

Supplementary Online Content

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eReferences

This supplementary material has been provided by the authors to give readers additional information about their work.

eText

Harmonizing Dietary Data

Sodium

To ensure comparability across time, some modifications were made to sodium intake to ensure comparability across time. In 2007-2008, the estimation of sodium changed in What We Eat in America. Prior to 2007, respondents were asked to report the frequency with which they add salt while cooking, and this information was used to estimate the amount of sodium in home-prepared foods (e.g., cooked vegetables). In 2007-2008, this modification question was dropped. To facilitate comparability across time, the default sodium values from the Food and Nutrient Database for Dietary Studies, which assumed that salt was not added while cooking, were used to estimate sodium intake from 1999-2007.¹ This approach is consistent with recommendations by researchers at the United States Department of Agriculture.

Processed Meat

The MPED (1999-2004) and FPED (2005-2012) classified processed meat differently. MPED did not include smoked or cured meat, such as bacon or ham in the processed meat category, while the FPED did.^{2,3} To ensure comparability across time and consistency with prior nutritional epidemiologic research, smoked/cured meat were included as processed meat for 1999-2004.

Dairy Foods

Some very minor changes were made to the coding of the dairy category from MPED to FPED. MPED coded frozen yogurts as milk and FPED coded these as yogurts. Therefore, MPED was modified so that frozen yogurt was reclassified as yogurt. Fat free cream cheese in FPED is classified as cheese. In MPED it is coded as a solid fat. Therefore, fat free cream cheese from MPED was reclassified as cheese. Lastly, calcium fortified soy milk is classified as milk in FPED and soy in MPED. For ease of interpretation we removed calcium fortified soy milk from the definition of milk and total dairy from FPED. Total dairy intake was adjusted to account for each of these changes.

Trend Tests

To evaluate whether there were linear trends in the population mean intake for the selected dietary factors, we used survey-weighted linear regression with the dietary factor as the outcome and survey year as the independent variable. Because each survey cycle is the same length (2-years), coding survey cycle 1 through 7 will yield a valid estimate of a p-value trend. While there are other approaches to evaluating the presence of a linear trend this approach was used as it allows us to account for weighting and the complex survey design of NHANES data. The approach used here is analogous to the approach used to test for trends in epidemiologic studies (e.g., using logistic regression or a similar model and coding quintiles either as 1,2,3,4,5 or as mid-points of the quintiles range).

Measuring Usual Intake Distributions and Percent of Population Meeting Recommendations

The National Cancer Institute (NCI) method was used to characterize the usual dietary intake for key food groups and nutrients related to chronic disease risk (e.g., fruits, vegetables, whole grain, sodium, processed meat).^{4,5} Detailed descriptions of the NCI methods are described elsewhere, but this is the preferred method to estimate the percent of the population meeting a pre-specified threshold.⁶⁻⁸ Two models were used, one that models both the amount and probability of consuming a given food/nutrient for foods/nutrients not consumed by most individuals on all days (e.g., fish and shellfish, processed meat or whole grains). For the remaining foods/nutrients a ubiquitous model was used which includes only the amount consumed (e.g., for vegetables, sodium or added sugars).

The percent of individuals meeting (for beneficial nutrients/food groups) or failing to meet (for nutrients/food groups to limit) was estimated for pre-specified threshold values obtained from multiple sources, including the 2015 Dietary Guidelines for Americans, the theoretical minimum/maximum values from the Global Burden of Disease project, the American Heart Association diet score, or pre-specified intake when no external standard was available or when current intake far below recommended levels (e.g., for whole grains, 0.3% of adults consumed more than 3 servings of whole grains per day in 2003-2004).^{7,9,10}

Because the NCI method requires a second dietary recall on a subset of individuals, for 1999-2000 and 2001-2002 proportions were imputed by evaluating the association between the percent meeting the threshold value based on the first-day value (which was available for all years) and the NCI method for the years with complete data (2003-2004 onwards). An exponential model was fit comparing these two values and if the r^2 value exceeded 0.50 values for 1999-2000 and 2001-2002 were estimated based on the association. When the r^2 was less than 0.50 (e.g., as was seen for unprocessed red meat and processed meat), we opted not to impute the values and instead present the trends for 2003-2004 onwards. To estimate the precision of the percent meeting recommendations for 1999-2000 and 2001-2002 we opted for a conservative approach where we applied the relative standard error from the least precise estimate for 2003-2004 onwards to the 1999-2000 and 2001-2002 to the point estimate. Because the estimates could be somewhat unstable from cycle to cycle, for graphical presentation we collapsed the data into three time periods: 1999-2002, 2003-2008 and 2009-2012. The NCI Method was implemented in SAS using macros ('MIXTRAN' and 'DISTRIB') provided by the National Cancer Institute.⁸

To account for the complex sampling design of NHANES we used balanced repeated replicate weights using a Fay's adjustment of 0.7, with 16 model runs for each NHANES cycle.

The American Heart Association (AHA) Diet Scores

To assess a summary diet score, we constructed a continuous diet score based on the AHA 2020 Strategic Impact Goal dietary targets,¹¹ which have been significantly associated with cardiovascular and metabolic outcomes in multiple analyses.^{9,11} The primary dietary targets are fruits/vegetables, fish and shellfish, sodium, sugar-sweetened beverages, and whole grains; and secondary targets: nuts/legumes/seeds, processed meat, and saturated fat (**eTable 1**). To best assess changes, we constructed a continuous score. Intake of each dietary item was scored from 0-10 or 10-0 depending on whether consumption was encouraged or discouraged, respectively. All dietary variables were energy-adjusted to 2000 kcal/d using the residual method prior to analysis. Optimal intake (i.e., at or greater than the target AHA level for encouraged foods/nutrients; or at or less than the target AHA level for discouraged foods/nutrients) was assigned a score of 10, and intermediate intake was scored linearly between 0 and 10. The scoring ranges are provided in **eTable 1**. The sum of the dietary components was used to create two scores, a primary score (5 primary dietary targets) ranging from 0-50; and a secondary score (5 primary and 3 secondary dietary targets) ranging from 0-80. Based on AHA 2020 targets, the proportion of US adults with poor (<40% of optimal score), intermediate (40-79.9% of optimal score) or ideal (\geq 80% of optimal score) dietary quality were evaluated. Because these scores assess distributions of intake, which are not comparable from a single 24-hour recall vs. the mean of two recalls, analyses of the AHA Diet Scores were based on results from participants with two non-consecutive 24-hour recalls (2003-onwards).

eTable 1. Dietary Components of the American Heart Association (AHA) 2020 Strategic Impact Goals, with Continuous Scoring System^a

	Scoring Range	Maximum points
AHA primary score: 50 points ^a	Sum of 1-5	50
(1) Fruits and vegetables ≥ 4.5 cups/d ^b	0 to ≥ 4.5 cups/d	10
(2) Whole grains ≥ 3 oz-equivalents/d	0 to ≥ 3 oz-equivalents/d	10
(3) Fish and shellfish ≥ 2 100-g servings/wk (1 oz/d)	0 to ≥ 1 oz/d	10
(4) SSB ≤ 36 fl oz/wk (≤ 5.14 fl oz/d)	≤ 5.14 to >16 fl oz/d	10
(5) Sodium ≤ 1500 mg/d	≤ 1500 to >4500 mg/d	10
AHA secondary score: 80 points	Sum of 1-8 (80)	80
(6) Nuts, seeds, and legumes ≥ 4 servings/wk	0 to ≥ 4 servings/wk	10
(7) Processed meat ≤ 2 50-g servings/wk (≤ 0.5 oz/d)	≤ 0.5 to >1.764 oz/d	10
(8) Saturated fat $\leq 7\%$ energy	≤ 7 to $>15\%$ energy	10

^a We evaluated each AHA consumption target based on a continuous scoring system. Intake of each dietary item was scored from 0-10 or 10-0 depending on whether consumption was encouraged or discouraged, respectively. All dietary variables were energy-adjusted to 2000 kcal/d using the residual method prior to analysis. Optimal intake (i.e., at or greater than the recommended level for encouraged foods/nutrients; or at or less than the recommended level for discouraged foods/nutrients) was assigned a score of 10. For encouraged dietary factors, individuals with zero intake received the lowest score (0). For discouraged dietary factors, the lowest score (0) was assigned to a higher consumption level approximately equivalent to the 80-90th percentile of intake among US adults and rounded to a practical value, i.e. 4500 mg/d of sodium, one 50-g serving/d of processed meat, two 8-oz serving/d of SSBs, and 15% energy of saturated fat. Intermediate intake was scored linearly between 0 and 10. For example, an individual consuming 3000 mg/d of sodium would receive 5 sodium points (i.e., their sodium consumption was halfway between 1500 and the maximum value of 4500). A serving of nuts, seeds and legumes is 1-oz equivalent of nuts and seeds or ½ cup of legume.

^b According to the AHA 2020 Goals, up to 3 cups/wk (0.42 cups/d) of starchy vegetables (e.g., potatoes, peas, corn) could be included; this maximum was incorporated into the analysis, with higher intake not contributing toward the score. 100% fruit juice could also be included; while its contribution was not capped in the original AHA 2020 Goals and thus not in our score, some organizations recommend no more than 1 serving/d of 100% fruit juice.

eTable 2. Food groups/nutrients, units and grams per reference unit for example foods

Food Groups	Food Patterns Equivalent Database (FPED) ³ Unit representing 1 serving	Example	Grams per serving
Intact/whole fruit	Cup equivalent	Orange, raw	185
		Apple, raw	110
		Blueberries, raw	145
100% fruit juice ^a	Cup equivalent	Orange juice	250
		Apple juice	250
Dark-green vegetables	Cup equivalent	Romaine lettuce, raw	100
		Kale, cooked	130
		Broccoli, raw	80
Tomatoes	Cup equivalent	Tomato, raw	169
		Tomato, cooked	238
Other red/orange	Cup equivalent	Carrot, raw	125
		Carrot, cooked	145
		Sweet potato, baked	200
		Red pepper (sweet), raw	120
White potatoes	Cup equivalent	White potato, baked	120
		Mashed potato	179
Other starchy vegetables	Cup equivalent	Corn, cooked	164
		Green peas	159
		Plantain, boiled	149
Other vegetables	Cup equivalent	Lettuce, raw	110
		Cauliflower, cooked	125
		String beans, cooked	125
		Mushroom, raw	69
Whole grains ^b	Ounce equivalent	Whole wheat bread	30
		Brown rice, cooked	85
		Cheerios	30
Refined grains	Ounce equivalent	White bread	30
		White rice, cooked	85
		Corn flakes cereal	33
Nuts/seeds ^b	Ounce equivalent	Peanut butter	16
		Almonds, raw	14
Legumes	Cup equivalent	Beans, cooked, from dried	44
		Refried beans	49
		Baked beans	75
Processed meat	3.5 ounce equivalents	Hot dog	126
		Turkey or chicken luncheon meat	98
		Bacon	140

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Food Groups	Food Patterns Equivalent Database (FPED) ³ Unit representing 1 serving	Example	Grams per serving
Unprocessed red meat	3.5 ounce equivalents	Steak, broiled, fat not eaten	102
		Ground beef, 80-85% lean	109
		Pork spareribs, lean and fat eaten	130
Poultry	3.5 ounce equivalents	Chicken breast, roasted, skin not eaten	98
		Chicken breast, fried, coating, skin eaten	144
Fish and shellfish ^c	3.5 ounce equivalents	Salmon, baked	105
		Trout, coated, fried	144
		Catfish, coated, fried	144
Eggs	Ounce equivalent	Fried egg	53
		Scrambled egg, made w/oil	61
Milk	Cup equivalent	Milk, whole	244
Cheese	Cup equivalent	Cheddar cheese	43
		Swiss cheese (fat free)	28
		American cheese	28
Yogurt	Cup equivalent	Yogurt plain	244
		Yogurt, fruit flavored, nonfat	263
Added sugars	Teaspoon equivalent	White sugar	4.2
		Cola	47
		Fruit snacks	6.3
		Brownie with icing	9.0
Sugar-sweetened beverages	8 fluid ounces	Cola	240
		Fruit punch	234
		Sports drink	240
		Tea, presweetened	245
Low-calorie sweetened beverages	8 fluid ounces	Cola, low-calorie	240
		Sports drink, low-calorie	240

^a For the small number of beverages that are mixed sugar-sweetened beverages and fruit juice, only the 100% fruit juice component is attributed to the fruit juice category.

^b Subcategories of whole grains and SSBs used categories from What We Eat in America (WWEIA, 150 unique food categories).¹² For nuts/seeds, we derived subcategories for peanut butter, peanuts, and tree nuts/seeds (e.g., walnuts, almonds, sunflower seeds) as the WWEIA combines peanut butter, peanuts, tree nuts and seeds into a single category, the authors disaggregated this large category into three meaningful categories: peanut butter, peanuts and tree nuts/seeds.

