

CACFP Health Impact Assessment

Appendices

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Appendix A: Yearly data trends for CACFP

Table A.1

CACFP Participation and Costs, Meals Served, and Percent Free/Reduced Price, FY 1990-2016

Food service in child care homes has declined since 1996

Fiscal years	Total participation (thousands)	Meals served (millions)				Percent free and reduced price of total meals	Total costs (millions of dollars)	Inflation-adjusted costs (millions of 2016 dollars)
		Homes	Centers	Adult	Total			
1990	1,492	481	477	8	966	83.9	\$816.7	\$1,499.7
1991	1,626	542	509	11	1,061	84.4	\$945.8	\$1,666.7
1992	1,804	612	555	14	1,182	85.3	\$1,096.5	\$1,875.8
1993	1,968	667	613	17	1,297	85.4	\$1,223.9	\$2,032.8
1994	2,176	729	665	19	1,414	85.3	\$1,353.0	\$2,191.2
1995	2,338	766	720	22	1,508	85.2	\$1,463.3	\$2,304.5
1996	2,404	777	746	23	1,546	85.2	\$1,533.5	\$2,345.8
1997	2,489	775	770	26	1,572	85.3	\$1,571.2	\$2,349.5
1998	2,599	751	822	29	1,602	84.7	\$1,552.4	\$2,285.8
1999	2,681	744	863	32	1,638	84.2	\$1,619.6	\$2,333.2
2000	2,707	738	896	36	1,670	83.7	\$1,682.6	\$2,345.2
2001	2,726	717	923	40	1,680	83.5	\$1,737.2	\$2,354.3
2002	2,850	708	984	45	1,736	83.3	\$1,852.7	\$2,471.7
2003	2,917	693	1,023	49	1,765	83.2	\$1,925.7	\$2,511.9
2004	3,009	687	1,059	54	1,800	82.9	\$2,019.4	\$2,565.8
2005	3,108	671	1,105	58	1,834	82.2	\$2,110.8	\$2,594.0
2006	3,112	638	1,132	59	1,830	81.4	\$2,152.1	\$2,562.1
2007	3,207	626	1,161	61	1,848	81.3	\$2,238.0	\$2,590.6
2008	3,254	627	1,204	64	1,895	81.3	\$2,402.5	\$2,678.2

2009	3,649	613	1,217	66	1,896	81.8	\$2,533.8	\$2,834.6
2010	3,411	595	1,248	67	1,910	82.1	\$2,638.4	\$2,904.0
2011	3,431	583	1,276	70	1,929	81.7	\$2,723.9	\$2,906.4
2012	3,571	569	1,306	70	1,945	81.6	\$2,854.4	\$2,983.9
2013	3,681	551	1,337	70	1,957	81.7	\$2,993.7	\$3,084.3
2014	3,892	537	1,371	71	1,979	81.8	\$3,131.8	\$3,175.1
2015	4,182	526	1,420	74	2,019	81.8	\$3,307.8	\$3,349.53
2016	4,294	512	1,493	76	2,081	81.8	\$3,504.8	\$3,504.8

Notes: Participation data represent average daily attendance with no adjustment for absenteeism. Data were collected quarterly. Total cost includes audit, startup, and sponsor administrative costs. Fiscal 2016 data are preliminary; all data are subject to revision.

Source: U.S. Department of Agriculture, "Child and Adult Care Food Program: Data as of January 6, 2017," accessed Jan. 31, 2017, <https://www.fns.usda.gov/sites/default/files/pd/ccsummar.pdf>

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Appendix B: Hypothetical menu scenarios

Table B.1

Hypothetical Menu Scenarios for Pre-revision Practice, Proposed Rule, and Best Practices

Monday						
Meal	Quantity (ages 3-5)	Original	Pre-revision practice	Proposed rule	USDA best practices	Justification for change made to original menu
Breakfast	Grains/breads: ½ serving, ½ slice, or ¼ cup	Cream of rice	Rice crisp cereal (¼ cup)	Rice crisp cereal (¼ cup)	Rice crisp cereal (¼ cup)	Food item adjusted due to feedback from Advisory Committee; recommended that new item was more appealing to a broader audience of CACFP participants.
	Juice/fruit/vegetables: ½ cup	Blueberries	Blueberries (½ cup frozen)	Blueberries (½ cup frozen)	Blueberries (½ cup frozen)	
	Fluid milk: ¾ cup (6 oz.)	Milk	1% white (6 oz.)	1% white (6 oz.)	1% white (6 oz.)	
Lunch	Meat/meat alternates: 1.5 oz.	Tuna	Canned tuna (1.5 oz.) (with 0.5 tsp. mayonnaise)	Canned tuna (1.5 oz.) (with 0.5 tsp. mayonnaise)	Canned tuna (1.5 oz.) (with 0.5 tsp. mayonnaise)	Tuna menu item interpreted to common practice of mixing tuna and mayonnaise to create tuna salad.

	Grains/breads: ½ serving, ½ slice, or ¼ cup	Wheat bread	Bread (white, 1 slice, 1.5 oz.)	Bread (whole wheat, 1 slice, 1.5 oz.)	Bread (whole wheat, 1 slice, 1.5 oz.)	Food item adjusted due to feedback from Advisory Committee; recommended that new item related to common practice of CACFP providers.
	*Fruit/vegetables: ¼ cup	Apples	Apple (¼ cup slices)	Apple (¼ cup slices)	Apple (¼ cup slices)	
	*Fruit/vegetables: ¼ cup	Red peppers	Banana (½ medium)	Celery sticks	Celery sticks	Food item adjusted to illustrate impact of separating the fruit and vegetable component in the proposed rule. Celery sticks replaced red peppers as a best practice item as they are a more representative item typically served at a cross-section of child-care centers in the country. Referred to USDA Food Buying Guide (http://fbg.nfsmi.org/descriptions.aspx?group=2).
	Fluid milk: ¾ c (6 oz.)	Milk	1% chocolate	Skim chocolate	1% white	

Snack	Meat/meat alternates: ½ ounce	Refried beans	Cheese (½ oz.) (for quesadillas)	Cheese (½ oz.) (for quesadillas)		Food item adjusted due to feedback from the Advisory Committee; recommended that new item related to common practice of CACFP providers.
	Grains/breads: ½ serving, ½ slice, or ¼ cup	Tortilla (whole grain)	Tortilla (white, 1 small)	Tortilla (white, 1 small)	Tortilla (whole grain, 1 small)	Food item adjusted due to feedback from the Advisory Committee; recommended that new item related to common practice of CACFP providers.
	Fruits/vegetables: ½ cup (proposed rule ½ cup of each)				Banana (1 medium)	Best practice requires at least one of the two required components of every snack be a fruit or a vegetable. Therefore, banana replaced cheese as the second snack
	Fluid milk: ½ cup (4 oz.)					

