)	6.1	(0.71)
Sodium	10	5.6	(0.44)	6.1	(0.37)	5.7	(0.53)	5.4	(0.78)
Empty calories	20	14.4	(0.56)	14.4	(0.85)	13.3	(0.88)	15.1	(0.96)
Total HEI-2010 score	100	62.9	(1.78)	63.3	(1.89)	59.8	(3.09)	63.8	(2.66)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
4-Year-Olds									
Both genders									
<i>Sample size</i>	–	501	–	159	–	193	–	149	–
Total fruits	5	4.9	(0.12)	4.9	(0.19)	4.9	(0.19)	4.5	(0.29)
Whole fruits	5	5.0	(0.03)	4.8	(0.28)	4.9	(0.15)	5.0	(0.13)
Total vegetables	5	2.0	(0.12)	2.5	(0.28)	1.9 *	(0.15)	1.8	(0.23)
Greens and beans	5	1.1	(0.28)	1.7 u	(0.89)	0.9	(0.25)	1.0	(0.25)
Whole grains	10	3.0	(0.27)	3.0	(0.37)	2.6	(0.37)	3.4	(0.53)
Dairy	10	9.6	(0.33)	8.8	(0.45)	9.1	(0.73)	9.9 *	(0.16)
Total protein foods	5	4.1	(0.18)	4.3	(0.28)	4.4	(0.24)	3.8	(0.27)
Seafood and plant proteins	5	3.0	(0.34)	3.1	(0.58)	2.7	(0.44)	3.2	(0.58)
Fatty acids	10	3.1	(0.26)	3.5	(0.52)	3.5	(0.35)	2.4	(0.36)
Refined grains	10	4.8	(0.43)	4.5	(0.56)	6.1 *	(0.44)	3.6	(0.79)
Sodium	10	5.7	(0.24)	4.8	(0.40)	6.2 *	(0.44)	5.8	(0.37)
Empty calories	20	14.0	(0.36)	15.3	(0.62)	13.8	(0.60)	13.3 *	(0.65)
Total HEI-2010 score	100	60.3	(0.97)	61.3	(1.99)	60.9	(1.81)	57.8	(1.80)
Boys									
<i>Sample size</i>	–	252	–	87	–	86	–	79	–
Total fruits	5	5.0	(0.10)	5.0	(0.06)	4.9	(0.29)	4.7	(0.41)
Whole fruits	5	5.0	(0.03)	5.0	(0.02)	4.8	(0.26)	4.9	(0.23)
Total vegetables	5	2.1	(0.18)	2.4	(0.30)	1.9	(0.21)	2.1	(0.38)
Greens and beans	5	0.9	(0.20)	0.7 u	(0.35)	1.3 u	(0.45)	0.8 u	(0.33)
Whole grains	10	3.2	(0.33)	4.3	(0.67)	2.4 *	(0.45)	3.2	(0.49)
Dairy	10	9.4	(0.60)	8.2	(0.56)	8.7	(1.32)	9.9 **	(0.24)
Total protein foods	5	4.1	(0.19)	4.6	(0.32)	4.5	(0.29)	3.5 **	(0.22)
Seafood and plant proteins	5	3.1	(0.50)	3.9	(0.86)	2.4	(0.64)	3.3	(0.61)
Fatty acids	10	3.5	(0.32)	3.9	(0.67)	4.0	(0.48)	2.9	(0.48)
Refined grains	10	4.8	(0.49)	3.8	(0.89)	6.0	(0.65)	4.4	(0.68)

Subgroup	Maximum Possible HEI Score	All Young Children		WIC Participants		Income-Eligible Nonparticipants		Higher Income Nonparticipants	
		Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error	Mean Score	Standard Error
Sodium	10	5.9	(0.33)	4.4	(0.56)	6.6 *	(0.63)	6.2 *	(0.44)
Empty calories	20	14.4	(0.41)	16.4	(0.78)	14.5	(0.71)	13.2 **	(0.80)
Total HEI-2010 score	100	61.4	(1.39)	62.6	(3.38)	61.9	(3.07)	59.0	(2.24)

Girls

Sample size	–	249	–	72	–	107	–	70	–
Total fruits	5	4.9	(0.22)	4.8	(0.39)	4.9	(0.25)	4.3	(0.41)
Whole fruits	5	5.0	(0.06)	4.6	(0.57)	5.0	(0.14)	5.0	(0.13)
Total vegetables	5	1.9	(0.18)	2.6	(0.48)	1.9	(0.20)	1.6	(0.24)
Greens and beans	5	1.2 u	(0.52)	2.6 u	(1.78)	0.5 u	(0.21)	1.1 u	(0.37)
Whole grains	10	2.8	(0.43)	1.5	(0.29)	2.8	(0.59)	3.7 *	(0.96)
Dairy	10	9.9	(0.25)	9.4	(0.71)	9.5	(0.54)	9.9	(0.20)
Total protein foods	5	4.2	(0.31)	4.1	(0.46)	4.3	(0.37)	4.0	(0.50)
Seafood and plant proteins	5	2.9	(0.47)	2.4 u	(0.77)	3.0	(0.59)	3.1 u	(0.99)
Fatty acids	10	2.6	(0.41)	3.2	(0.81)	3.0	(0.51)	1.9	(0.55)
Refined grains	10	4.7	(0.70)	5.2	(0.68)	6.3	(0.59)	2.9 u	(1.45)
Sodium	10	5.5	(0.34)	5.2	(0.57)	5.8	(0.63)	5.4	(0.61)
Empty calories	20	13.5	(0.59)	14.1	(0.97)	13.1	(0.98)	13.5	(1.03)
Total HEI-2010 score	100	59.1	(1.35)	59.8	(2.00)	60.0	(1.86)	56.4	(2.83)

Notes: "All young children" includes children with missing WIC participation or income. Estimates are based on the day 1 dietary recall. Mean component scores may not sum to total score because of rounding. Estimates are weighted to account for differential probabilities of selection, nonresponse to survey instruments, and differences between the final sample and the U.S. civilian noninstitutionalized population 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 WIC participants with income-eligible nonparticipants or higher income nonparticipants. WIC participants consist of children in households that at the time of data collection reported receiving WIC benefits.

HEI = Healthy Eating Index

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

– Denotes not applicable

Source: National Health And Nutrition Examination Survey (NHANES) 2011–2016 dietary recalls; Food Pattern Equivalents Database 2011–2012, 2013–2014, and 2015–2016. Sample includes NHANES children aged 2–4 years with complete day 1 dietary recall data.