^c Fish and shellfish with <500 or ≥500 mg of omega-3 fatty acids per 3 oz serving were defined as low or high in omega-3 fatty acids, respectively.³

eTable 3. Population mean consumption^a of key food groups and nutrients among US adults ≥20y by NHANES survey cycle, 1999-2012

Foods/nutrients ^b	1999-2000 (n=4,237)	2001-2002 (n=4,744)	2003-2004 (n=4,448)	2005-2006 (n=4,520)	2007-2008 (n=5,420)	2009-2010 (n=5,762)	2011-2012 (n=4,801)	p-trend	Mean change from 1999-2000 to 2011- 2012 (95% CI)	Percent change from 1999-2000 to 2011-2012 (95% CI)
Total fruit, servings/d^c	0.99 (0.06)	1.07 (0.05)	0.99 (0.05)	0.99 (0.03)	1.00 (0.05)	1.08 (0.02)	1.05 (0.04)	0.39	0.06 (-0.09, 0.2)	5.6 (-9.7, 20.9)
Intact/whole fruit	0.59 (0.04)	0.63 (0.03)	0.62 (0.04)	0.64 (0.03)	0.70 (0.03)	0.76 (0.01)	0.74 (0.03)	<0.001	0.15 (0.05, 0.26)	25.7 (5, 46.4)
100% fruit juice	0.43 (0.03)	0.42 (0.02)	0.39 (0.03)	0.38 (0.02)	0.33 (0.02)	0.34 (0.02)	0.32 (0.02)	<0.001	-0.11 (-0.18, -0.04)	-25.9 (-40, -11.9)
Total vegetables, servings/d	1.61 (0.04)	1.59 (0.04)	1.62 (0.02)	1.63 (0.04)	1.61 (0.02)	1.62 (0.02)	1.63 (0.04)	0.53	0.02 (-0.08, 0.13)	1.4 (-5.1, 7.9)
Dark-green vegetables	0.12 (0.02)	0.12 (0.01)	0.11 (0.01)	0.14 (0.01)	0.13 (0.01)	0.14 (0.01)	0.16 (0.01)	0.005	0.04 (0.00, 0.08)	34.9 (-7.6, 77.3)
Tomatoes	0.30 (0.01)	0.34 (0.01)	0.36 (0.02)	0.32 (0.01)	0.31 (0.01)	0.30 (0.01)	0.30 (0.01)	0.10	0.01 (-0.03, 0.04)	2.5 (-9.1, 14.1)
Other red/orange vegetables	0.09 (0.01)	0.08 (0.01)	0.07 (0.01)	0.08 (0.01)	0.09 (0.01)	0.10 (0.01)	0.11 (0.01)	<0.001	0.02 (0, 0.04)	22.8 (-1.3, 46.8)
White potatoes	0.39 (0.02)	0.37 (0.01)	0.39 (0.02)	0.35 (0.02)	0.36 (0.02)	0.35 (0.01)	0.32 (0.01)	0.002	-0.07 (-0.11, -0.02)	-17.2 (-27.7, -6.6)
Other starchy (e.g., peas, corn)	0.10 (0.01)	0.10 (0.01)	0.08 (0.01)	0.09 (0.01)	0.09 (0.01)	0.09 (0.01)	0.09 (0.01)	0.32	-0.01 (-0.03, 0.01)	-12.7 (-31, 5.6)
Other vegetables	0.60 (0.03)	0.58 (0.02)	0.60 (0.01)	0.61 (0.02)	0.58 (0.02)	0.60 (0.02)	0.62 (0.03)	0.44	0.02 (-0.06, 0.1)	3.4 (-9.8, 16.6)
Vegetables, excluding potatoes/starchy	1.12 (0.05)	1.13 (0.03)	1.16 (0.03)	1.18 (0.04)	1.16 (0.03)	1.18 (0.02)	1.22 (0.04)	0.056	0.10 (-0.02, 0.23)	9.1 (-2.4, 20.6)

Foods/nutrients ^b	1999-2000 (n=4,237)	2001-2002 (n=4,744)	2003-2004 (n=4,448)	2005-2006 (n=4,520)	2007-2008 (n=5,420)	2009-2010 (n=5,762)	2011-2012 (n=4,801)	p-trend	Mean change from 1999-2000 to 2011- 2012 (95% CI)	Percent change from 1999-2000 to 2011-2012 (95% CI)
Total grains, servings/d										
Whole-grains	0.56 (0.03)	0.71 (0.03)	0.66 (0.03)	0.76 (0.03)	0.75 (0.04)	0.90 (0.02)	1.00 (0.04)	<0.001	0.43 (0.34, 0.53)	77.0 (55.3, 98.7)
Refined grains	5.49 (0.08)	5.73 (0.08)	5.63 (0.07)	5.44 (0.06)	5.43 (0.05)	5.37 (0.07)	5.32 (0.07)	<0.001	-0.17 (-0.38, 0.05)	-3.1 (-6.9, 0.7)
Nuts and seeds, servings /d	0.43 (0.03)	0.48 (0.03)	0.53 (0.03)	0.58 (0.03)	0.55 (0.03)	0.61 (0.02)	0.69 (0.03)	<0.001	0.25 (0.17, 0.34)	58.8 (33.1, 84.6)
Legumes, servings/d	0.11 (0.01)	0.11 (0.01)	0.09 (0.01)	0.1 (0.01)	0.11 (0.01)	0.11 (0.01)	0.12 (0.01)	0.28	0.01 (-0.02, 0.03)	8.8 (-14.9, 32.5)
Total meat, servings /d	1.30 (0.02)	1.25 (0.02)	1.33 (0.03)	1.38 (0.02)	1.36 (0.02)	1.38 (0.03)	1.35 (0.03)	0.002	0.04 (-0.02, 0.11)	3.4 (-1.9, 8.7)
Processed meat	0.26 (0.02)	0.27 (0.01)	0.28 (0.01)	0.28 (0.01)	0.28 (0.01)	0.28 (0.01)	0.28 (0.01)	0.22	0.02 (-0.02, 0.05)	6.9 (-7.5, 21.4)
Unprocessed red meat	0.49 (0.02)	0.45 (0.02)	0.47 (0.01)	0.48 (0.01)	0.46 (0.01)	0.46 (0.02)	0.45 (0.02)	0.25	-0.04 (-0.09, 0.02)	-7.4 (-17.7, 3.0)
Poultry	0.37 (0.02)	0.36 (0.01)	0.39 (0.02)	0.41 (0.02)	0.44 (0.02)	0.44 (0.02)	0.41 (0.02)	0.001	0.04 (-0.01, 0.08)	9.8 (-2.8, 22.5)
Fish and shellfish	0.16 (0.01)	0.15 (0.01)	0.16 (0.01)	0.18 (0.01)	0.16 (0.01)	0.19 (0.01)	0.19 (0.01)	0.022	0.03 (-0.01, 0.06)	16 (-8.4, 40.4)
High in omega-3 fatty acids ^d	0.04 (0.01)	0.04 (0.01)	0.04 (0.01)	0.05 (0.01)	0.05 (0.01)	0.05 (0.01)	0.05 (0.01)	0.18	0.00 (-0.01, 0.02)	4.5 (-30.5, 39.4)
Low in omega-3 fatty acids ^d	0.12 (0.01)	0.11 (0.01)	0.12 (0.01)	0.14 (0.01)	0.12 (0.01)	0.14 (0.01)	0.14 (0.01)	0.038	0.02 (-0.01, 0.05)	19.2 (-8.9, 47.4)
Eggs, servings/d	0.44 (0.02)	0.43 (0.01)	0.47 (0.02)	0.49 (0.01)	0.51 (0.01)	0.5 (0.02)	0.51 (0.01)	<0.001	0.07 (0.03, 0.11)	16 (6.8, 25.2)

Foods/nutrients ^b	1999-2000 (n=4,237)	2001-2002 (n=4,744)	2003-2004 (n=4,448)	2005-2006 (n=4,520)	2007-2008 (n=5,420)	2009-2010 (n=5,762)	2011-2012 (n=4,801)	p-trend	Mean change from 1999-2000 to 2011- 2012 (95% CI)	Percent change from 1999-2000 to 2011-2012 (95% CI)
Total dairy, servings/d	1.47 (0.04)	1.45 (0.03)	1.44 (0.04)	1.51 (0.03)	1.48 (0.04)	1.59 (0.02)	1.48 (0.03)	0.037	0.01 (-0.08, 0.11)	0.8 (-5.7, 7.3)
Milk	0.89 (0.03)	0.88 (0.02)	0.83 (0.03)	0.87 (0.03)	0.79 (0.03)	0.83 (0.01)	0.70 (0.03)	<0.001	-0.19 (-0.28, -0.11)	-21.6 (-29.7, -13.5)
Cheese	0.53 (0.02)	0.52 (0.02)	0.57 (0.02)	0.58 (0.02)	0.59 (0.02)	0.66 (0.02)	0.68 (0.02)	<0.001	0.15 (0.09, 0.2)	27.5 (16.2, 38.8)
Yogurt	0.04 (0.01)	0.05 (0.01)	0.04 (0.01)	0.05 (0.01)	0.05 (0.01)	0.07 (0.01)	0.07 (0.01)	<0.001	0.03 (0.01, 0.04)	68.3 (5.1, 131.5)
Sugar-sweetened beverages, servings/d	1.73 (0.09)	1.64 (0.07)	1.59 (0.09)	1.40 (0.07)	1.42 (0.09)	1.26 (0.04)	1.24 (0.06)	<0.001	-0.49 (-0.70, -0.28)	-28.3 (-37.9, -18.7)
Low-calorie sweetened beverages, servings/d	0.62 (0.04)	0.60 (0.05)	0.64 (0.06)	0.76 (0.05)	0.75 (0.05)	0.68 (0.04)	0.61 (0.05)	0.38	-0.01 (-0.13, 0.12)	-1.3 (-21.2, 18.6)
Added sugars, tsp equivalents/d	20.5 (0.7)	19.5 (0.5)	17.6 (0.5)	16.6 (0.4)	17.2 (0.5)	16.2 (0.2)	16.1 (0.3)	<0.001	-4.4 (-6.0, -2.9)	-21.6 (-27.7, -15.6)
Macronutrients										
Total fat, %Energy (E)	32.7 (0.4)	33.2 (0.2)	33.9 (0.3)	33.7 (0.2)	33.6 (0.2)	33 (0.2)	33.3 (0.2)	0.57	0.6 (-0.3, 1.5)	1.8 (-0.9, 4.5)
Saturated fat, %E	10.9 (0.14)	10.6 (0.09)	11.2 (0.12)	11.2 (0.07)	11 (0.1)	10.7 (0.09)	10.7 (0.11)	0.39	-0.2 (-0.6, 0.1)	-2.7 (-5.9, 0.6)
Monounsaturated fat, %E	14.6 (0.6)	13.9 (0.3)	13.7 (0.2)	13.7 (0.3)	14.2 (0.2)	13.1 (0.2)	13 (0.2)	0.003	-1.5 (-2.7, -0.4)	-4.6 (-7.7, -1.5)
Polyunsaturated fat, %E	6.9 (0.09)	6.8 (0.07)	7.2 (0.10)	7.2 (0.08)	7.3 (0.05)	7.4 (0.06)	8.0 (0.07)	<0.001	1.1 (0.9, 1.3)	14.9 (11.5, 18.4)
Seafood omega-3 fat, mg/d	125 (7)	126 (7)	132 (8)	150 (8)	144 (6)	128 (7)	111 (6)	0.41	-13.3 (-30.9, 4.2)	-10.7 (-23.8, 2.4)
Plant omega-3 fat, mg/d	134 (2)	136 (1)	143 (2)	141 (2)	142 (2)	149 (1)	166 (2)	<0.001	31.4 (25.6, 37.2)	23.4 (18.4, 28.3)
Polyunsaturated:saturated fat ratio	0.71 (0.01)	0.73 (0.01)	0.7 (0.01)	0.7 (0.01)	0.72 (0.01)	0.76 (0.01)	0.81 (0.01)	<0.001	0.10 (0.07, 0.13)	13.7 (9, 18.4)

Foods/nutrients ^b	1999-2000 (n=4,237)	2001-2002 (n=4,744)	2003-2004 (n=4,448)	2005-2006 (n=4,520)	2007-2008 (n=5,420)	2009-2010 (n=5,762)	2011-2012 (n=4,801)	p-trend	Mean change from 1999-2000 to 2011- 2012 (95% CI)	Percent change from 1999-2000 to 2011-2012 (95% CI)
Protein, %E	15.4 (0.1)	15.2 (0.1)	15.6 (0.1)	16.1 (0.1)	16 (0.1)	16.1 (0.1)	15.8 (0.1)	<0.001	0.5 (0.2, 0.8)	3.1 (1.2, 5.1)
Carbohydrate, %E	50.7 (0.4)	50.8 (0.4)	49 (0.3)	48.7 (0.3)	49.1 (0.3)	49.3 (0.2)	49.1 (0.3)	<0.001	-1.6 (-2.5, -0.7)	-3.1 (-4.8, -1.4)
Other nutrients										
Sodium, mg/d	3424 (33)	3355 (26)	3454 (26)	3557 (34)	3531 (23)	3483 (22)	3445 (15)	0.005	21.2 (-49.9, 92.4)	0.6 (-1.4, 2.7)
Cholesterol, mg/d	272 (5)	260 (4)	277 (5)	279 (4)	283 (4)	269 (4)	274 (3)	0.21	1.6 (-9.6, 12.9)	0.6 (-3.5, 4.7)
Fiber, g/d	15.1 (0.36)	15.4 (0.27)	15 (0.3)	15.8 (0.25)	16.2 (0.34)	17.1 (0.19)	17.6 (0.23)	<0.001	2.5 (1.7, 3.3)	16.6 (10.4, 22.8)
Potassium, mg/d	2666 (33)	2607 (24)	2609 (22)	2686 (27)	2628 (27)	2731 (12)	2702 (27)	0.007	36.7 (-48.5, 122)	1.4 (-1.8, 4.6)
Calcium, mg/d	783 (13)	801 (10)	825 (13)	910 (9)	911 (14)	982 (6)	941 (12)	<0.001	158 (123, 193)	20.1 (15.2, 25.1)
Vitamin D, µg/d	-	-	-	-	4.3 (0.09)	5.0 (0.11)	4.6 (0.11)	0.11	0.2 (-0.1, 0.5)	5.0 (-1.7, 11.7)

^a Data weighted to be nationally-representative. Values are means (survey-weighted standard errors) energy-adjusted to 2000 kcal/d using the residual method except for saturated fatty a, monounsaturated and polyunsaturated fatty acids which are energy-adjusted as percent of total energy.

^b Serving sizes: fruits, vegetables, dairy: 1 cup; grains, nuts/seeds, eggs: 1-oz equivalent; meat: 3.5-oz equivalents; sugar-sweetened beverages, low-calorie beverages: 8 fluid oz. Sugar-sweetened beverages include soft drinks, fruit drinks, sports drinks, presweetened teas and energy drinks with more than 50 kcal per 8 fl oz.

^c Bolded items are part of the AHA diet score.