Tuesday						
Meal	Quantity (ages 3-5)	Original	Pre-revision practice	Proposed rule	USDA best practices	Justification for change made to original menu
Breakfast	Grains/breads: ½ serving, ½ slice, or ¼ cup	Instant oatmeal	Instant oatmeal (¼ cup, no sugar added)	Instant oatmeal (¼ cup, no sugar added)	Instant oatmeal (¼ cup, no sugar added)	
	Juice/fruit/vegetables: ½ cup	Peaches	Juice (100% orange juice, 1/2 cup)	Juice (100% orange juice, 1/2 cup)	Juice (100% orange juice, 1/2 cup)	Food item adjusted due to Advisory Committee feedback and literature review; while juice is not as common as it once was in CACFP, it is still served in some settings. Additionally, stakeholder feedback demonstrated that juice has not been eliminated across all child care sites due to its lower price point when compared with fruits and vegetables.
	Fluid milk: ¾ cup, (6 oz.)	Milk	1% white (6 oz.)	1% white (6 oz.)	1% white (6 oz.)	

Lunch	Meat/meat alternates: 1.5 oz.	Beef, ground	Ground beef, 80-84% lean (1.5 oz. as part of spaghetti in tomato-based sauce)	Ground beef, 80-84% lean (1.5 oz. as part of spaghetti in tomato-based sauce)	Ground beef, 90-94% lean (1.5 oz. as part of spaghetti in tomato-based sauced)	
	Grains/breads: ½ serving, ½ slice, or ¼ cup	Lasagna noodles	Spaghetti noodles (enriched, ¼ cup)	Spaghetti noodles (enriched, ¼ cup)	Spaghetti noodles (whole grain, ¼ cup)	Food item adjusted because there was not an available food code for lasagna noodles on their own (outside of a fully prepared lasagna), or for whole-grain lasagna noodles (used in best practice menu).
	Fruit/vegetables: ¼ cup	Applesauce	Peaches (¼ cup in light syrup or natural juices, canned)	Peaches (¼ cup in light syrup or natural juices, canned)	Peaches (¼ cup in light syrup or natural juices, canned)	Food item adjusted due to feedback from Advisory Committee to reduce repetition and increase variety in the menu.
	Fruit/vegetables: ¼ cup	Tomato sauce	Tomato-based sauce (¼ cup from pasta dish)	Tomato-based sauce (¼ cup from pasta dish)	Tomato-based sauce (¼ cup from pasta dish)	
	Fluid milk: ¾ c (6 oz.)	Milk	1% white (6 oz.)	1% white (6 oz.)	1% white (6 oz.)	

Snack	Meat/meat alternates: ½ ounce	Yogurt	Strawberry yogurt (2 oz.)	Strawberry yogurt (2 oz.)		
	Grains/breads: ½ serving, ½ slice, or ¼ cup	Pretzels	Bite-sized pretzels (¼ cup)	Bite-sized pretzels (¼ cup)	Bite-sized pretzels (¼ cup)	
	Fruits/vegetables: ½ cup (proposed rule ½ cup of each)				Orange (slices, ½ cup)	
	Fluid milk: ½ cup (4 oz.)					

Wednesday

Meal	Quantity (ages 3-5)	Original	Pre-revision practice	Proposed rule	USDA best practices	Justification for change made to original menu
Breakfast	Grains/breads: ½ serving, ½ slice, or ¼ cup	Oatmeal	Toast (white bread, 1 slice)	Toast (white bread, 1 slice)	Toast (whole grain, 1 slice)	Food item adjusted to reduce repetition and increase variety in the menu.
	Juice/fruit/vegetables: ½ cup	Raspberries	Pears (½ canned in light syrup or natural juices)	Pears (½ canned in light syrup or natural juices, 4 oz.)	Pears (½ cup canned in light syrup or natural juices, 4 oz.)	Raspberries are not representative of an item typically served at a cross-section of child-care centers in the country. Referred to USDA Food Buying Guide (http://fbg.nfsmi.org/descriptions.aspx?group=3).
	Fluid milk: ¾ cup (6 oz.)	Milk	1% white	1% white	Skim white 1% white	

Lunch	Meat/meat alternates: 1.5 oz.	Beef	Cheese pizza (1 individual size)	Cheese pizza (1 individual size)	Cheese pizza (1 individual size)	Food item adjusted to reduce repetition and increase variety in the menu.
	Grains/breads: ½ serving, ½ slice, or ¼ cup	Croissants	Crust (regular)	Crust (regular)	Crust (regular)	Food item adjusted to complement the lunch entrée (pizza).
	Fruit/vegetables: ¼ cup	Bananas	Grapes (slices, ¼ cup)	Grapes (slices, ¼ cup)	Grapes (slices, ¼ cup)	Food item adjusted due to feedback from Advisory Committee to reduce repetition and increase variety in the menu.
	Fruit/vegetables: ¼ cup	Green beans	String beans (¼ cup)	String beans (¼ cup)	String beans (¼ cup)	
	Fluid milk: ¾ cup (6 oz.)	Milk	1% chocolate (6 oz.)	Skim chocolate (6 oz.)	1% white (6 oz.)	
Snack	Meat/meat alternates: ½ ounce	American cheese	American cheese (4 cracker-sized slices)	American cheese (4 cracker-sized slices)		
	Grains/breads: ½ serving, ½ slice, or ¼ cup	Hi Ho/Ritz crackers	Crackers (round butter, 4)	Crackers (round butter, 4)	Crackers (whole grain, 4)	

	Fruits/Vegetables: ½ cup (proposed rule ½ cup of each)				Mandarin oranges (½ cup)	Best practice requires at least one of the two required components of every snack be a fruit or a vegetable. Therefore, fruit replaced cheese as the second snack.
	Fluid milk: ½ cup (4 oz.)					

Thursday

Meal	Quantity (ages 3-5)	Original	Pre-revision practice	Proposed rule	USDA best practices	Justification for change made to original menu
Breakfast	Grains/breads: ½ serving, ½ slice, or ¼ cup	Muffins	Fruit muffin (1 small)	Fruit muffin (whole grain, 1 small)	Fruit muffin (whole grain, 1 small)	
	Juice/fruit/vegetables: ½ cup	Applesauce	Apples (½ cup sliced)	Apples (½ cup sliced)	Apples (½ cup sliced)	Food item adjusted due to feedback from Advisory Committee to reduce repetition and increase variety in the menu.
	Fluid milk: ¾ cup (6 oz.)	Milk	1% white	1% white	1% white	

Lunch	Meat/meat alternates: 1.5 oz.	Chicken	Ground beef, 80-84% lean (1.5 oz.)	Ground beef, 80-84% lean (1.5 oz.)	Ground chicken (1.5 oz.)	Food item adjusted to reflect a meat component of lower cost in current practice and proposed rule menus and to better reflect change to service of a more lean meat choice.
	Grains/breads: ½ serving, ½ slice, or ¼ cup	Taco shells	Tortilla (flour, 1 small)	Tortilla (flour, 1 small)	Tortilla (whole-grain flour, 1 small)	Food item adjusted in order to show consistency in comparison across current, proposed, and best practice options.
	Fruit/vegetables: ¼ cup	Lettuce and tomato	Lettuce (1/8 cup, 1 large leaf, shredded) Tomato (1/8 cup, 1 medium slice, chopped)	Lettuce (1/8 cup, 1 large leaf, shredded) Tomato (1/8 cup, 1 medium slice, chopped)	Lettuce (1/8 c, 1 large leaf, shredded) Tomato (1/8 c, 1 medium slice, chopped)	
	Fruit/vegetables: ¼ cup	Peaches	Mixed fruit (¼ cup canned, in light syrup)	Mixed fruit (¼ cup canned, in light syrup)	Mixed fruit (¼ cup canned, in light syrup)	Food item adjusted due to feedback from Advisory Committee to reduce repetition and increase variety in the menu.

	Fluid milk: ¼ cup (6 oz.)	Milk	1% white milk (6 oz.)	1% white milk (6 oz.)	1% white milk (6 oz.)	
Snack	Meat/meat alternates: ½ ounce	Cottage cheese	Cottage cheese (½ oz.)	Cottage cheese (½ oz.)	Cottage cheese (1/2 oz.)	
	Grains/breads: ½ serving, ½ slice, or ¼ cup		Chocolate chip cookie (1 small cookie)			Food item adjusted due to Advisory Committee feedback and literature review noting that the serving of cookies at snack time is a practice of some CACFP providers.
	Fruits/vegetables: ½ cup (proposed rule ½ cup of each)	Strawberries		Strawberries (½ cup fresh)	Strawberries (½ cup fresh)	
	Fluid milk: ½ cup (4 oz.)					
Friday						
Meal	Quantity (ages 3-5)	Original	Pre-revision practice	Proposed rule	USDA best practices	Justification for change made to original menu
Breakfast	Grains/breads: ½ serving, ½ slice, or ¼ cup	Crispix	Cocoa Dyno-Bites cereal (¼ cup)	Plain O's cereal (whole grain, ¼ cup)	Plain O's cereal (whole grain, ¼ cup)	Literature review demonstrates that sugary cereals, while not as common as they once were in CACFP, are still currently served in some settings.

	Juice/fruit/vegetables: ½ cup	Blackberries	Mandarin oranges (½ cup)	Mandarin oranges (½ cup)	Mandarin oranges (½ cup)	Blackberries may be regionally available, but is not representative of an item typically served at a cross-section of child-care centers in the country. Referred to USDA Food Buying Guide http://fbg.nfsmi.org/descriptions.aspx?group=3 .
	Fluid milk: ¾ cup (6 oz.)	Milk	1% white (6 oz.)	1% white (6 oz.)	1% white (6 oz.)	
Lunch	Meat/meat alternates: 1.5 oz.	Chicken	Chicken strips (breaded, pre-fried, 3 medium strips)	Chicken strips (breaded, pre-fried, 3 medium strips)	Chicken strips (not pre-fried: broiled or baked, 3 medium strips)	
	Grains/breads: ½ serving, ½ slice, or ¼ cup	Biscuits	Waffle (white, 1 4" diameter)	Waffle (white, 1 4" diameter)	Waffle (white, 1 4" diameter)	Food item adjusted due to feedback from Advisory Committee; recommended that new item was more regionally available than original.

	Fruit/vegetables: ¼ cup	Apricots	Pineapple (¼ cup canned in light syrup)	Pineapple (¼ cup canned in light syrup)	Pineapple (¼ cup canned in light syrup)	Apricots are not representative of an item typically served at a cross-section of child-care centers in the country. Referred to USDA Food Buying Guide (http://fbg.nfsmi.org/descriptions.aspx?group=3).
	Fruit/vegetables: ¼ cup	Cauliflower	Broccoli (¼ cup cooked)	Broccoli (¼ cup cooked)	Broccoli (¼ cup cooked)	Cauliflower is not representative of an item typically served at a cross-section of child-care centers in the country. Referred to USDA Food Buying Guide (http://fbg.nfsmi.org/descriptions.aspx?group=2).
	Fluid milk: ¼ cup (6 oz.)	Milk	1% white (6 oz.)	Skim chocolate (6 oz.)	1% white (6 oz.)	
Snack	Meat/meat alternates: ½ ounce					
	Grains/breads: ½ serving, ½ slice, or ¼ cup	Cheese crackers	Cheese Sandwich Crackers (1/2 individual package)	Bagel (whole grain, ½ small)	Bagel (whole grain, ½ small)	
	Fruits/vegetables: ½ cup (proposed rule ½ cup of each)	Carrots	Apple juice (½ cup)	Apple juice (½ cup)	Apple juice (½ cup)	

	Fluid milk: ½ cup (4 oz.)					
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Notes: The current rule lunch meal pattern considers fruit and vegetables as one component, whereas the proposed rule lunch meal pattern separates them into two distinct components. Serving sizes remain the same, however.

For the snack pattern the following applies:

- Current rule: 2 of 4 components served;
- Proposed rule: 2 of 5 components served with fruits and vegetables as separate component;
- Best practices: 2 of 5 components served with at least one of the two required components as a fruit or vegetable.

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Appendix C: Children’s food consumption and associated nutrients by ethnic/racial group and family income levels

Table C.1.

Consumption of Food Groups by Family Income Levels

*Healthy Eating Index (HEI) scores across food components for children under age 5**

Measure	Possible score	All children under age 5	<185% of the FPL	>=185% of the FPL
HEI Score				
HEI-total score	100	52.9	51.7	54.4
Adequacy				
Whole fruit [†]	5	3.2	2.9	3.5
Total fruit	5	3.6	3.4	3.7
Greens/beans	5	1.0	1.0	0.9
Total vegetables	5	1.9	1.9	1.9
Whole grains [†]	10	2.9	2.5	3.3
Dairy	10	8.3	8.1	8.7
Total protein	5	3.3	3.4	3.2
Seafood/plant nuts [†]	5	1.1	0.9	1.4
Fatty acids	10	3.2	3.4	2.9
Moderation				
Refined grains	10	6.4	6.4	6.3
Sodium	10	6.3	6.1	6.6
Empty calories	20	11.8	11.5	12

*While children under 185 percent of the federal poverty level (FPL) are eligible for free or reduced-price meals at participating CACFP sites, these data do not distinguish between CACFP and non-CACFP enrolled children.

[†]Difference is significant between groups <185 percent of FPL and those >=185 percent FPL. The more beneficial value is highlighted in green.

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics, “What We Eat in America, NHANES 2011-2012,” accessed Sept. 9, 2015, <http://www.cdc.gov/Nchs/Nhanes/Search/DataPage.aspx?Component=Dietary&CycleBeginYear=2011>; U.S.