^d Cooked fish and shellfish containing ≥500 mg of omega-3 fatty acids (EPA and DHA) per 3 ounces are included in the high omega-3 fatty acids category. 95% confidence intervals can be estimated by adding/subtracting the standard error multiplied by 1.96 with the mean estimate.

eTable 4. Impact of adjusting for demographic changes in age and race/ethnicity on observed trends for selected dietary factors among US adults from 1999 to 2012.^a

Dietary factor	14-year change in mean consumption, estimated from linear trend model		% change in trend coefficient ^b after adjusting for age/race (95% CI)
	Unadjusted change (95% CI)	Change adjusted for age group and race/ethnicity (95% CI)	
Potassium, mg/d	83.2 (23.1, 143.3)	55.6 (-4.8, 116)	-33.2 (-62.7, -18.8)
Sodium, mg/d	80.6 (25.4, 135.8)	61 (5.8, 116.3)	-24.3 (-62.6, -12.5)
Total fish and shellfish, 1-oz equivalents/d	0.12 (0.02, 0.22)	0.09 (-0.01, 0.19)	-24.0 (-62.2, -12.6)
Whole fruit, servings/d	0.17 (0.10, 0.25)	0.15 (0.07, 0.22)	-15.3 (-22.5, -10.1)
Sugar-sweetened beverages, servings/d	-0.51 (-0.67, -0.36)	-0.44 (-0.6, -0.27)	-14.6 (-19.6, -9.6)
Eggs, 1-oz equivalents/d	0.08 (0.05, 0.11)	0.07 (0.04, 0.1)	-13.1 (-25.0, -7.3)
Polyunsaturated:saturated fat ratio	0.08 (0.06, 0.1)	0.07 (0.05, 0.09)	-11.3 (-15.8, -7.7)
Fiber, g/d	2.7 (2.0, 3.3)	2.4 (1.7, 3)	-10.5 (-14.0, -7.4)
Dark-green vegetables, servings/d	0.04 (0.01, 0.07)	0.04 (0.01, 0.07)	-8.7 (-15.4, -3.7)
Added sugars, teaspoons/d	-4.3 (-5.4, -3.2)	-3.9 (-5.1, -2.8)	-7.9 (-10.7, -5.4)
Total meat/fish and shellfish, 1-oz equivalents/d	0.32 (0.12, 0.51)	0.29 (0.11, 0.47)	-7.8 (-17.4, -2.4)
Red/orange vegetables, (servings/d	0.02 (0.01, 0.04)	0.02 (0.01, 0.04)	-6.5 (-13.0, -1.7)
Whole grains, 1-oz equivalents/d	0.38 (0.31, 0.45)	0.36 (0.3, 0.43)	-4.2 (-6.6, -2.1)
Plant omega-3s, mg/d	26.1 (21.9, 30.2)	25 (20.7, 29.3)	-4.2 (-6.5, -2.3)
Milk, servings/d	-0.18 (-0.25, -0.11)	-0.18 (-0.24, -0.11)	-3.3 (-7.3, 0.6)
Polyunsaturated fat, % energy	2.1 (1.7, 2.4)	2.0 (1.6, 2.4)	-2.7 (-4.7, -0.9)
Nuts/seeds, 1-oz equivalents/d	0.22 (0.15, 0.3)	0.22 (0.15, 0.29)	-1.7 (-5.5, 1.9)
White potatoes, servings/d	-0.05 (-0.09, -0.02)	-0.05 (-0.09, -0.02)	0.2 (-4.2, 5.3)
Poultry, 1-oz equivalents/d	0.22 (0.08, 0.35)	0.22 (0.11, 0.33)	0.7 (-5.2, 7.8)
Yogurt, servings/d	0.03 (0.02, 0.05)	0.04 (0.02, 0.05)	1.6 (-1.6, 6.6)
Calcium, mg/d	196 (171, 221)	203 (180, 227)	3.4 (1.9, 5.1)
Fruit juice, servings/d	-0.12 (-0.17, -0.07)	-0.13 (-0.17, -0.08)	7.9 (3.3, 15.0)
Refined grains, 1-oz equivalents/d	-0.31 (-0.48, -0.14)	-0.34 (-0.51, -0.18)	10.3 (3.5, 22.9)
Cheese, servings/d	0.19 (0.14, 0.24)	0.22 (0.18, 0.27)	17.5 (12.5, 25.6)
Monounsaturated fat, % energy	-1.21 (-2.01, -0.42)	-1.43 (-2.25, -0.61)	18.1 (9.1, 34.3)
Dairy, servings/d	0.09 (0.01, 0.17)	0.12 (0.05, 0.20)	38.1 (18.6, 147)

^a Data are weighted. We evaluated dietary factors with p-trend <0.05 in unadjusted models (see Table S3).

^b This value represents the percent change in the estimated trend coefficient after adjustment for age group and race/ethnicity. Negative values indicate that the strength of the trend was attenuated/weakened upon adjustment for age and race/ethnicity, suggesting that some of the observed trend is due to demographic changes. Positive values indicate that the trend strengthened upon adjustment for age and race/ethnicity, suggesting that the trend strengthened after accounting for changes in the age and race/ethnicity distribution. The 95% confidence interval of the percent change in trend coefficient was estimated from bias-corrected bootstrap with 2,500 re-samplings. If the 95% CI does not overlap with zero, there is statistically significant attenuation or de-attenuation following adjustment for demographics.

eTable 5. Trends in primary and secondary AHA diet score by age group, sex, race/ethnicity, education and family income, 2003-2012

	Mean ^a (95% CI)					p-trend	p-interaction
	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012		
Primary score [range 0-50]							
Age group							
20-34y	15.8 (14.4, 17.1)	16.9 (15.7, 18.1)	16.7 (16, 17.4)	18.4 (17.3, 19.4)	18.6 (17.4, 19.9)	<0.001	
35-49y	18.6 (17.6, 19.7)	19.4 (18.4, 20.5)	18.2 (17.1, 19.3)	20.2 (19.5, 21)	20.2 (18.9, 21.4)	0.036	0.32
50-64y	20.7 (19.6, 21.8)	21.3 (20.4, 22.2)	21.8 (20.7, 23)	22.6 (21.8, 23.3)	22.6 (21.6, 23.6)	0.003	
≥65y	22.9 (22.2, 23.7)	23.3 (22.6, 24.1)	22.8 (22.1, 23.5)	23.9 (23.1, 24.6)	24.3 (23.3, 25.4)	0.018	
Sex							
Male	18.5 (17.7, 19.4)	19 (18.3, 19.7)	18.6 (17.8, 19.5)	20.3 (19.6, 20.9)	20.3 (19.6, 21.1)	<0.001	0.37
Female	19.5 (18.4, 20.5)	20.7 (19.9, 21.5)	20.2 (19.2, 21.2)	21.6 (21, 22.1)	21.9 (21, 22.9)	<0.001	
Race/ethnicity							
Non-Hispanic white	19.3 (18.1, 20.5)	20.5 (19.8, 21.3)	19.9 (18.7, 21.1)	21.6 (20.9, 22.2)	21.7 (20.8, 22.7)	<0.001	
Non-Hispanic black	17.2 (15.9, 18.4)	17.3 (15.7, 18.9)	17.3 (16.2, 18.4)	18.5 (17.5, 19.6)	18.9 (17.2, 20.6)	0.047	0.42
Mexican-American	17.5 (15.7, 19.4)	18.1 (16.8, 19.4)	17.9 (17.1, 18.8)	19 (18.1, 19.8)	18.3 (17.3, 19.2)	0.30	
Education							
<High school	17.7 (16.9, 18.4)	17.8 (16.7, 18.8)	17 (16.4, 17.6)	18.6 (17.9, 19.3)	18.3 (17.6, 19.1)	0.072	
High school	17 (16.1, 18)	18.3 (17.4, 19.1)	17.8 (17.2, 18.5)	18.4 (17.3, 19.4)	19 (18.1, 20)	0.10	0.032
Some college	19.1 (18.1, 20.1)	19.9 (19, 20.9)	19.8 (19, 20.6)	20.4 (19.7, 21)	20.6 (19.4, 21.9)	0.051	
≥College degree	22 (21.1, 22.9)	22.7 (21.9, 23.6)	22.6 (21.7, 23.5)	25 (24.2, 25.8)	24.4 (23.1, 25.8)	<0.001	

	Mean ^a (95% CI)					p-trend	p-interaction
	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012		
Family income to poverty ratio							
<1.3	16.6 (15.4, 17.7)	17.7 (16.6, 18.8)	16.6 (15.6, 17.7)	18.1 (17.3, 18.9)	18.2 (17.3, 19)	0.022	
1.3-1.849	18.6 (16.7, 20.5)	18.9 (17.8, 20.1)	18.9 (18.1, 19.6)	18.8 (17.5, 20)	20.3 (18.7, 21.9)	0.21	0.032
1.85-2.99	19.2 (18.2, 20.3)	18.9 (18.2, 19.7)	19.1 (18.1, 20.1)	20.4 (19.3, 21.6)	20.4 (19.2, 21.7)	0.032	
≥3.00	20.1 (19.1, 21)	21.1 (20.4, 21.9)	20.7 (19.8, 21.7)	22.7 (22.1, 23.3)	23.3 (22.1, 24.6)	<0.001	
Secondary score [range 0-80]							
Age group							
20-34y	31.8 (29.9, 33.7)	32.6 (30.8, 34.3)	32.3 (31.2, 33.4)	34.5 (33, 35.9)	35.6 (34, 37.1)	0.001	
35-49y	34.7 (33.4, 36.1)	35.1 (33.7, 36.6)	34.9 (33.4, 36.4)	37.1 (35.9, 38.4)	37.3 (35.7, 38.8)	0.002	0.67
50-64y	36.7 (34.9, 38.4)	37.4 (36, 38.8)	38.3 (36.4, 40.1)	39.5 (38, 41)	40.4 (38.6, 42.2)	0.001	
≥65y	39.3 (38.4, 40.2)	39.5 (38.3, 40.7)	39.7 (38.3, 41)	40.5 (39.7, 41.4)	41.8 (40.2, 43.4)	0.003	
Sex							
Male	34.2 (33, 35.4)	34.2 (33.2, 35.3)	34.4 (33, 35.8)	36.1 (35, 37.2)	37.1 (36.2, 38.1)	<0.001	0.31
Female	36 (34.5, 37.5)	37.1 (35.9, 38.4)	37.1 (35.7, 38.4)	39 (38.3, 39.6)	39.7 (38.4, 41.1)	<0.001	
Race/ethnicity							
Non-Hispanic white	35.1 (33.7, 36.6)	36.1 (34.9, 37.2)	35.9 (34.2, 37.6)	37.7 (36.9, 38.6)	38.8 (37.4, 40.1)	<0.001	0.08
Non-Hispanic black	31.8 (29.7, 33.9)	32.1 (29.7, 34.6)	32.5 (31, 34)	34.3 (32.4, 36.2)	34.8 (32.5, 37.1)	0.022	
Mexican-American	36.5 (34.6, 38.5)	37.8 (36, 39.6)	36.3 (34.6, 38)	38.7 (37.6, 39.7)	36.8 (35.2, 38.4)	0.63	
Education							
<High school	34.3 (33, 35.6)	34.2 (32.8, 35.7)	33 (31.8, 34.1)	35.6 (34.2, 37.1)	35.7 (34.6, 36.8)	0.033	0.068
High school	32 (30.6, 33.3)	33.4 (32.1, 34.7)	33.5 (32.4, 34.6)	34 (32.2, 35.8)	35.2 (33.8, 36.7)	0.003	
Some college	35 (33.9, 36.2)	35.5 (33.8, 37.2)	35.6 (34.4, 36.8)	36.3 (35.4, 37.2)	37.4 (36, 38.9)	0.011	
≥College degree	39.2 (37.8, 40.6)	39.3 (37.9, 40.7)	40.6 (38.9, 42.3)	43.1 (42.1, 44.1)	42.9 (40.6, 45.3)	<0.001	

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	Mean ^a (95% CI)					p-trend	p-interaction
	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012		
Family income to poverty ratio							
<1.3	32.9 (31.3, 34.5)	33.4 (32.1, 34.7)	33.2 (31.2, 35.1)	34.5 (33.4, 35.7)	34.8 (33.5, 36)	0.03	
1.3-1.849	34.1 (31.5, 36.7)	34.5 (32.5, 36.5)	35 (33.2, 36.7)	35.5 (34.2, 36.9)	37.4 (35.3, 39.6)	0.033	0.01
1.85-2.99	36.1 (34.3, 37.9)	34.4 (33.1, 35.6)	35.2 (33.3, 37.2)	36.5 (34.7, 38.4)	37.2 (35.4, 39)	0.13	
≥3.00	35.9 (34.7, 37)	37.1 (35.9, 38.3)	37.2 (36, 38.4)	39.6 (38.7, 40.5)	41.2 (39.2, 43.2)	<0.001	

^a Data are weighted. Details on AHA diet score provided in footnote to e**Table 1**.

eTable 6. Trends in percent of population with poor or intermediate diet based on secondary AHA continuous diet score^a by age group, sex, race/ethnicity, education and family income, 2003-2012

	AHA Secondary Score ^b , Percent (95 % CI)					p-trend	p-interaction
	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012		
Poor primary score [<36 or $<40\%$]							
Age group							
20-34y	53.2 (47, 59.3)	50 (44.3, 55.8)	51.8 (46.4, 57.1)	45.2 (40.6, 49.9)	41.5 (37.5, 45.8)	0.001	
35-49y	43.5 (38.7, 48.4)	42.5 (36.5, 48.8)	40.3 (33.6, 47.3)	36.9 (32.5, 41.5)	35.1 (29.8, 40.8)	0.009	0.97
50-64y	35.8 (30.5, 41.5)	36.7 (32.3, 41.4)	32.5 (26.3, 39.3)	30.4 (25.1, 36.3)	26.7 (22.4, 31.4)	0.003	
$\geq 65y$	26.3 (23.6, 29.1)	29.1 (25.4, 33.2)	28.1 (23.1, 33.7)	23.2 (20, 26.7)	20 (16.2, 24.4)	0.001	
Sex							
Male	45.3 (41, 49.6)	46.3 (42.5, 50.2)	43 (38.1, 48.1)	39.4 (35.8, 43.2)	35.5 (33, 38)	<0.001	0.90
Female	38.1 (33.2, 43.3)	35.8 (31.2, 40.6)	36.3 (30.9, 42)	31.3 (28.6, 34.1)	28.5 (25.3, 32)	0.001	
Race/ethnicity							
Non-Hispanic white	41.6 (37.1, 46.3)	40 (36.1, 44)	39.2 (32.6, 46.2)	36 (33.4, 38.8)	30.9 (28.5, 33.5)	<0.001	
Non-Hispanic black	51.4 (41.2, 61.4)	53.7 (46.1, 61.2)	51.5 (45.5, 57.3)	43 (37.9, 48.2)	43.5 (35.2, 52.2)	0.065	0.42
Mexican-American	37.2 (31.3, 43.6)	30.7 (25.4, 36.6)	34.8 (29.6, 40.4)	28.6 (23.3, 34.5)	33.8 (27, 41.3)	0.40	
Education							
$<$ High school	41.4 (36.6, 46.4)	42.3 (37.3, 47.6)	48.2 (43.8, 52.8)	38.5 (33.1, 44.2)	37.1 (32.9, 41.4)	0.095	
High school	51.5 (46.1, 56.9)	48.9 (42.9, 55)	46.5 (40.2, 52.9)	47.2 (41, 53.5)	40.1 (35.1, 45.2)	0.007	0.19
Some college	42.9 (38.6, 47.3)	42.2 (35.8, 48.9)	39.7 (35.8, 43.8)	37.7 (34.3, 41.3)	34.3 (29.3, 39.8)	0.008	
\geq College degree	29 (25.1, 33.3)	30.2 (25.4, 35.4)	25.4 (19.5, 32.4)	21.2 (17.6, 25.4)	21.6 (16.4, 27.9)	0.006	
Family income to poverty ratio							
<1.3	48.6 (42.9, 54.4)	45.1 (39.5, 50.9)	49.4 (42.3, 56.6)	43 (39.3, 46.7)	43 (37.9, 48.3)	0.11	
1.3-1.849	45.7 (36.7, 54.9)	42.6 (35.9, 49.7)	40.5 (34.7, 46.4)	38.7 (33.2, 44.5)	31.5 (23.6, 40.7)	0.02	0.017
1.85-2.99	36.1 (30.5, 42.1)	43.3 (37.3, 49.5)	42.2 (33.6, 51.4)	38.4 (31.6, 45.6)	33.6 (26.5, 41.5)	0.36	

	AHA Secondary Score ^b , Percent (95 % CI)					p-trend	p-interaction
	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012		
≥3.00	39.4 (35.7, 43.3)	38.7 (34.8, 42.8)	35 (30.6, 39.7)	30.5 (27.4, 33.7)	25 (20.9, 29.6)	<0.001	
Intermediate score [36-63.9 or 40-79.9%]							
Age group							
20-34y	46.3 (40.2, 52.4)	49.4 (43.9, 55)	47.6 (42.2, 53)	53.4 (48.8, 57.9)	57.6 (53.5, 61.6)	0.002	
35-49y	55.8 (50.7, 60.8)	55.7 (49.6, 61.6)	58.7 (51.7, 65.4)	61.5 (56.5, 66.4)	63.5 (58.1, 68.6)	0.012	0.88
50-64y	62 (56.3, 67.3)	61.4 (56.5, 66.1)	66.5 (59.8, 72.5)	65.8 (59.9, 71.2)	70.8 (66.1, 75.2)	0.007	
≥65y	72 (68.9, 74.9)	69.2 (65.2, 72.8)	68.5 (62.8, 73.7)	75.3 (71.3, 78.8)	76 (71.4, 80)	0.02	
Sex							
Male	53.9 (49.6, 58.1)	52.8 (49, 56.6)	56.2 (51.1, 61.2)	58.9 (55.5, 62.2)	62.1 (59.3, 64.8)	<0.001	0.78
Female	60.4 (55.3, 65.2)	62.3 (57.5, 66.8)	61.9 (56.4, 67.1)	66.2 (63.1, 69.3)	69.9 (66.5, 73.1)	0.001	
Race/ethnicity							
Non-Hispanic white	57 (52.4, 61.5)	58.4 (54.5, 62.3)	59.4 (52.6, 65.9)	61.4 (58.7, 64.1)	67 (64.6, 69.3)	<0.001	
Non-Hispanic black	47.9 (37.8, 58.2)	45.2 (37.9, 52.6)	47.5 (41.7, 53.3)	55.3 (50.6, 59.9)	55.3 (47.1, 63.2)	0.076	0.51
Mexican-American	61.9 (56, 67.5)	68.5 (63.2, 73.4)	64.7 (59, 70.1)	70.7 (65.1, 75.8)	65.3 (57.5, 72.3)	0.40	
Education							
<High school	58.1 (53.4, 62.6)	57.5 (52.2, 62.6)	51 (46.7, 55.3)	61.2 (55.5, 66.6)	62 (57.8, 66.1)	0.11	
High school	47.9 (42.6, 53.3)	50.3 (44.3, 56.2)	52.8 (46.4, 59.1)	50.4 (44.7, 56.1)	59.2 (53.7, 64.4)	0.014	0.24
Some college	56.6 (52.2, 60.8)	56.1 (49.6, 62.5)	58.6 (54.6, 62.5)	61.4 (57.7, 64.9)	63.7 (58.5, 68.6)	0.013	
≥College degree	67.6 (63, 71.9)	67.2 (62.4, 71.7)	72.6 (65.5, 78.7)	74.5 (69.3, 79.1)	75 (70.2, 79.3)	0.004	

	AHA Secondary Score ^b , Percent (95 % CI)					p-trend	p-interaction
	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012		
Family income to poverty ratio							
<1.3	50.9 (45.2, 56.5)	54.7 (48.9, 60.3)	49.2 (42.5, 56)	56.2 (52.7, 59.7)	56.3 (51.2, 61.2)	0.12	
1.3-1.849	53.8 (44.6, 62.8)	56.9 (49.8, 63.7)	59.2 (53.2, 64.9)	60.7 (55.1, 66.2)	67.7 (58.5, 75.7)	0.023	0.037
1.85-2.99	62.6 (57, 67.9)	56.4 (50.2, 62.4)	56 (47, 64.6)	60.7 (53.5, 67.4)	64.5 (56.1, 72.1)	0.47	
≥3.00	59.1 (55, 63.1)	58.8 (54.9, 62.5)	63.9 (59.1, 68.4)	66.3 (63.3, 69.1)	71.9 (67.7, 75.8)	<0.001	

^a Data are weighted. Data on percent meeting an ideal diet are not presented due to small numbers and large statistical uncertainty in these subgroup analyses.

^b Details on AHA diet score provided in footnote to **eTable 1**.

eTable 7. Population mean^a consumption of food groups and nutrients of interest by age group among US adults ≥20y by NHANES survey cycle, 1999-2000 and 2011-2012

	Age 20-34		Age 35-49		Age 50-64		Age ≥65		P-interaction
	1999-2000 (n=1,136)	2011-2012 (n=1,317)	1999-2000 (n=1,035)	2011-2012 (n=1,178)	1999-2000 (n=929)	2011-2012 (n=1,274)	1999-2000 (n=1,137)	2011-2012 (n=1,032)	
Total fruit, servings/d	0.75 (0.08)	0.95 (0.04)*	0.9 (0.07)	1.02 (0.08)	1.17 (0.11)	1.07 (0.05)	1.4 (0.06)	1.21 (0.06)*	0.007
Intact/whole fruit	0.36 (0.04)	0.60 (0.03)***	0.55 (0.06)	0.73 (0.09)*	0.73 (0.07)	0.81 (0.04)*	0.95 (0.06)	0.89 (0.05)	0.009
100% fruit juice	0.37 (0.04)	0.36 (0.03)	0.38 (0.04)	0.28 (0.03)**	0.47 (0.06)	0.28 (0.04)***	0.58 (0.04)	0.36 (0.04)***	0.006
Total vegetables, servings/day (d)	1.44 (0.05)	1.37 (0.03)	1.6 (0.1)	1.58 (0.05)	1.74 (0.04)	1.86 (0.07)	1.77 (0.06)	1.75 (0.06)	0.16
Dark-green vegetables	0.08 (0.01)	0.13 (0.01)**	0.15 (0.02)	0.15 (0.01)	0.14 (0.03)	0.22 (0.03)**	0.11 (0.01)	0.12 (0.02)	0.018
Tomatoes	0.3 (0.03)	0.29 (0.01)*	0.32 (0.02)	0.3 (0.01)	0.26 (0.02)	0.33 (0.02)	0.29 (0.03)	0.29 (0.02)	0.24
Other red/orange vegetables	0.09 (0.02)	0.08 (0.01)	0.08 (0.01)	0.11 (0.01)	0.09 (0.01)	0.13 (0.02)**	0.09 (0.01)	0.11 (0.01)*	0.18
White potatoes	0.42 (0.03)	0.29 (0.02)***	0.36 (0.02)	0.34 (0.02)	0.37 (0.04)	0.32 (0.02)	0.39 (0.03)	0.35 (0.02)	0.12
Other starchy	0.09 (0.01)	0.07 (0.01)	0.09 (0.02)	0.08 (0.01)	0.11 (0.02)	0.1 (0.01)	0.11 (0.02)	0.10 (0.01)	0.79
Other vegetables	0.49 (0.03)	0.5 (0.02)	0.59 (0.05)	0.59 (0.03)	0.74 (0.04)	0.72 (0.06)	0.68 (0.03)	0.70 (0.04)	0.99
Total grains, servings/d									
Whole grains	0.35 (0.03)	0.84 (0.05)***	0.56 (0.07)	0.91 (0.05)***	0.69 (0.07)	1.05 (0.06)***	0.84 (0.04)	1.3 (0.06)***	0.75
Refined grains	5.65 (0.11)	5.77 (0.11)	5.27 (0.08)	5.29 (0.08)	5.36 (0.16)	5.11 (0.13)**	5.74 (0.14)	4.99 (0.1)***	<0.001
Nuts and seeds, servings /d	0.30 (0.04)	0.56 (0.06)***	0.52 (0.06)	0.65 (0.07)*	0.46 (0.04)	0.81 (0.06)***	0.47 (0.05)	0.74 (0.05)**	0.110
Legumes, servings/d	0.10 (0.01)	0.12 (0.01)	0.12 (0.02)	0.13 (0.02)	0.11 (0.02)	0.12 (0.01)	0.11 (0.01)	0.11 (0.01)	0.89
Total meat, servings /d	1.26 (0.05)	1.35 (0.02)**	1.35 (0.05)	1.39 (0.04)*	1.34 (0.05)	1.3 (0.05)	1.24 (0.02)	1.34 (0.03)**	0.39
Processed meat	0.26 (0.02)	0.28 (0.01)	0.28 (0.02)	0.29 (0.01)	0.23 (0.02)	0.27 (0.02)	0.25 (0.02)	0.25 (0.01)	0.86
Unprocessed red meat	0.48 (0.02)	0.46 (0.03)	0.52 (0.03)	0.45 (0.03)	0.5 (0.05)	0.45 (0.03)	0.43 (0.02)	0.44 (0.03)	0.32
Poultry	0.39 (0.03)	0.45 (0.02)**	0.38 (0.02)	0.44 (0.02)**	0.38 (0.03)	0.37 (0.03)	0.32 (0.03)	0.36 (0.03)	0.55
Fish and shellfish	0.15 (0.02)	0.16 (0.02)	0.16 (0.03)	0.19 (0.02)	0.19 (0.03)	0.19 (0.02)	0.15 (0.01)	0.22 (0.02)**	0.61
High in omega-3 fatty acids ^c	0.04 (0.01)	0.04 (0.01)	0.04 (0.01)	0.05 (0.01)	0.05 (0.01)	0.04 (0.01)	0.04 (0.01)	0.05 (0.01)	0.27
Low in omega-3 fatty acids ^c	0.11 (0.01)	0.12 (0.01)	0.12 (0.02)	0.14 (0.02)	0.14 (0.02)	0.14 (0.02)	0.11 (0.01)	0.17 (0.01)*	0.77
Eggs, servings /d	0.35 (0.02)	0.44 (0.02)***	0.41 (0.03)	0.51 (0.02)***	0.55 (0.05)	0.52 (0.02)	0.51 (0.04)	0.58 (0.02)*	0.049
Total dairy, servings /d	1.44 (0.06)	1.54 (0.05)	1.47 (0.06)	1.49 (0.04)*	1.40 (0.06)	1.40 (0.07)	1.62 (0.07)	1.52 (0.05)	0.76
Milk	0.82 (0.05)	0.63 (0.04)***	0.85 (0.03)	0.67 (0.03)***	0.90 (0.05)	0.68 (0.05)**	1.11 (0.05)	0.89 (0.04)**	0.77
Cheese	0.64 (0.03)	0.83 (0.03)***	0.57 (0.04)	0.72 (0.03)***	0.42 (0.03)	0.63 (0.03)***	0.39 (0.03)	0.48 (0.03)***	0.35
Yogurt	0.03 (0.01)	0.05 (0.01)***	0.06 (0.02)	0.08 (0.01)	0.03 (0.01)	0.07 (0.01)***	0.02 (0.01)	0.07 (0.01)***	0.30