Table C.2
Consumption of Food Groups by Racial/Ethnic Group

Healthy Eating Index (HEI) scores across food components for children under age 5

Measure	Possible HEI score	All children under age 5 and <185% of the FPL	Non-Hispanic white	Non-Hispanic black	Hispanic	Non-Hispanic Asian	Other
HEI score							
HEI-total score*	100	51.7	51.1	51.6	52.3	56.1	51.5
Adequacy							
Whole fruit	5	2.9	2.9	2.6	3.2	3.9	2.4
Total fruit	5	3.4	3.4	3.4	3.5	3.7	3.3
Greens/beans [†]	5	1.0	0.7	1.0	1.5	0.8	0.5
Total vegetables [†]	5	1.9	1.7	2.0	2.2	1.6	2.1
Whole grains	10	2.5	2.8	2.4	2.1	3.6	3.5
Dairy	10	8.1	8.3	7.3	8.4	8.7	8.4
Total protein [‡]	5	3.4	3.2	3.9	3.6	2.7	2.9
Seafood/plant nuts [†]	5	0.9	1.2	0.9	0.6	1.0	0.8
Fatty acids [‡]	10	3.4	3.1	4.6	3.0	3.2	3.7
Moderation							
Refined grains	10	6.4	6.7	6.4	6.2	6.9	6.1
Sodium [‡]	10	6.1	6.6	5.6	6.0	6.9	5.5
Empty calories [§]	20	11.5	10.6	11.6	12.2	13.3	12.3

* Difference in HEI is significant between white and Asian populations.

[†] Difference in HEI component is significant between white and Hispanic populations.

[‡] Difference in HEI component is significant between white and non-Hispanic black populations.

[§] Difference in HEI component is significant between white and Hispanic, Asian, and other populations.

Note: Green highlights indicate the more beneficial values.

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics, “What We Eat in America, NHANES 2011-2012,” accessed Sept. 9, 2015, <http://wwwn.cdc.gov/Nchs/Nhanes/Search/DataPage.aspx?Component=Dietary&CycleBeginYear=2011>; U.S. Department of Agriculture Center for Nutrition Policy and Promotion, “Healthy Eating Index,” accessed May 2, 2016, <http://www.cnpp.usda.gov/healthyeatingindex>

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Table C.3

Consumption of Nutrients by Family Income Levels

Average daily consumption patterns by poverty status among children under age 3, 2011-12

Nutrient	Dietary reference intake ages 1-3	All children ages 1-3	Poverty <185% of the FPL	Poverty >=185% of the FPL
Calories and water				
Energy (kcal)	1,000-1,400	1,411.7	1,458.0	1,351.4
Total water (mL/d)	1,300	1,325.5	1,336.9	1,303.0
Macronutrients				
Protein (g/d)	13	51.3	52.3	49.8
Percentage calories from protein	5-20%	14.5%	14.3%	14.7%
Carbohydrate (g/d)	130	191.5	198.3	184.0
Percentage calories from carbohydrate	45-65%	54.3%	54.4%	54.5%

Fiber (g/d)	19	10.7	10.4	11.0
Total sugars (g/d)		100.6	104.8	96.7
Fat (g/d)		51.0	52.6	48.5
Percentage calories from fat	30-40%	32.5%	32.5%	32.3%
Saturated fatty acids (g/d)		18.8	19.1	18.2
Cholesterol (mg/d)		170.1	187.1	149.4
Minerals				
Calcium (mg/d)	700	984.7	985.0	987.0
Iron (mg/d)	7	10.3	10.6	9.9
Potassium (mg/d)	3,000	1,954.0	1,990.8	1,901.4
Sodium (mg/d)	1,500	1,966.0	2,049.3	1,849.1
Zinc (mg/d)	3	7.4	7.7	7.0
Vitamins				
Vitamin A (µg/d)	300	570.5	542.0	600.5
Vitamin C (mg/d)	15	85.2	85.0	85.7
Vitamin D (µg/d)	15	6.9	7.2	6.5
Vitamin E (mg/d)	6	5.0	4.8	5.1
Vitamin K (µg/d)	30	42.9	39.8	45.5
Vitamin B6 (mg/d)	0.5	1.3	1.3	1.3
Vitamin B12 (µg/d)	0.9	4.2	4.4	3.9
Thiamin (mg/d)	0.5	1.1	1.1	1.1
Riboflavin (mg/d)	0.5	1.7	1.8	1.7
Niacin (mg/d)	6	14.0	14.3	13.6
Folate (µg/d)	150	266.5	262.7	268.7

Notes: Cells that are highlighted in orange are those in which children are not consuming an adequate amount of that nutrient (the dietary reference intake falls outside the 95 percent confidence interval for consumption of the nutrient for the particular age group and type). Those cells that are not highlighted means that at least an adequate amount of that nutrient is being consumed for the specific group.

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics, “What We Eat in America, NHANES 2011-2012,” accessed Sept. 9, 2015, <http://www.cdc.gov/Nchs/Nhanes/Search/DataPage.aspx?Component=Dietary&CycleBeginYear=2011>; National Academies of Sciences, Engineering, and Medicine, “Dietary Reference Intakes Tables and Application,” accessed Oct. 27, 2016, <http://www.nationalacademies.org/hmd/Activities/Nutrition/SummaryDRIs/DRI-Tables.aspx>

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Table C.4

Consumption of Nutrients by Racial/Ethnic Groups for Children Under Age 3

Average daily consumption patterns for children under age 3, 2011-12

Nutrient	Dietary reference intake ages 1-3	All children ages 1-3	Non-Hispanic white	Non-Hispanic black	Hispanic	Non-Hispanic Asian	Other
Calories and water							
Energy (kcal)	1,000-1,400	1,411.7	1,406.4	1,534.1	1,366.8	1,289.5	1,431.4
Total water (mL/d)	1,300	1,325.5	1,271.8	1,409.2	1,349.2	1,286.8	1,496.0
Macronutrients							
Protein (g/d)	13	51.3	50.9	52.4	51.5	49.3	53.4
Percentage calories from protein	5-20%	14.5%	14.5%	13.7%	15.1%	15.3%	14.9%
Carbohydrate (g/d)	130	191.5	190.8	209.1	184.3	174.6	198.2
Percentage calories from carbohydrate	45-65%	54.3%	54.3%	54.5%	53.9%	54.2%	55.4%
Fiber (g/d)	19	10.7	10.8	10.5	10.4	10.1	12.1
Total sugars (g/d)		100.6	100.7	106.8	99.7	81.9	102.5