	Age 20-34		Age 35-49		Age 50-64		Age ≥65		P-interaction
	1999-2000 (n=1,136)	2011-2012 (n=1,317)	1999-2000 (n=1,035)	2011-2012 (n=1,178)	1999-2000 (n=929)	2011-2012 (n=1,274)	1999-2000 (n=1,137)	2011-2012 (n=1,032)	
Sugar-sweetened beverages, servings/d ^b	2.68 (0.19)	1.71 (0.08)***	1.65 (0.13)	1.48 (0.14)	1.15 (0.09)	0.97 (0.08)**	0.74 (0.05)	0.56 (0.04)**	<0.001
Low-calorie sweetened beverages, servings/d ^b	0.47 (0.07)	0.41 (0.05)	0.8 (0.08)	0.69 (0.12)	0.77 (0.09)	0.77 (0.09)	0.37 (0.06)	0.56 (0.05)*	0.35
Added sugars, teaspoon equivalents/d	24.6 (1.2)	17.3 (0.4)***	20.5 (1.1)	17.1 (0.8)***	17.6 (0.6)	14.9 (0.5)***	16.1 (0.6)	14.5 (0.5)**	<0.001
Macronutrients									
Total fat, %Energy (E)/d	31.8 (0.4)	32.9 (0.3)	33.5 (0.5)	33.4 (0.3)	33.3 (0.7)	33.6 (0.4)	32.4 (0.5)	33.4 (0.3)	0.20
Saturated fatty acids, %E/d	10.8 (0.2)	10.7 (0.2)	11.2 (0.2)	10.7 (0.1)	11 (0.2)	10.7 (0.1)	10.6 (0.1)	10.6 (0.2)	0.04
Monounsaturated fatty acids, %E/d	11.9 (0.4)	12.2 (0.2)	15.2 (1.3)	12.1 (0.3)*	15.5 (0.6)	13.3 (0.3)***	17.2 (0.6)	15.4 (0.3)***	<0.001
Polyunsaturated fatty acids, %E/d	6.6 (0.1)	7.8 (0.1)***	7 (0.1)	8 (0.2)***	7.2 (0.2)	8.1 (0.1)***	7 (0.2)	8.1 (0.1)***	0.12
Seafood omega-3 fatty acids, mg/d	99 (8)	97 (7)	130 (13)	114 (9)	153 (18)	111 (8)*	129 (9)	130 (11)	0.034
Plant omega-3 fatty acids, mg/d	124 (4)	157 (2)***	134 (4)	162 (5)***	146 (7)	171 (3)***	141 (3)	176 (3)***	0.25
PUFA:SFA ratio	0.68 (0.02)	0.8 (0.02)***	0.71 (0.02)	0.8 (0.02)**	0.74 (0.02)	0.82 (0.01)**	0.75 (0.02)	0.83 (0.02)	0.001
Protein, %E	14.5 (0.4)	15.6 (0.1)***	15.5 (0.3)	15.9 (0.2)***	15.9 (0.2)	15.7 (0.2)	16.1 (0.2)	16.4 (0.1)**	0.008
Carbohydrate, %E	52.3 (0.6)	49.6 (0.3)***	49.4 (0.8)	49.1 (0.6)	49.4 (0.7)	48.2 (0.5)	51.6 (0.6)	49.7 (0.4)**	0.21
Other nutrients									
Sodium, mg/d	237 (6)	254 (4)**	273 (8)	273 (9)	307 (14)	275 (7)*	297 (11)	305 (7)	0.01
Cholesterol, mg/d	13 (0.4)	16.2 (0.3)***	14.9 (0.5)	17.1 (0.4)***	16.1 (0.6)	18.4 (0.4)***	18.5 (0.5)	19.4 (0.4)*	0.013
Fiber, g/d	2317 (48)	2429 (26)**	2658 (58)	2660 (42)	2898 (48)	2869 (54)	3072 (46)	2928 (32)	0.008
Potassium, mg/d	757 (19)	951 (21)	787 (18)	945 (15)	775 (20)	919 (27)	839 (17)	954 (21)	0.17
Calcium, mg/d	4.0 (0.2)	4.3 (0.2)	4.1 (0.1)	4.5 (0.2)	4.6 (0.2)	4.5 (0.1)	4.9 (0.1)	5.3 (0.2)	0.42

^a Data are weighted. Values in parentheses are survey-weighted standard errors. All analyses (except for macronutrients) are energy-adjusted to 2000 kcal/d using the residual method. Macronutrients are reported as % of total energy.

^b serving of sugar-sweetened beverage defined as 8 fl oz or 237 grams. Sugar-sweetened beverages include soft drinks, fruit drinks, sports drinks, presweetened teas and energy drinks with more than 50 kcal per 8 fl oz.

^c Cooked fish and shellfish containing 500 mg or more of omega-3 fatty acids (EPA and DHA) per 3 ounces are included in the high omega-3 fatty acids category.

^d Vitamin D data was first available in 2007-2008; the value in the 1999-2000 column is the population mean from 2007-2008 and the p-trend is evaluating the change in vitamin D consumption from 2007-2008 to 2011-2012.

Asterisks indicate statistical significance of p-value for linear trend, which was estimated by treating survey-cycle as a continuous variable in a survey-weighted linear regression model (*** p-trend < 0.001; ** 0.001 < p-trend < 0.01; * 0.01 < p-trend < 0.05). 95% confidence intervals can be estimated by adding/subtracting the standard error multiplied by 1.96 with the mean estimate.

eTable 8. Population mean^a consumption of food groups and nutrients of interest by sex among US adults ≥20y by NHANES survey cycle, 1999-2000 and 2011-2012.

	Female		Male		P-interaction
	1999-2000 (n=2,259)	2011-2012 (n=2,407)	1999-2000 (n=1,978)	2011-2012 (n=2,394)	
Total fruit, servings/d	1.02 (0.07)	1.09 (0.05)	0.96 (0.07)	1.00 (0.04)	0.23
Intact/whole fruit	0.61 (0.04)	0.79 (0.05)***	0.57 (0.05)	0.69 (0.03)**	0.094
100% fruit juice	0.50 (0.04)	0.35 (0.03)***	0.35 (0.03)	0.29 (0.03)**	0.059
Total vegetables, servings/d	1.71 (0.05)	1.74 (0.05)	1.50 (0.04)	1.51 (0.03)	0.26
Dark-green vegetables	0.12 (0.02)	0.18 (0.02)**	0.11 (0.02)	0.13 (0.01)*	0.17
Tomatoes	0.30 (0.02)	0.30 (0.01)	0.29 (0.01)	0.30 (0.01)	0.36
Other red/orange vegetables	0.10 (0.01)	0.12 (0.01)*	0.08 (0.01)	0.10 (0.01)***	0.65
White potatoes	0.36 (0.02)	0.30 (0.01)*	0.42 (0.03)	0.35 (0.02)***	0.23
Other starchy	0.09 (0.01)	0.09 (0.01)	0.11 (0.01)	0.08 (0.01)	0.21
Other vegetables	0.66 (0.03)	0.67 (0.03)	0.54 (0.03)	0.58 (0.03)	0.50
Total grains, servings/d					
Whole grains	0.60 (0.03)	0.99 (0.04)***	0.52 (0.05)	1.01 (0.05)***	0.22
Refined grains	5.56 (0.1)	5.36 (0.1)***	5.40 (0.1)	5.28 (0.08)	0.018
Nuts and seeds, servings/d	0.37 (0.03)	0.68 (0.04)***	0.50 (0.05)	0.7 (0.05)***	0.36
Legumes, servings/d	0.1 (0.01)	0.11 (0.01)	0.12 (0.01)	0.13 (0.01)	0.74
Total meat, servings/d	1.2 (0.03)	1.25 (0.03)*	1.41 (0.03)	1.45 (0.02)**	0.68
Processed meat	0.21 (0.02)	0.23 (0.01)	0.31 (0.02)	0.33 (0.02)	0.84
Unprocessed red meat	0.42 (0.02)	0.38 (0.02)	0.56 (0.02)	0.53 (0.02)	0.76
Poultry	0.36 (0.02)	0.4 (0.01)**	0.39 (0.02)	0.42 (0.03)*	0.51
Fish and shellfish	0.14 (0.02)	0.18 (0.02)*	0.18 (0.01)	0.2 (0.02)	0.71
High in omega-3 fatty acids ^c	0.03 (0.01)	0.04 (0.01)	0.05 (0.01)	0.05 (0.01)	0.64
Low in omega-3 fatty acids ^c	0.11 (0.01)	0.14 (0.01)	0.13 (0.01)	0.15 (0.01)	0.84
Eggs, servings/d	0.43 (0.02)	0.47 (0.02)*	0.44 (0.02)	0.54 (0.02)***	0.12
Total dairy, servings/d	1.51 (0.05)	1.49 (0.04)	1.43 (0.04)	1.47 (0.04)*	0.82
Milk	0.88 (0.05)	0.70 (0.03)**	0.91 (0.02)	0.70 (0.04)***	0.32
Cheese	0.54 (0.02)	0.64 (0.02)***	0.53 (0.02)	0.73 (0.03)***	0.027
Yogurt	0.04 (0.01)	0.08 (0.01)***	0.04 (0.01)	0.05 (0.01)**	<0.001
Sugar-sweetened beverages, servings/d ^b	1.61 (0.11)	1.06 (0.07)***	1.86 (0.1)	1.42 (0.06)***	0.79
Low-calorie sweetened beverages, servings/d ^b	0.68 (0.04)	0.70 (0.07)	0.55 (0.06)	0.52 (0.04)	0.93
Added sugars, teaspoon equiv/d	21.6 (1)	16.9 (0.4)***	19.3 (0.5)	15.2 (0.3)***	0.89
Macronutrients					
Total fat, %E/d	32.8 (0.4)	33.2 (0.3)	32.7 (0.4)	33.5 (0.3)	0.26
Saturated fatty acids, %E/d	10.9 (0.2)	10.6 (0.1)	10.9 (0.1)	10.8 (0.1)	0.65
Monounsaturated fatty acids, %E/d	17 (0.8)	15 (0.2)**	11.9 (0.5)	10.9 (0.2)	0.09
Polyunsaturated fatty acids, %E/d	7.1 (0.1)	8.1 (0.1)***	6.7 (0.1)	7.9 (0.1)***	0.23
Seafood omega-3 fatty acids, mg/d	113 (8)	105 (7)	138 (9)	118 (6)	0.87

	Female		Male		P-interaction
	1999-2000 (n=2,259)	2011-2012 (n=2,407)	1999-2000 (n=1,978)	2011-2012 (n=2,394)	
Plant omega-3 fatty acids, mg/d	141 (3)	173 (3)***	127 (3)	157 (1)***	0.41
PUFA:SFA ratio	0.73 (0.02)	0.83 (0.01)***	0.69 (0.01)	0.79 (0.01)***	0.58
Protein, %E	15.2 (0.2)	15.7 (0.1)***	15.5 (0.1)	16 (0.1)***	0.51
Carbohydrate, %E	51.9 (0.5)	50.1 (0.4)***	49.4 (0.4)	48.1 (0.3)***	0.86
Other nutrients					
Sodium, mg/d	3469 (39)	3465 (31)	3375 (50)	3425 (19)**	0.10
Cholesterol, mg/d	275 (6)	273 (5)	269 (6)	275 (5)	0.21
Fiber, g/d	15.7 (0.5)	18.3 (0.3)***	14.5 (0.3)	16.8 (0.2)***	0.15
Potassium, mg/d	2685 (53)	2725 (33)*	2644 (21)	2679 (29)*	0.42
Calcium, mg/d	792 (18)	946 (15)***	773 (13)	936 (13)***	0.54
Vitamin D, µg/d ^d	4.2 (0.1)	4.3 (0.1)	4.5 (0.1)	4.9 (0.1)	0.29

^a Data are weighted. Values in parentheses are survey-weighted standard errors. All analyses (except for macronutrients) are energy-adjusted to 2000 kcal/d using the residual method. Macronutrients are reported as % of total energy.

^b serving of sugar-sweetened beverage defined as 8 fl oz or 237 grams. Sugar-sweetened beverages include soft drinks, fruit drinks, sports drinks, presweetened teas and energy drinks with more than 50 kcal per 8 fl oz.

^c Cooked fish and shellfish containing 500 mg or more of omega-3 fatty acids (EPA and DHA) per 3 ounces are included in the high omega-3 fatty acids category.

^d Vitamin D data was first available in 2007-2008; the value in the 1999-2000 column is the population mean from 2007-2008 and the p-trend is evaluating the change in vitamin D consumption from 2007-2008 to 2011-2012.

Asterisks indicate statistical significance of p-value for linear trend, which was estimated by treating survey-cycle as a continuous variable in a survey-weighted linear regression model (*** p-trend < 0.001; ** 0.001 < p-trend < 0.01; * 0.01 < p-trend < 0.05). 95% confidence intervals can be estimated by adding/subtracting the standard error multiplied by 1.96 with the mean estimate.

eTable 9. Population mean^a consumption of food groups and nutrients of interest by race/ethnicity among US adults ≥20y by NHANES survey cycle, 1999-2000 and 2011-2012.

	Non-Hispanic White		Non-Hispanic Black		Mexican-American		P-interaction
	1999-2000 (n=1,891)	2011-2012 (n=1,842)	1999-2000 (n=792)	2011-2012 (n=1,274)	1999-2000 (n=1,146)	2011-2012 (n=467)	
Total fruit, servings/d	0.95 (0.08)	1.03 (0.05)	1.15 (0.07)	0.98 (0.05)	1.13 (0.08)	1.04 (0.07)	0.22
Intact/whole fruit	0.60 (0.05)	0.77 (0.04)***	0.51 (0.04)	0.55 (0.04)*	0.65 (0.06)	0.73 (0.07)	0.42
100% fruit juice	0.38 (0.04)	0.28 (0.03)***	0.67 (0.04)	0.45 (0.02)***	0.48 (0.05)	0.29 (0.02)***	0.16
Total vegetables, servings/d	1.70 (0.06)	1.69 (0.05)	1.28 (0.04)	1.38 (0.04)	1.44 (0.03)	1.49 (0.07)	0.52
Dark-green vegetables	0.13 (0.02)	0.17 (0.02)*	0.12 (0.02)	0.15 (0.02)	0.05 (0.01)	0.11 (0.02)*	0.38
Tomatoes	0.31 (0.02)	0.32 (0.01)	0.21 (0.01)	0.24 (0.01)	0.35 (0.02)	0.32 (0.01)**	0.004
Other red/orange vegetables	0.09 (0.01)	0.12 (0.01)***	0.09 (0.02)	0.07 (0.01)	0.07 (0.01)	0.07 (0.01)	0.002
White potatoes	0.41 (0.03)	0.33 (0.01)*	0.29 (0.02)	0.35 (0.02)	0.31 (0.02)	0.26 (0.02)**	0.002
Other starchy	0.09 (0.01)	0.08 (0.01)	0.09 (0.01)	0.1 (0.01)	0.09 (0.01)	0.08 (0.01)	0.12
Other vegetables	0.65 (0.04)	0.65 (0.04)	0.44 (0.03)	0.44 (0.01)	0.56 (0.02)	0.63 (0.04)	0.26
Total grains, servings/d							
Whole grains	0.63 (0.04)	1.06 (0.04)***	0.40 (0.05)	0.82 (0.08)***	0.37 (0.04)	0.67 (0.05)***	0.13
Refined grains	5.40 (0.11)	5.07 (0.09)***	5.39 (0.1)	5.11 (0.12)	5.98 (0.17)	6.74 (0.13)**	<0.001
Nuts and seeds, servings/d	0.50 (0.03)	0.76 (0.05)***	0.28 (0.06)	0.55 (0.05)*	0.30 (0.03)	0.49 (0.09)	0.13
Legumes, servings/d	0.08 (0.01)	0.10 (0.01)	0.08 (0.01)	0.08 (0.01)	0.3 (0.03)	0.24 (0.02)	0.30
Total meat, servings/d	1.24 (0.03)	1.27 (0.03)*	1.63 (0.07)	1.60 (0.02)	1.32 (0.05)	1.36 (0.04)	0.60
Processed meat	0.28 (0.02)	0.29 (0.02)	0.24 (0.02)	0.31 (0.01)**	0.17 (0.02)	0.19 (0.02)	0.19
Unprocessed red meat	0.47 (0.02)	0.44 (0.02)	0.51 (0.04)	0.41 (0.02)*	0.58 (0.05)	0.58 (0.06)*	0.35
Poultry	0.33 (0.02)	0.36 (0.01)**	0.56 (0.05)	0.59 (0.02)	0.40 (0.03)	0.40 (0.04)	0.82
Fish and shellfish	0.15 (0.01)	0.16 (0.02)	0.26 (0.04)	0.25 (0.04)	0.11 (0.01)	0.20 (0.03)**	0.032
High in omega-3 fatty acids ^c	0.05 (0.01)	0.04 (0.01)	0.03 (0.01)	0.04 (0.01)	0.02 (0.01)	0.05 (0.01)**	0.045
Low in omega-3 fatty acids ^c	0.10 (0.01)	0.11 (0.01)	0.24 (0.04)	0.20 (0.03)	0.09 (0.01)	0.15 (0.02)*	0.14
Eggs, servings/d	0.42 (0.02)	0.48 (0.02)	0.48 (0.04)	0.54 (0.03)**	0.58 (0.04)	0.65 (0.04)	0.83
Total dairy, servings/d	1.61 (0.05)	1.59 (0.03)	0.93 (0.05)	1.08 (0.03)***	1.26 (0.06)	1.48 (0.05)*	0.07
Milk	0.98 (0.04)	0.76 (0.03)***	0.56 (0.04)	0.44 (0.03)*	0.87 (0.05)	0.70 (0.04)*	0.21
Cheese	0.60 (0.03)	0.73 (0.02)*	0.35 (0.03)	0.57 (0.03)***	0.36 (0.03)	0.72 (0.03)**	0.094

	Non-Hispanic White		Non-Hispanic Black		Mexican-American		P-interaction
	1999-2000 (n=1,891)	2011-2012 (n=1,842)	1999-2000 (n=792)	2011-2012 (n=1,274)	1999-2000 (n=1,146)	2011-2012 (n=467)	
Yogurt	0.04 (0.01)	0.07 (0.01)***	0.02 (0.01)	0.03 (0.01)***	0.01 (0.01)	0.04 (0.01)***	0.35
Sugar-sweetened beverages, servings/d ^b	1.64 (0.12)	1.19 (0.07)***	2.27 (0.1)	1.61 (0.09)***	2.01 (0.06)	1.48 (0.11)***	0.24
Low-calorie sweetened beverages, servings/d ^b	0.78 (0.05)	0.77 (0.05)	0.17 (0.02)	0.32 (0.04)***	0.36 (0.06)	0.28 (0.07)	0.15
Added sugars, teaspoon equiv/d	20.1 (0.9)	16.1 (0.5)***	24.4 (0.8)	18.6 (0.5)***	21.2 (0.7)	15.7 (0.7)***	0.18
Macronutrients							
Total fat, %E/d	33.5 (0.4)	33.7 (0.3)	31.4 (0.6)	33.9 (0.2)***	31.5 (0.7)	33.6 (0.3)	0.002
Saturated fatty acids, %E/d	11.3 (0.1)	11 (0.1)	10.1 (0.2)	10.4 (0.1)*	10.3 (0.3)	10.8 (0.1)	0.017
Monounsaturated fatty acids, %E/d	14.5 (0.7)	12.9 (0.2)*	15 (0.4)	14.1 (0.3)	15.5 (0.8)	12.6 (0.4)*	0.30
Polyunsaturated fatty acids, %E/d	7 (0.1)	8 (0.1)***	6.8 (0.2)	8.5 (0.1)***	6.7 (0.2)	7.9 (0.1)***	0.18
Seafood omega-3 fatty acids, mg/d	116 (9)	99 (7)	192 (21)	131 (11)***	95 (6)	111 (11)	<0.001
Plant omega-3 fatty acids, mg/d	138 (3)	167 (2)***	127 (5)	162 (2)***	125 (4)	163 (3)***	0.57
PUFA:SFA ratio	0.69 (0.01)	0.79 (0.01)***	0.78 (0.02)	0.88 (0.02)*	0.73 (0.02)	0.81 (0.02)***	0.69
Protein, %E	15.3 (0.2)	15.6 (0.1)***	15.6 (0.4)	15.8 (0.1)	15.7 (0.3)	16.4 (0.2)**	0.86
Carbohydrate, %E	50 (0.4)	48.6 (0.4)***	51.7 (0.5)	48.9 (0.3)***	51.8 (0.9)	49.7 (0.4)	0.17
Other nutrients							
Sodium, mg/d	3428 (38)	3407 (21)	3358 (61)	3402 (31)*	3166 (55)	3399 (63)***	0.01
Dietary cholesterol, mg/d	263 (6)	263 (4)	313 (9)	302 (6)	314 (12)	302 (12)	0.90
Fiber, g/d	15.3 (0.4)	17.7 (0.3)***	12.2 (0.3)	14.8 (0.4)***	17.6 (0.7)	18.9 (0.6)**	0.71
Potassium, mg/d	2737 (46)	2766 (36)	2324 (57)	2376 (36)*	2656 (45)	2572 (46)	0.19
Calcium, mg/d	828 (20)	971 (13)***	609 (17)	823 (17)***	752 (20)	967 (15)***	0.019
Vitamin D, µg/d ^d	4.4 (0.1)	4.6 (0.2)	3.3 (0.1)	4 (0.1)**	4.6 (0.2)	4.7 (0.2)	0.21

^a Data are weighted. Values in parentheses are survey-weighted standard errors. All analyses (except for macronutrients) are energy-adjusted to 2000 kcal/d using the residual method. Macronutrients are reported as % of total energy.

^b serving of sugar-sweetened beverage defined as 8 fl oz or 237 grams. Sugar-sweetened beverages include soft drinks, fruit drinks, sports drinks, presweetened teas and energy drinks with more than 50 kcal per 8 fl oz.

^c Cooked fish and shellfish containing 500 mg or more of omega-3 fatty acids (EPA and DHA) per 3 ounces are included in the high omega-3 fatty acids category.

^d Vitamin D data was first available in 2007-2008; the value in the 1999-2000 column is the population mean from 2007-2008 and the p-trend is evaluating the change in vitamin D consumption from 2007-2008 to 2011-2012.

Asterisks indicate statistical significance of p-value for linear trend, which was estimated by treating survey-cycle as a continuous variable in a survey-weighted linear regression model (*** p-trend < 0.001; ** 0.001 < p-trend < 0.01; * 0.01 < p-trend < 0.05). 95% confidence intervals can be estimated by adding/subtracting the standard error multiplied by 1.96 with the mean estimate.

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eTable 10. Population mean^a consumption of food groups and nutrients of interest by education among US adults ≥20y by NHANES survey cycle, 1999-2000 and 2011-2012.

	<High School		High school graduate/equivalent		Some College		College Graduate		P-interaction
	1999-2000 (n=1,633)	2011-2012 (n=1,102)	1999-2000 (n=957)	2011-2012 (n=1,008)	1999-2000 (n=954)	2011-2012 (n=1,463)	1999-2000 (n=679)	2011-2012 (n=1,225)	
Total fruit, servings/d	0.91 (0.09)	0.91 (0.07)	0.9 (0.05)	0.88 (0.06)	0.96 (0.07)	0.97 (0.05)	1.23 (0.08)	1.3 (0.06)	0.46
Intact/whole fruit	0.52 (0.05)	0.6 (0.04)	0.59 (0.06)	0.62 (0.05)	0.52 (0.05)	0.64 (0.04)**	0.76 (0.05)	1.01 (0.05)***	0.004
100% fruit juice	0.47 (0.05)	0.38 (0.06)*	0.37 (0.04)	0.28 (0.04)*	0.42 (0.04)	0.34 (0.03)*	0.46 (0.04)	0.29 (0.02)***	0.38
Total vegetables, servings/d	1.45 (0.07)	1.4 (0.04)	1.63 (0.07)	1.54 (0.05)	1.64 (0.08)	1.53 (0.06)	1.72 (0.04)	1.91 (0.06)	0.17
Dark-green vegetables	0.06 (0.01)	0.08 (0.01)	0.08 (0.02)	0.11 (0.01)	0.13 (0.02)	0.14 (0.01)	0.2 (0.03)	0.25 (0.02)	0.28
Tomatoes	0.26 (0.01)	0.27 (0.01)	0.31 (0.03)	0.3 (0.02)	0.31 (0.02)	0.3 (0.01)	0.31 (0.01)	0.33 (0.01)	0.71
Other red/orange vegetables	0.08 (0.01)	0.07 (0.01)	0.07 (0.01)	0.09 (0.01)	0.09 (0.01)	0.09 (0.01)	0.12 (0.01)	0.16 (0.01)***	0.002
White potatoes	0.4 (0.02)	0.35 (0.03)	0.47 (0.03)	0.36 (0.02)**	0.39 (0.04)	0.31 (0.01)**	0.27 (0.03)	0.29 (0.02)	0.97
Other starchy	0.11 (0.01)	0.09 (0.01)	0.1 (0.01)	0.08 (0.01)	0.09 (0.02)	0.07 (0.01)	0.09 (0.01)	0.1 (0.01)	0.54
Other vegetables	0.49 (0.04)	0.5 (0.02)	0.56 (0.05)	0.55 (0.02)	0.63 (0.03)	0.6 (0.05)	0.74 (0.02)	0.76 (0.05)	0.76
Total grains, servings/d									
Whole grains	0.41 (0.04)	0.74 (0.06)***	0.46 (0.03)	1.00 (0.09)***	0.59 (0.04)	0.93 (0.05)***	0.82 (0.07)	1.21 (0.05)***	0.55
Refined grains	5.63 (0.15)	5.94 (0.16)	5.33 (0.12)	5.25 (0.12)	5.45 (0.15)	5.3 (0.13)*	5.56 (0.11)	5.06 (0.12)***	0.004
Nuts and seeds, servings/d	0.31 (0.05)	0.30 (0.04)	0.35 (0.04)	0.54 (0.06)*	0.45 (0.04)	0.64 (0.05)**	0.65 (0.05)	1.03 (0.06)***	<0.001
Legumes, servings/d	0.15 (0.02)	0.16 (0.02)	0.09 (0.02)	0.1 (0.01)	0.09 (0.01)	0.11 (0.01)	0.12 (0.02)	0.12 (0.01)	0.31
Total meat, servings/d	1.37 (0.04)	1.42 (0.05)	1.32 (0.05)	1.37 (0.05)*	1.29 (0.04)	1.35 (0.04)**	1.22 (0.05)	1.28 (0.05)	0.74
Processed meat	0.25 (0.02)	0.26 (0.02)	0.30 (0.04)	0.29 (0.02)	0.25 (0.02)	0.29 (0.02)*	0.22 (0.02)	0.26 (0.02)	0.51
Unprocessed red meat	0.53 (0.03)	0.50 (0.03)	0.51 (0.03)	0.49 (0.03)	0.48 (0.02)	0.44 (0.03)	0.41 (0.04)	0.4 (0.03)	0.72
Poultry	0.38 (0.03)	0.41 (0.03)	0.34 (0.03)	0.43 (0.03)**	0.38 (0.04)	0.41 (0.02)	0.41 (0.02)	0.4 (0.02)	0.11
Fish and shellfish	0.16 (0.02)	0.21 (0.03)	0.13 (0.02)	0.13 (0.02)	0.16 (0.02)	0.19 (0.02)	0.19 (0.03)	0.21 (0.02)	0.18
High in omega-3 fatty acids ^c	0.04 (0.02)	0.04 (0.01)	0.02 (0.01)	0.02 (0.01)	0.05 (0.01)	0.04 (0.01)	0.06 (0.01)	0.07 (0.01)	0.78
Low in omega-3 fatty acids ^c	0.12 (0.01)	0.17 (0.03)	0.11 (0.01)	0.1 (0.02)	0.11 (0.02)	0.15 (0.02)	0.14 (0.03)	0.14 (0.02)	0.72
Eggs, servings/d	0.53 (0.03)	0.57 (0.02)*	0.46 (0.06)	0.52 (0.04)	0.41 (0.04)	0.48 (0.02)*	0.34 (0.04)	0.5 (0.03)***	0.11
Total dairy, servings/d	1.32 (0.06)	1.41 (0.08)*	1.41 (0.07)	1.47 (0.07)	1.49 (0.09)	1.51 (0.05)	1.66 (0.08)	1.50 (0.05)	0.027
Milk	0.84 (0.04)	0.73 (0.07)	0.89 (0.05)	0.75 (0.06)	0.89 (0.08)	0.70 (0.04)**	0.96 (0.05)	0.66 (0.03)***	0.007
Cheese	0.39 (0.05)	0.58 (0.03)***	0.49 (0.03)	0.65 (0.02)***	0.59 (0.04)	0.73 (0.03)***	0.66 (0.06)	0.71 (0.03)*	0.087
Yogurt	0.03 (0.02)	0.05 (0.01)	0.04 (0.02)	0.04 (0.01)	0.02 (0.01)	0.05 (0.01)**	0.06 (0.01)	0.11 (0.01)**	0.067