Fat (g/d)		51.0	51.2	56.2	48.9	45.2	49.8
Percentage calories from fat	30-40%	32.5%	32.8%	33.0%	32.2%	31.5%	31.3%
Saturated fatty acids (g/d)		18.8	19.2	18.8	18.4	16.7	19.9
Cholesterol (mg/d)		170.1	156.2	186.3	192.6	158.3	142.0
Minerals							
Calcium (mg/d)	700	984.7	991.9	892.9	1,027.0	924.7	1,050.6
Iron (mg/d)	7	10.3	9.9	11.2	10.4	10.3	11.4
Potassium (mg/d)	3,000	1,954.0	1,904.7	1,999.5	2,030.7	1,825.1	2,004.1
Sodium (mg/d)	1,500	1,966.0	1,912.5	2,208.0	1,920.4	1,853.7	2,062.0
Zinc (mg/d)	3	7.4	7.4	7.4	7.5	7.4	8.1
Vitamins							
Vitamin A (µg/d)	300	570.5	573.9	534.6	596.9	507.6	576.4
Vitamin C (mg/d)	15	85.2	81.7	107.2	81.3	79.9	74.7
Vitamin D (µg/d)	15	6.9	6.6	6.3	7.6	7.2	8.0
Vitamin E (mg/d)	6	5.0	5.1	5.4	4.4	4.8	5.1
Vitamin K (µg/d)	30	42.9	41.1	50.6	40.2	50.4	42.5
Vitamin B6 (mg/d)	0.5	1.3	1.3	1.4	1.3	1.2	1.4
Vitamin B12 (µg/d)	0.9	4.2	4.0	4.1	4.4	4.1	4.7
Thiamin (mg/d)	0.5	1.1	1.1	1.2	1.1	1.2	1.3
Riboflavin (mg/d)	0.5	1.7	1.7	1.7	1.8	1.6	1.9
Niacin (mg/d)	6	14.0	13.9	15.9	13.1	13.0	14.9
Folate (µg/d)	150	266.5	260.6	272.6	263.6	289.3	297.5

Notes: Cells that are highlighted in orange are those in which children are not consuming an adequate amount of that nutrient (the dietary reference intake falls outside the 95 percent confidence interval for consumption of the nutrient for the particular age group and type). Those cells that are not highlighted means that at least an adequate amount of that nutrient is being consumed for the specific group.

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics, “What We Eat in America, NHANES 2011-2012,” accessed Sept. 9, 2015, <http://www.cdc.gov/Nchs/Nhanes/Search/DataPage.aspx?Component=Dietary&CycleBeginYear=2011>; National Academies of Sciences, Engineering, and Medicine, “Dietary Reference Intakes Tables and Application,” accessed Oct. 27, 2016, <http://www.nationalacademies.org/hmd/Activities/Nutrition/SummaryDRIs/DRI-Tables.aspx>

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Table C.5

Consumption of Nutrients by Family Income Levels for Children Ages 4-5

Average daily consumption patterns by poverty status among children ages 4-5, 2011-12

Nutrient	Dietary reference intake ages 4-5	All children ages 4-5	Poverty <185% of the FPL	Poverty >=185% of the FPL
Calories and water				
Energy (kcal)	1,200-1,600	1,692.3	1,756.5	1,616.2
Total water (mL/d)	1,700	1,369.0	1,437.7	1,240.4
Macronutrients				
Protein (g/d)	19	58.4	63.1	53.4
Percentage calories from protein	10-30%	13.8%	14.4%	13.2%
Carbohydrate (g/d)	130	232.4	237.1	225.7
Percentage calories from carbohydrate	45-65%	54.9%	54.0%	55.9%
Fiber (g/d)	25	12.9	13.4	12.5
Total sugars (g/d)		117.7	119.5	115.0
Fat (g/d)		61.3	64.1	58.4
% Calories from fat	25-35%	32.6%	32.9%	32.5%

Saturated fatty acids (g/d)		22.2	23.2	21.4
Cholesterol (mg/d)		174.8	189.6	153.9
Minerals				
Calcium (mg/d)	1,000	1,017.7	1,060.0	996.6
Iron (mg/d)	10	12.5	13.5	11.3
Potassium (mg/d)	3,800	2,081.6	2,181.6	1,953.5
Sodium (mg/d)	1,900	2,491.2	2,674.6	2,271.0
Zinc (mg/d)	5	8.6	9.6	7.5
Vitamins				
Vitamin A (µg/d)	400	586.3	599.2	586.6
Vitamin C (mg/d)	25	82.7	88.6	73.3
Vitamin D (µg/d)	15	6.4	7.1	5.8
Vitamin E (mg/d)	7	5.8	6.1	5.4
Vitamin K (µg/d)	55	55.3	56.7	54.8
Vitamin B6 (mg/d)	0.6	1.5	1.6	1.3
Vitamin B12 (µg/d)	1.2	4.4	4.9	3.9
Thiamin (mg/d)	0.6	1.4	1.4	1.3
Riboflavin (mg/d)	0.6	1.9	2.0	1.7
Niacin (mg/d)	8	17.3	19.0	15.1
Folate (µg/d)	200	323.3	350.2	292.0

Notes: Cells that are highlighted in orange are those in which children are not consuming an adequate amount of that nutrient (the dietary reference intake falls outside the 95 percent confidence interval for consumption of the nutrient for the particular age group and type). Those cells that are not highlighted means that at least an adequate amount of that nutrient is being consumed for the specific group.

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics, “What We Eat in America, NHANES 2011-2012,” accessed Sept. 9, 2015, <http://www.cdc.gov/Nchs/Nhanes/Search/DataPage.aspx?Component=Dietary&CycleBeginYear=2011>; National Academies of Sciences, Engineering, and Medicine, “Dietary Reference Intakes Tables and Application,” accessed Oct. 27, 2016, <http://www.nationalacademies.org/hmd/Activities/Nutrition/SummaryDRIs/DRI-Tables.aspx>.

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Table C.6**Consumption of Nutrients by Racial/Ethnic Groups for Children Ages 4-5***Average daily consumption patterns for children, 2011-12*

Nutrient	Dietary reference intake, ages 4-5	All children ages 4-5	Non-Hispanic white	Non-Hispanic black	Hispanic	Non-Hispanic Asian	Other
Calories and water							
Energy (kcal)	1,200-1,600	1,692.3	1,696.4	1,711.0	1,681.9	1,632.3	1,712.5
Total water (mL/d)	1,700	1,369.0	1,305.7	1,384.2	1,483.4	1,421.1	1,436.4
Macronutrients							
Protein (g/d)	19	58.4	57.3	58.5	60.7	61.7	54.7
Percentage calories from protein	10-30%	13.8%	13.5%	13.7%	14.4%	15.1%	12.8%
Carbohydrate (g/d)	130	232.4	234.8	230.2	231.8	217.6	230.1
Percentage calories from carbohydrate	45-65%	54.9%	55.4%	53.8%	55.1%	53.3%	53.7%
Fiber (g/d)	25	12.9	12.8	12.1	13.6	13.9	12.6
Total sugars (g/d)		117.7	124.8	109.5	113.7	95.2	96.7
Fat (g/d)		61.3	61.6	63.9	59.1	59.1	65.2
Percentage calories from fat	25-35%	32.6%	32.7%	33.6%	31.6%	32.6%	34.3%
Saturated fatty acids (g/d)		22.2	22.6	21.1	22.1	23.0	20.0
Cholesterol (mg/d)		174.8	154.5	217.3	187.9	190.4	211.2
Minerals							