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	<High School		High school graduate/equivalent		Some College		College Graduate		P-interaction
	1999-2000 (n=1,633)	2011-2012 (n=1,102)	1999-2000 (n=957)	2011-2012 (n=1,008)	1999-2000 (n=954)	2011-2012 (n=1,463)	1999-2000 (n=679)	2011-2012 (n=1,225)	
Sugar-sweetened beverages, servings/d ^b	1.84 (0.1)	1.6 (0.08)**	1.96 (0.15)	1.54 (0.12)*	1.89 (0.1)	1.38 (0.1)***	1.13 (0.12)	0.71 (0.04)***	0.052
Low-calorie sweetened beverages, servings/d ^b	0.39 (0.07)	0.46 (0.03)	0.6 (0.08)	0.65 (0.13)	0.72 (0.07)	0.64 (0.07)	0.76 (0.12)	0.64 (0.1)	0.22
Added sugars, teaspoon equiv/d	22.2 (0.9)	18.5 (0.7)***	21.5 (0.9)	17.6 (0.5)***	21 (0.9)	17 (0.6)***	17 (0.9)	13 (0.4)***	0.60
Macronutrients									
Total fat, %E/d	31.8 (0.5)	32.5 (0.4)	33.5 (0.5)	33.3 (0.5)	33.1 (0.6)	33.6 (0.3)	32.4 (0.4)	33.5 (0.4)	0.35
Saturated fatty acids, %E/d	10.7 (0.2)	10.4 (0.2)	11.3 (0.2)	10.7 (0.2)	11 (0.2)	10.8 (0.1)	10.6 (0.1)	10.7 (0.2)	0.16
Monounsaturated fatty acids, %E/d	17.3 (1.6)	13 (0.3)***	13.9 (0.8)	13 (0.3)	14 (0.5)	14.1 (0.7)	13.5 (0.5)	12.4 (0.2)	0.34
Polyunsaturated fatty acids, %E/d	6.5 (0.1)	7.8 (0.1)***	6.9 (0.1)	7.9 (0.1)***	7.1 (0.2)	8.1 (0.1)***	7 (0.2)	8.1 (0.1)***	0.66
Seafood omega-3 fatty acids, mg/d	131 (11)	117 (9)	93 (8)	88 (7)	131 (20)	106 (9)	148 (18)	129 (12)	0.81
Plant omega-3 fatty acids, mg/d	122 (3)	164 (3)***	135 (3)	158 (2)***	137 (5)	166 (3)***	142 (7)	171 (4)***	0.97
PUFA:SFA ratio	0.7 (0.02)	0.83 (0.02)***	0.68 (0.02)	0.8 (0.02)***	0.71 (0.02)	0.8 (0.01)**	0.76 (0.03)	0.82 (0.02)**	0.76
Protein, %E	15.5 (0.2)	15.9 (0.2)*	15.1 (0.2)	15.6 (0.3)***	15.2 (0.2)	15.6 (0.2)***	15.7 (0.2)	16.2 (0.3)	0.80
Carbohydrate, %E	51.7 (0.6)	50.9 (0.4)	50.5 (0.4)	49.3 (0.6)	50.5 (0.5)	49 (0.5)**	50 (0.5)	48.1 (0.4)***	0.14
Other nutrients									
Sodium, mg/d	3423 (59)	3432 (47)	3421 (49)	3473 (52)*	3423 (53)	3425 (17)	3430 (75)	3457 (39)	0.63
Cholesterol, mg/d	310 (9)	301 (7)	280 (14)	282 (9)	260 (8)	268 (6)	239 (13)	261 (7)	0.18
Fiber, g/d	14.6 (0.4)	16.3 (0.5)***	14.3 (0.6)	16.2 (0.3)***	14.6 (0.5)	16.6 (0.4)***	17.2 (0.4)	20.1 (0.4)***	0.001
Potassium, mg/d	2619 (40)	2557 (19)	2649 (69)	2609 (51)	2604 (50)	2609 (49)	2820 (51)	2936 (38)***	0.006
Calcium, mg/d	730 (16)	912 (23)***	752 (18)	925 (20)***	783 (28)	940 (22)***	876 (28)	967 (19)***	0.029
Vitamin D, µg/d ^d	4.2 (0.2)	4.7 (0.2)*	3.9 (0.1)	4.4 (0.2)**	4.5 (0.2)	4.6 (0.2)	4.7 (0.2)	4.6 (0.2)	0.14

^a Data are weighted. Values in parentheses are survey-weighted standard errors. All analyses (except for macronutrients) are energy-adjusted to 2000 kcal/d using the residual method. Macronutrients are reported as % of total energy.

^b serving of sugar-sweetened beverage defined as 8 fl oz or 237 grams

^c Cooked fish and shellfish containing 500 mg or more of omega-3 fatty acids (i.e., EPA and DHA) per 3 ounces are included in the high omega-3 fatty acids category.

^d Vitamin D data was first available in 2007-2008; the value in the 1999-2000 column is the population mean from 2007-2008 and the p-trend is evaluating the change in vitamin D consumption from 2007-2008 to 2011-2012.

Asterisks indicate statistical significance of p-value for linear trend, which was estimated by treating survey-cycle as a continuous variable in a survey-weighted linear regression model (*** p-trend < 0.001; ** 0.001 < p-trend < 0.01; * 0.01 < p-trend < 0.05). 95% confidence intervals can be estimated by adding/subtracting the standard error multiplied by 1.96 with the mean estimate.

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eTable 11. Population mean^a consumption of food groups and nutrients of interest by family income-to-poverty ratio (IPR)^b among US adults ≥ 20 y by NHANES survey cycle, 1999-2000 and 2011-2012.

	IPR < 1.3 ^c		IPR 1.3-1.849 ^c		IPR 1.85 – 2.99		IPR ≥ 3		P-interaction
	1999-2000 (n=1,106)	2011-2012 (n=1,564)	1999-2000 (n=516)	2011-2012 (n=594)	1999-2000 (n=664)	2011-2012 (n=702)	1999-2000 (n=1,354)	2011-2012 (n=1,574)	
Total fruit, servings/d	0.92 (0.09)	0.95 (0.05)	0.98 (0.09)	0.96 (0.08)	0.91 (0.08)	0.97 (0.08)	1.04 (0.08)	1.15 (0.05)	0.76
Intact/whole fruit	0.5 (0.06)	0.62 (0.05)	0.51 (0.06)	0.56 (0.04)**	0.53 (0.05)	0.72 (0.08)**	0.67 (0.05)	0.88 (0.05)***	0.029
100% fruit juice	0.47 (0.06)	0.41 (0.05)	0.49 (0.07)	0.35 (0.07)	0.38 (0.05)	0.26 (0.02)*	0.4 (0.03)	0.26 (0.02)***	0.025
Total vegetables, servings/d	1.40 (0.06)	1.40 (0.03)	1.45 (0.1)	1.44 (0.04)	1.61 (0.13)	1.59 (0.08)	1.77 (0.05)	1.81 (0.06)	0.19
Dark-green vegetables	0.05 (0.01)	0.11 (0.02)**	0.09 (0.03)	0.12 (0.01)	0.12 (0.03)	0.14 (0.02)	0.15 (0.02)	0.21 (0.02)*	0.83
Tomatoes	0.26 (0.02)	0.28 (0.01)	0.28 (0.03)	0.3 (0.03)	0.27 (0.02)	0.29 (0.01)	0.33 (0.02)	0.33 (0.01)	0.91
Other red/orange vegetables	0.08 (0.01)	0.08 (0.01)	0.06 (0.02)	0.08 (0.01)	0.08 (0.01)	0.11 (0.01)*	0.1 (0.01)	0.13 (0.01)**	0.03
White potatoes	0.38 (0.03)	0.34 (0.02)	0.39 (0.04)	0.29 (0.02)	0.38 (0.05)	0.33 (0.02)	0.4 (0.03)	0.31 (0.02)**	0.71
Other starchy	0.1 (0.02)	0.09 (0.01)	0.11 (0.03)	0.1 (0.01)	0.11 (0.03)	0.1 (0.02)	0.09 (0.01)	0.08 (0.01)	0.81
Other vegetables	0.46 (0.03)	0.48 (0.02)	0.48 (0.06)	0.53 (0.02)	0.63 (0.06)	0.57 (0.04)	0.7 (0.03)	0.74 (0.05)	0.98
Total grains, servings/d									
Whole grains	0.40 (0.03)	0.77 (0.04)***	0.44 (0.04)	0.97 (0.08)***	0.61 (0.08)	1.02 (0.09)***	0.65 (0.06)	1.13 (0.05)***	0.59
Refined grains	5.74 (0.15)	5.76 (0.1)	5.43 (0.16)	5.56 (0.14)	5.51 (0.16)	5.28 (0.17)*	5.43 (0.16)	5.04 (0.07)***	0.053
Nuts and seeds, servings/d	0.37 (0.05)	0.4 (0.05)	0.37 (0.06)	0.48 (0.05)	0.37 (0.05)	0.72 (0.08)***	0.49 (0.04)	0.90 (0.05)***	<0.001
Legumes, servings/d	0.12 (0.02)	0.15 (0.02)	0.09 (0.02)	0.11 (0.01)	0.14 (0.03)	0.12 (0.01)	0.09 (0.01)	0.11 (0.01)	0.90
Total meat, servings/d	1.29 (0.05)	1.37 (0.03)**	1.31 (0.09)	1.36 (0.04)	1.32 (0.05)	1.28 (0.06)	1.28 (0.05)	1.33 (0.03)	0.49
Processed meat	0.22 (0.02)	0.27 (0.01)**	0.26 (0.02)	0.30 (0.02)	0.32 (0.04)	0.28 (0.02)	0.25 (0.02)	0.27 (0.02)	0.034
Unprocessed red meat	0.48 (0.03)	0.47 (0.03)	0.41 (0.02)	0.43 (0.02)	0.5 (0.03)	0.46 (0.03)	0.49 (0.03)	0.43 (0.02)	0.28
Poultry	0.36 (0.04)	0.42 (0.02)	0.47 (0.07)	0.44 (0.03)	0.33 (0.03)	0.35 (0.03)	0.38 (0.02)	0.41 (0.02)*	0.95
Fish and shellfish	0.16 (0.02)	0.17 (0.01)	0.13 (0.05)	0.16 (0.02)	0.15 (0.03)	0.15 (0.02)	0.17 (0.01)	0.21 (0.02)*	0.30
High in omega-3 FA ^e	0.05 (0.02)	0.04 (0.01)	0.01 (0)	0.02 (0.01)	0.02 (0.01)	0.04 (0.01)	0.06 (0.01)	0.06 (0.01)	0.97
Low in omega-3 FA ^e	0.12 (0.02)	0.14 (0.01)*	0.11 (0.05)	0.14 (0.02)	0.13 (0.03)	0.11 (0.02)	0.11 (0.01)	0.15 (0.02)*	0.63
Eggs, servings/d	0.46 (0.02)	0.49 (0.02)	0.45 (0.06)	0.54 (0.03)	0.36 (0.04)	0.49 (0.04)	0.44 (0.03)	0.52 (0.02)**	0.40
Total dairy, servings/d	1.31 (0.06)	1.52 (0.06)***	1.49 (0.17)	1.49 (0.08)	1.44 (0.04)	1.39 (0.04)	1.54 (0.05)	1.51 (0.03)	0.021
Milk	0.84 (0.05)	0.73 (0.06)	0.95 (0.16)	0.73 (0.05)	0.97 (0.05)	0.69 (0.04)***	0.87 (0.04)	0.68 (0.03)***	0.15
Cheese	0.44 (0.04)	0.71 (0.03)***	0.53 (0.04)	0.66 (0.04)**	0.44 (0.03)	0.63 (0.05)**	0.63 (0.03)	0.71 (0.02)***	0.022
Yogurt	0.02 (0.01)	0.04 (0.01)**	0.03 (0.01)	0.06 (0.01)**	0.03 (0.01)	0.05 (0.01)*	0.05 (0.01)	0.09 (0.01)***	0.23
Sugar-sweetened beverages, servings/d ^d	2.16 (0.21)	1.67 (0.07)**	2.04 (0.16)	1.58 (0.12)**	1.78 (0.14)	1.28 (0.11)***	1.48 (0.08)	0.91 (0.09)***	0.55

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	IPR < 1.3 ^c		IPR 1.3-1.849 ^c		IPR 1.85 – 2.99		IPR ≥ 3		P-interaction
	1999-2000 (n=1,106)	2011-2012 (n=1,564)	1999-2000 (n=516)	2011-2012 (n=594)	1999-2000 (n=664)	2011-2012 (n=702)	1999-2000 (n=1,354)	2011-2012 (n=1,574)	
Low-calorie sweetened beverages, servings/d ^b	0.26 (0.06)	0.44 (0.04)*	0.35 (0.05)	0.69 (0.1)**	0.65 (0.15)	0.64 (0.08)	0.85 (0.09)	0.67 (0.06)	0.069
Added sugars, teaspoon equiv/d	23.8 (1.3)	18 (0.5)***	23.7 (1.1)	18 (0.6)***	21.1 (1)	16.7 (0.7)***	18.3 (0.7)	14.3 (0.4)***	0.093
Macronutrients									
Total fat, %E/d	31.7 (0.6)	32.6 (0.2)	31.9 (0.8)	32.7 (0.3)	32.5 (0.8)	33.7 (0.5)	33.5 (0.4)	33.8 (0.3)	0.87
Saturated fatty acids, %E/d	10.5 (0.2)	10.7 (0.1)	10.9 (0.4)	10.6 (0.2)	10.9 (0.2)	10.8 (0.2)	11.1 (0.2)	10.7 (0.1)	0.37
Monounsaturated fatty acids, %E/d	17.5 (1.4)	13.9 (0.4)**	14.7 (0.6)	13.7 (0.5)	13.5 (0.5)	12.9 (0.3)	12.6 (0.5)	12.3 (0.2)	0.011
Polyunsaturated fatty acids, %E/d	6.7 (0.2)	7.7 (0.1)***	6.7 (0.2)	7.8 (0.2)***	6.8 (0.2)	8 (0.1)***	7.1 (0.1)	8.2 (0.1)***	0.054
Seafood omega-3 fatty acids, mg/d	133 (16)	104 (6)	104 (19)	92 (10)	95 (12)	96 (11)	137 (10)	124 (10)	0.73
Plant omega-3 fatty acids, mg/d	123 (3)	160 (2)***	130 (3)	160 (3)***	133 (4)	165 (4)***	141 (4)	170 (3)***	0.90
PUFA:SFA ratio	0.72 (0.01)	0.79 (0.01)*	0.7 (0.04)	0.8 (0.03)*	0.7 (0.02)	0.8 (0.02)**	0.72 (0.01)	0.83 (0.01)***	0.007
Protein, %E	14.9 (0.3)	15.7 (0.1)***	15.1 (0.4)	15.7 (0.3)**	15 (0.2)	15.3 (0.3)	15.6 (0.2)	16 (0.1)***	0.46
Carbohydrate, %E	52.7 (0.5)	50.6 (0.3)***	52.6 (1)	50.8 (0.3)**	51 (0.7)	49.2 (0.6)*	49.4 (0.5)	47.9 (0.3)***	0.88
Other nutrients									
Sodium, mg/d	3321 (55)	3452 (35)*	3330 (71)	3488 (63)**	3470 (84)	3453 (58)	3467 (40)	3412 (28)	0.17
Cholesterol, mg/d	279 (8)	276 (7)	271 (16)	279 (7)	253 (8)	265 (11)	269 (8)	270 (5)	0.99
Fiber, g/d	14 (0.5)	16.3 (0.5)***	14 (0.6)	16.3 (0.5)***	14.9 (0.5)	17.6 (0.6)	15.9 (0.4)	18.7 (0.3)	0.18
Potassium, mg/d	2487 (49)	2528 (26)*	2569 (78)	2557 (51)	2657 (59)	2662 (75)	2770 (43)	2845 (36)*	0.79
Calcium, mg/d	714 (17)	955 (19)***	769 (52)	941 (31)***	778 (11)	891 (16)***	816 (19)	958 (15)***	0.004
Vitamin D, µg/d ^f	4.0 (0.2)	4.7 (0.2)**	4.5 (0.2)	4.6 (0.2)	4.4 (0.2)	4.1 (0.2)	4.4 (0.1)	4.6 (0.2)	0.14

^a Data are weighted. Values in parentheses are survey-weighted standard errors. All analyses (except for macronutrients) are energy-adjusted to 2000 kcal/d using the residual method. Macronutrients are reported as % of total energy.