Calcium (mg/d)	1,000	1,017.7	1,043.2	878.6	1,063.3	1,024.1	820.4
Iron (mg/d)	10	12.5	12.0	13.3	13.1	12.4	10.4
Potassium (mg/d)	3,800	2,081.6	2,060.2	2,099.2	2,127.0	2,166.6	1,869.1
Sodium (mg/d)	1,900	2,491.2	2,419.6	2,675.4	2,477.1	2,590.5	2,894.2
Zinc (mg/d)	5	8.6	8.4	8.8	9.2	9.1	7.5
Vitamins							
Vitamin A (µg/d)	400	586.3	592.9	566.7	604.8	552.4	457.9
Vitamin C (mg/d)	25	82.7	79.0	98.1	85.5	68.6	76.0
Vitamin D (µg/d)	15	6.4	6.5	5.8	6.9	7.3	4.4
Vitamin E (mg/d)	7	5.8	5.8	6.4	5.1	6.4	6.7
Vitamin K (µg/d)	55	55.3	54.7	71.3	42.7	73.5	63.4
Vitamin B6 (mg/d)	0.6	1.5	1.4	1.8	1.6	1.5	1.3
Vitamin B12 (µg/d)	1.2	4.4	4.2	4.7	4.9	4.6	3.4
Thiamin (mg/d)	0.6	1.4	1.3	1.4	1.4	1.4	1.1
Riboflavin (mg/d)	0.6	1.9	1.9	1.8	1.9	1.9	1.5
Niacin (mg/d)	8	17.3	16.3	20.4	17.9	16.4	15.7
Folate (µg/d)	200	323.3	310.0	324.7	350.0	370.8	259.7

Notes: Cells that are highlighted in orange are those in which children are not consuming an adequate amount of that nutrient (the dietary reference intake falls outside the 95 percent confidence interval for consumption of the nutrient for the particular age group and type). Those cells that are not highlighted means that at least an adequate amount of that nutrient is being consumed for the specific group.

Sources: Centers for Disease Control and Prevention, National Center for Health Statistics, "What We Eat in America, NHANES 2011-2012," accessed Sept. 9, 2015, <http://www.cdc.gov/Nchs/Nhanes/Search/DataPage.aspx?Component=Dietary&CycleBeginYear=2011>; National

Academies of Sciences, Engineering, and Medicine, "Dietary Reference Intakes Tables and Application," accessed Oct. 27, 2016, <http://www.nationalacademies.org/hmd/Activities/Nutrition/SummaryDRIs/DRI-Tables.aspx>

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Appendix D: Menu scenario analyses

Table D.1

Hypothetical Menu Scenarios and Healthy Eating Index (HEI) Scores by Component

Shifts in consumption of foods may occur across menus; greatest improvement in whole grains

	Possible score	Pre-revision practice	Proposed rule	USDA Best practices
HEI score				
HEI-total score*	100	55.5	64.0	72.3
Adequacy[†]				
Whole fruit	5	5.0	5.0	5.0
Total fruit	5	4.6	4.6	5.0
Greens/beans	5	1.0	1.0	1.0
Total vegetables	5	1.4	1.8	1.9
Whole grains*	10	0.8	6.2	10.0
Dairy	10	10.0	10.0	10.0
Total protein	5	3.4	3.5	3.9
Seafood/plant nuts	5	1.0	1.0	1.0
Fatty acids	10	2.0	1.8	1.4
Moderation[‡]				
Refined grains	10	3.2	5.4	7.6
Sodium	10	5.7	4.7	5.7
Empty calories	20	17.5	19.1	20.0

* Denotes significant difference between current practice and best practices menus.

[†] Adequacy signifies meal components for which a minimum threshold must be met in order to achieve the maximum score.

[‡] Moderation signifies meal components for which a maximum threshold must not be exceeded in order to achieve the maximum score.

Source: Health Impact Assessment team analysis of developed sample menus using the CDC's National Health and Nutrition Examination Survey's Healthy Eating Index (HEI) and USDA's Food Patterns Equivalents Database (FPED) and Food and Nutrient Database for Dietary Studies (FNDDS) database

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Table D.2

Nutrient Consumption and Percent Dietary Reference Intake Dietary Reference Intake (DRI) for Children Age 3 Under Sample Menus

Possible shifts may occur across menu scenarios

Nutrient	DRI (age 2-3)	Pre-revision practice		Proposed rule		USDA Best practices	
		Daily average	Percentage DRI	Daily average	Percentage DRI	Daily average	Percentage DRI
Calories and water							
Energy (kcal)*	1,000-1,400	790.8		745.4		722.4	
Total water (mL/d)*	1,300	614.0	47%	631.0	49%	677.8	52%
Macronutrients							
Protein (g/d)	13	35.6	274%	36.5	281%	36.4	280%
Percentage calories from protein	5-20%	18%		20%		21%	
Carbohydrate (g/d)	130	113.1	87%	108.7	84%	110.7	85%
Percentage calories from carbohydrate	45-65%	58%		59%		62%	
Sugars, total		60.4		55.7		55.7	
Added sugars		17.4		12.9		7.82	
Percentage calories from added sugars		9.1%		7.1%		4.5%	
Fiber (g/d)*	19	6.4	34%	8.0	42%	10.8	57%
Fat (g/d)*		23.0		19.9		16.8	
Percentage calories from fat*	30-40%	25%		23%		20%	
Saturated fats (g/d)*		9.0		7.9		6.6	
Percentage calories from saturated fats*		9.7%		8.9%		7.9%	
Cholesterol (mg/d)		64.2		61.6		56.2	
Minerals							

Calcium (mg/d)	700	804.1	115%	801.3	115%	694.9	99%
Iron (mg/d)	7	5.7	82%	6.2	89%	5.9	84%
Potassium (mg/d)*	3,000	1,254.8	42%	1,276.1	43%	1,390.6	46%
Sodium (mg/d)	1,500	1,227.0	82%	1,221.7	88%	1,101.6	80%
Zinc (mg/d)	3	4.6	154%	5.0	165%	4.8	161%
Vitamins							
Vitamin A (µg/d)	300	392.5	131%	395.3	132	388.1	129
Vitamin C (mg/d)	15	34.1	227%	41.7	278%	61.7	412%
Vitamin D (µg/d)	15	5.3	35%	5.2	34%	4.6	31%
Vitamin E (mg/d)	6	2.1	36%	2.2	36%	2.2	37%
Vitamin K (µg/d)	30	37.5	68%	35.3	64%	34.4	63%
Vitamin B6 (mg/d)*	0.5	0.7	147%	0.7	145%	0.9	178%
Vitamin B12 (µg/d)	0.9	3.3	277%	3.4	284%	3.0	253%
Thiamin (mg/d)*	0.5	0.6	129%	0.7	131%	0.7	136%
Riboflavin (mg/d)	0.5	1.3	255%	1.3	254%	1.2	248%
Niacin (mg/d)*	6	8.0	134%	8.2	137%	9.2	153%
Folate (µg/d)	150	145.4	97%	146.2	97%	141.4	94%

* Denotes significant difference between current practice and best practices menu.

Notes: Empty cells indicate areas in which a range of guidance or no guidance was presented for the nutrient; therefore, a percentage was not calculated due to lack of exact guidance.

Source: Health Impact Assessment analysis of developed sample menus using the CDC's National Health and Nutrition Examination Survey's Healthy Eating Index (HEI) and USDA's Food Patterns Equivalents Database (FPED) and Food and Nutrient Database for Dietary Studies (FNDDS) database

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Table D.3**Nutrient Consumption and Percent Dietary Reference Intake (DRI) for Children Ages 4-5 Under Sample Menus***Possible shifts may occur across menu scenarios*

Nutrient	DRI (ages 4-5)	Current practice		Proposed rule		Best practices	
		Daily average	Percentage DRI	Daily average	Percentage DRI	Daily average	Percentage DRI
Calories and water							
Energy (kcal)*	1,200-1,600	790.8		745.4		722.4	
Total water (mL/d)*	1,700	614.0	36%	631.0	37%	677.8	40%
Macronutrients							
Protein (g/d)	19	35.6	187%	36.5	192%	36.4	192%
Percentage calories from protein	10-30%	18%		20%		21%	
Carbohydrate (g/d)	130	113.1	87%	108.7	84%	110.7	85%
Percentage calories from carbohydrate	45-65%	58%		59%		62%	
Sugars, total		60.4		55.7		55.7	
Added sugars		17.4		12.9		7.82	
Percentage calories from added sugars		9.1%		7.1%		4.5%	
Fiber (g/d)*	25	6.4	26%	8.0	32%	10.8	43%
Fat (g/d)*		23.0		19.9		16.8	
Percentage calories from fat*	25-35%	25%		23%		20%	

Saturated fats (g/d)*		9.0		7.9		6.6	
Percentage calories from saturated fats*		9.7%		8.9%		7.9%	
Cholesterol (mg/d)		64.2		61.6		56.2	
Minerals							
Calcium (mg/d)	1,000	804.1	80%	801.3	80%	694.9	70%
Iron (mg/d)	10	5.7	57%	6.2	62%	5.9	59%
Potassium (mg/d)*	3,800	1,254.8	33%	1,276.1	34%	1,390.6	37%
Sodium (mg/d)	1,900	1,227.0	65%	1,221.7	70%	1,101.6	64%
Zinc (mg/d)	5	4.6	92%	5.0	99%	4.8	97%
Vitamins							
Vitamin A (µg/d)	400	392.5	98%	395.3	99%	388.1	97%
Vitamin C (mg/d)	25	34.1	136%	41.7	167%	61.7	247%
Vitamin D (µg/d)	15	5.3	35%	5.2	34%	4.6	31%
Vitamin E (mg/d)	7	2.1	31%	2.2	31%	2.2	32%
Vitamin K (µg/d)	55	37.5	68%	35.3	64%	34.4	63%
Vitamin B6 (mg/d)*	0.6	0.7	122%	0.7	121%	0.9	148%
Vitamin B12 (µg/d)	1.2	3.3	277%	3.4	284%	3.0	253%

Thiamin (mg/d)*	0.6	0.6	108%	0.7	110%	0.7	113%
Riboflavin (mg/d)	0.6	1.3	213%	1.3	211%	1.2	206%
Niacin (mg/d)*	8	8.0	101%	8.2	103%	9.2	115%
Folate (µg/d)	200	145.4	73%	146.2	73%	141.4	71%

*Denotes significant difference between current practice and best practices menu.

Note: Empty cells indicate areas in which a range of guidance or no guidance was presented for the nutrient; therefore, a percentage was not calculated due to lack of exact guidance.

Sources: United States Department of Agriculture, *Dietary Guidelines for Americans*, accessed Oct. 1, 2015, <http://health.gov/dietaryguidelines/dga2010/dietaryguidelines2010.pdf>; Institute of Medicine, *Dietary Reference Intakes*, accessed Dec. 15, 2015, https://www.nal.usda.gov/fnic/DRI/DRI_Energy/107-264.pdf; National Academies Press, *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids (2002/2005) and Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate (2005)*, accessed Sept. 9, 2015, http://www.nal.usda.gov/fnic/DRI/DRI_Tables/DRI_RDAs_Adequate_Intakes_Total_Water_Macronutrients.pdf; National Academies Press, *Dietary Reference Intakes for Calcium, Phosphorous, Magnesium, Vitamin D, and Fluoride (1997); Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin, and Choline (1998); Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids (2000); Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc (2001); Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate (2005); and Dietary Reference Intakes for Calcium and Vitamin D (2011)*, accessed Sept. 9, 2015, http://www.nal.usda.gov/fnic/DRI/DRI_Tables/RDA_All_vitamins_elements.pdf; Health Impact Assessment team analysis of developed sample menus using the CDC's National Health and Nutrition Examination Survey's Healthy Eating Index (HEI) and USDA's Food Patterns Equivalents Database (FPED) and Food and Nutrient Database for Dietary Studies (FNDDS) database.

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Appendix E: Current health conditions for children

Table E.1.

Prevalence of Obesity Among Children Ages 2-4 by Family Income Level, 2011

State	Income-to-poverty ratio (%)									
	≤50		51-100		101-130		131-150		151-185	
	N	%	N	%	N	%	N	%	N	%
Overall	836,093	14.2	814,893	14.5	294,300	13.4	135,449	12.4	160,690	11.8
Alabama	829	13.0	1,305	13.0	1,059	12.7	909	11.1	1,313	10.9
Arizona	34,976	15.4	28,734	14.6	10,873	13.5	5,115	12.4	5,385	11.5
Arkansas	14,293	13.8	14,360	15.3	4,751	13.9	1,933	15.0	2,131	11.5
Colorado	7,583	10.7	10,062	10.7	4,346	8.7	1,918	8.4	2,118	7.6
Connecticut	14,083	16.2	7,093	16.5	2,797	15.3	1,385	12.5	1,618	13.0
Delaware	209	16.3	41		27		18		25	
District of Columbia	3,124	11.5	1,077	15.4	499	15.8	197	11.7	235	12.8
Florida	81,091	13.0	100,232	14.0	27,740	12.4	11,494	11.3	13,037	10.9
Georgia	60,580	12.3	51,471	14.7	13,574	13.0	5,954	11.5	6,504	10.9
Hawaii	4,004	10.6	4,599	10.2	2,752	9.0	1,801	7.5	2,414	7.4
Idaho	6,076	12.5	7,793	12.5	3,936	10.6	1,898	8.8	2,326	9.2
Illinois	40,577	14.6	55,395	15.4	18,046	14.5	6,778	13.1	6,772	12.6
Indiana	21,918	14.5	26,160	14.8	9,222	13.9	3,844	12.9	4,352	12.0
Iowa	10,647	15.4	11,585	14.9	5,259	13.7	2,508	12.6	3,073	12.5
Kansas	9,538	13.9	13,689	13.2	6,538	12.4	3,200	10.8	3,594	10.7
Kentucky	6,239	15.8	3,255	15.9	1,631	13.1	979	12.1	1,300	11.5
Maryland	21,085	13.8	20,135	16.7	9,857	16.3	4,946	15.7	5,942	15.3
Massachusetts	18,534	17.3	22,457	16.7	8,941	15.6	4,362	15.7	5,335	13.6
Michigan	46,212	13.7	38,233	13.7	13,443	12.1	6,270	11.8	7,599	10.9
Minnesota	2,743	12.9	4,803	13.5	3,522	12.0	2,264	10.6	3,695	10.3
Mississippi	13,861	13.5	16,441	14.6	5,254	13.8	1,927	14.9	2,358	13.3

Missouri	25,911	13.0	21,852	13.4	8,203	12.5	3,619	11.6	4,430	11.0
Montana	4,174	14.5	3,476	11.2	1,348	8.3	630	6.0	895	8.9
Nebraska	6,458	15.0	7,559	14.4	3,678	13.9	1,731	13.2	2,115	13.1
Nevada	4,852	13.3	7,254	13.0	2,905	12.4	1,439	12.2	1,439	9.5
New Hampshire	2,391	16.3	2,712	15.2	1,296	14.0	648	12.2	919	11.6
New Jersey	17,762	16.1	35,042	17.2	12,582	16.7	5,068	15.5	5,496	14.8
New Mexico	9,872	12.1	9,875	11.0	3,630	10.8	1,570	10.0	1,718	9.3
New York	81,387	14.1	91,502	14.8	23,738	14.3	10,087	13.6	12,213	13.1
North Carolina	10,507	14.7	4,014	15.8	2,645	11.0	2,030	9.2	2,584	9.1
North Dakota	2,268	17.2	1,578	12.9	973	10.6	585	9.7	863	9.5
Ohio	48,094	12.9	38,105	12.7	15,536	11.5	7,469	11.2	9,127	10.5
Oregon	17,997	16.1	19,605	15.2	8,066	13.8	3,549	13.0	4,167	12.2
Pennsylvania	41,189	12.7	38,174	12.6	16,421	12.0	8,556	11.7	10,986	10.6
Puerto Rico	45,963	17.7	16,929	17.3	5,945	17.9	2,629	17.7	3,175	18.7
Rhode Island	2,794	16.9	2,758	18.0	1,148	16.7	478	15.3	605	16.9
South Dakota	3,604	18.6	3,098	14.2	1,537	13.3	759	12.6	933	11.5
Tennessee	38,090	14.0	17,600	15.2	5,540	14.3	2,889	13.0	3,287	11.8
U.S. Virgin Islands	1,071	10.9	582	10.7	285	8.8	144	9.7	171	17.5
Washington	32,870	15.3	36,142	14.5	17,124	13.4	7,856	11.5	9,320	11.4
West Virginia	9,614	14.6	7,658	13.9	2,489	12.8	1,097	14.2	1,413	12.4
Wisconsin	11,023	14.0	10,458	14.3	5,144	14.2	2,916	13.2	3,708	12.3

Notes: Income-to-poverty ratios reflect family income in relation to poverty threshold. The poverty level varies by family size, the number of related children, and the age of the head of household, but not by state. For example, a family of four with two children and an annual income of \$22,811 were at the poverty level in 2011. For income-to-poverty ratios less than 100 percent, the family income is lower than the poverty threshold. When the ratio equals 100 percent, the income and poverty level are the same, and when the ratio is greater than 100 percent, the income is higher than the poverty level. A ratio of 130 percent indicates that family income was 30 percent above the poverty level. Empty cells indicate areas in which N<50 or the relative standard error is $\geq 30\%$.

Source: Centers for Disease Control and Prevention, "The prevalence of obesity among low-income children aged 2 through 4 years, by state and income, 2011," accessed Aug. 3, 2016,

<https://www.cdc.gov/obesity/data/prevalence-obesity-childhood.html>

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Table E.2**Prevalence of Obesity Among Low-Income Children Ages 2-4 by Racial/Ethnic Group, 2011**

Race	Under 1 year	1 year	2-4 years	Obesity rate for children under 4 in each racial/ethnic group
White, non-Hispanic	6.7	12.5	12.1	10.3
Black, non-Hispanic	7.8	13.1	11.5	10.6
Hispanic	9.5	16.0	17.8	14.7
American Indian/Alaska Native	9.4	21.9	20.3	17.7
Asian/Pacific Islander	6.8	9.4	11.3	9.3
Multiple races	7.7	14.1	13.0	11.5
All other/unknown	7.9	13.6	14.7	10.9

Sources: Liping Pan et al., "Trends in State/Territorial Obesity Prevalence by Race/Ethnicity Among U.S. Low-Income, Preschool-Aged Children," *Pediatric Obesity* 11, no. 5 (2015): 397–402, <http://dx.doi.org/10.1111/ijpo.12078>; Centers for Disease Control and Prevention, "Growth Indicators by Race/Ethnicity and Age, 2011," Pediatric Nutrition Surveillance System, accessed May 11, 2016 (no longer archived by CDC)

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Table E.3**Prevalence of Anemia Among Low-Income Children Under age 5 by Racial/Ethnic Group, 2011**

Race	6-11 months	12-17 months	18-23 months	2 years	3-4 years	Rate of anemia for children under 5 in each racial/ethnic group
White, non-Hispanic	15.2	14.7	11.2	11.2	7.3	11.0
Black, non-Hispanic	23.5	25.3	24.2	24.9	18.6	22.5
Hispanic	18.1	17.3	14.2	14.4	9.2	13.3
American Indian/Alaska Native	17.0	14.5	14.7	14.5	8.0	12.3
Asian/Pacific Islander	15.5	14.7	13.9	15.1	10.4	13.3
Multiple races	17.7	18.3	15.5	15.5	10.9	14.7
All other/unknown	16.5	15.0	12.7	15.7	11.9	14.0

Sources: Massachusetts Department of Public Health, "2011 Pediatric Data Report" (January 2015), <http://www.mass.gov/eohhs/docs/dph/wic/reports/pednss-report-11.pdf>; Centers for Disease Control and Preventions, "Anemia by Race/Ethnicity and Age, 2011," Pediatric Nutrition Surveillance System, accessed May 11, 2016 (no longer archived by CDC)

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