^b The ratio of family income to the federal poverty level. In 2012, for a family of four the federal poverty level was \$23,050.

^c Those with a family income-to-poverty ratio of less than 1.3 are generally eligible for the Supplemental Nutrition Assistance Program. Those with a family income of less than 1.85 of the federal poverty level are generally eligible for the Special Supplemental Nutrition Program for Women, Infants, and Children.

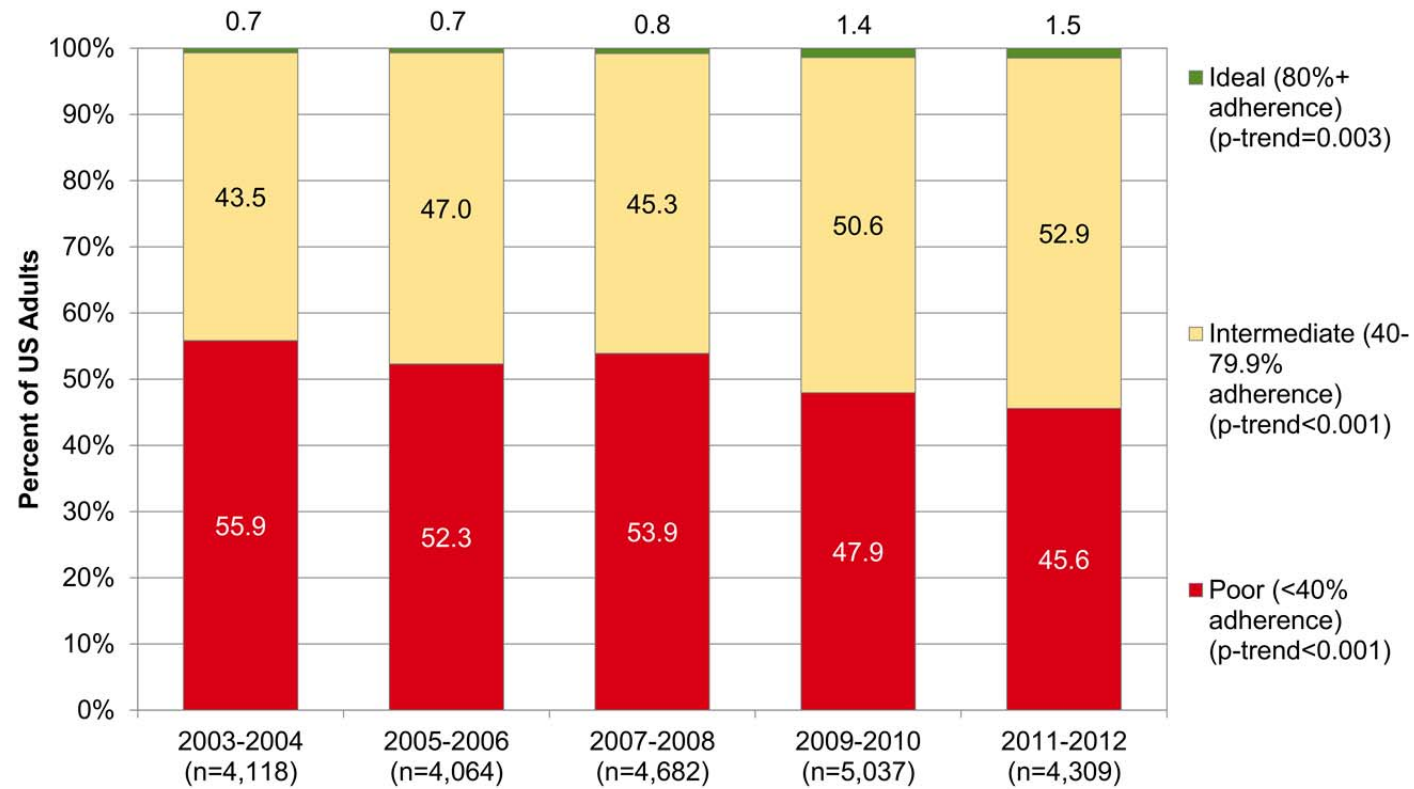
^d serving of sugar-sweetened beverage defined as 8 fl oz or 237 grams. Sugar-sweetened beverages include soft drinks, fruit drinks, sports drinks, presweetened teas and energy drinks with more than 50 kcal per 8 fl oz.

^e Cooked fish and shellfish containing 500 mg or more of omega-3 fatty acids (i.e., EPA and DHA) per 3 ounces are included in the high omega-3 fatty acids category.

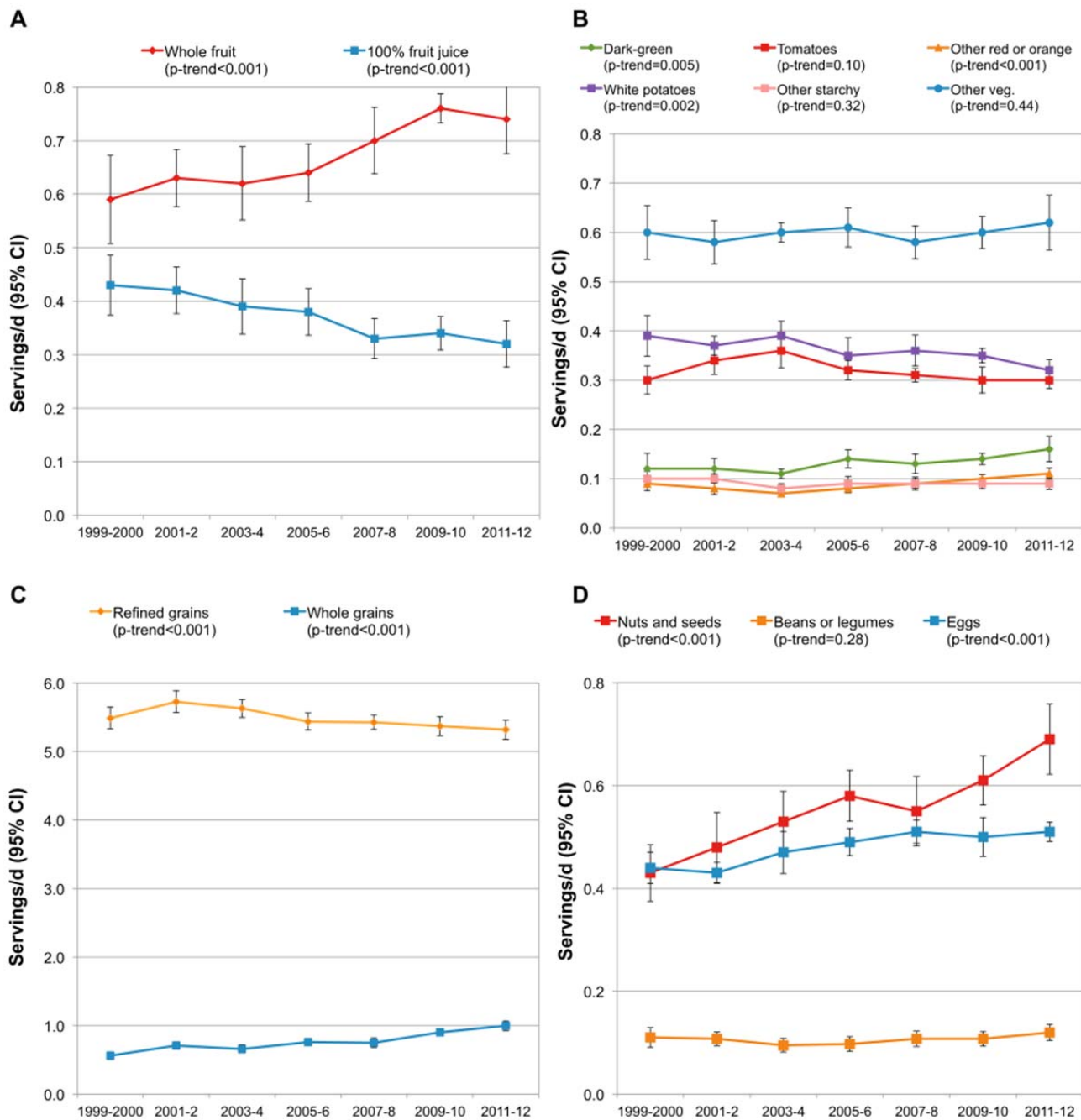
^f Vitamin D data was first available in 2007-2008; the value in the 1999-2000 column is the population mean from 2007-2008 and the p-trend is evaluating the change in vitamin D consumption from 2007-2008 to 2011-2012.

Asterisks indicate statistical significance of p-value for linear trend, which was estimated by treating survey-cycle as a continuous variable in a survey-weighted linear regression model (***) $p\text{-trend} < 0.001$; ** $0.001 < p\text{-trend} < 0.01$; * $0.01 < p\text{-trend} < 0.05$). 95% confidence intervals can be estimated by adding/subtracting the standard error multiplied by 1.96 with the mean estimate.

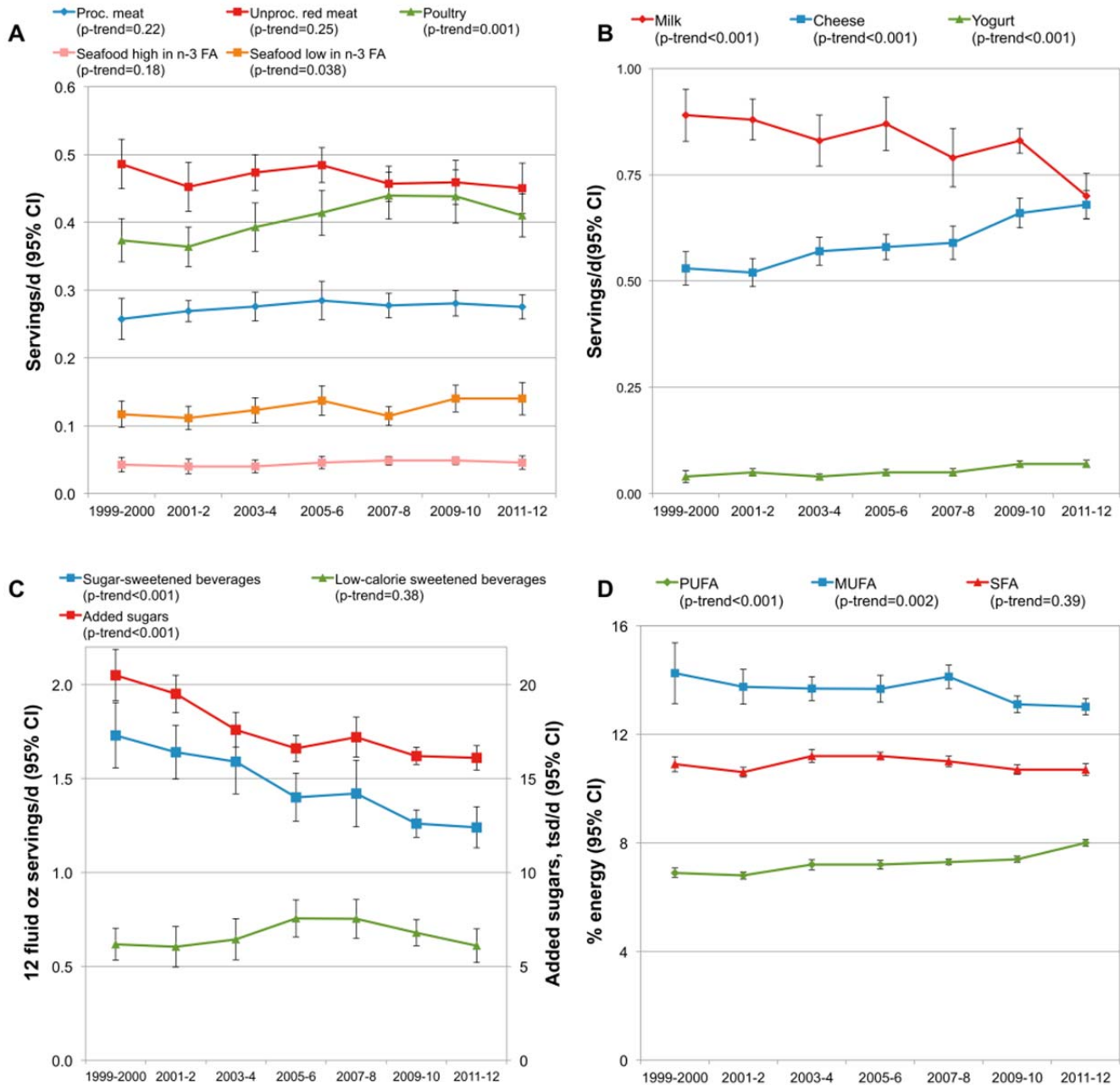
eFigure 1. Trends in proportions of US adults (age \geq 20y) with ideal, intermediate, or poor diet quality according to the American Heart Association 2020 Strategic Impact Goals, based on a continuous scoring system (eTable 2 for scoring details). Data are weighted.



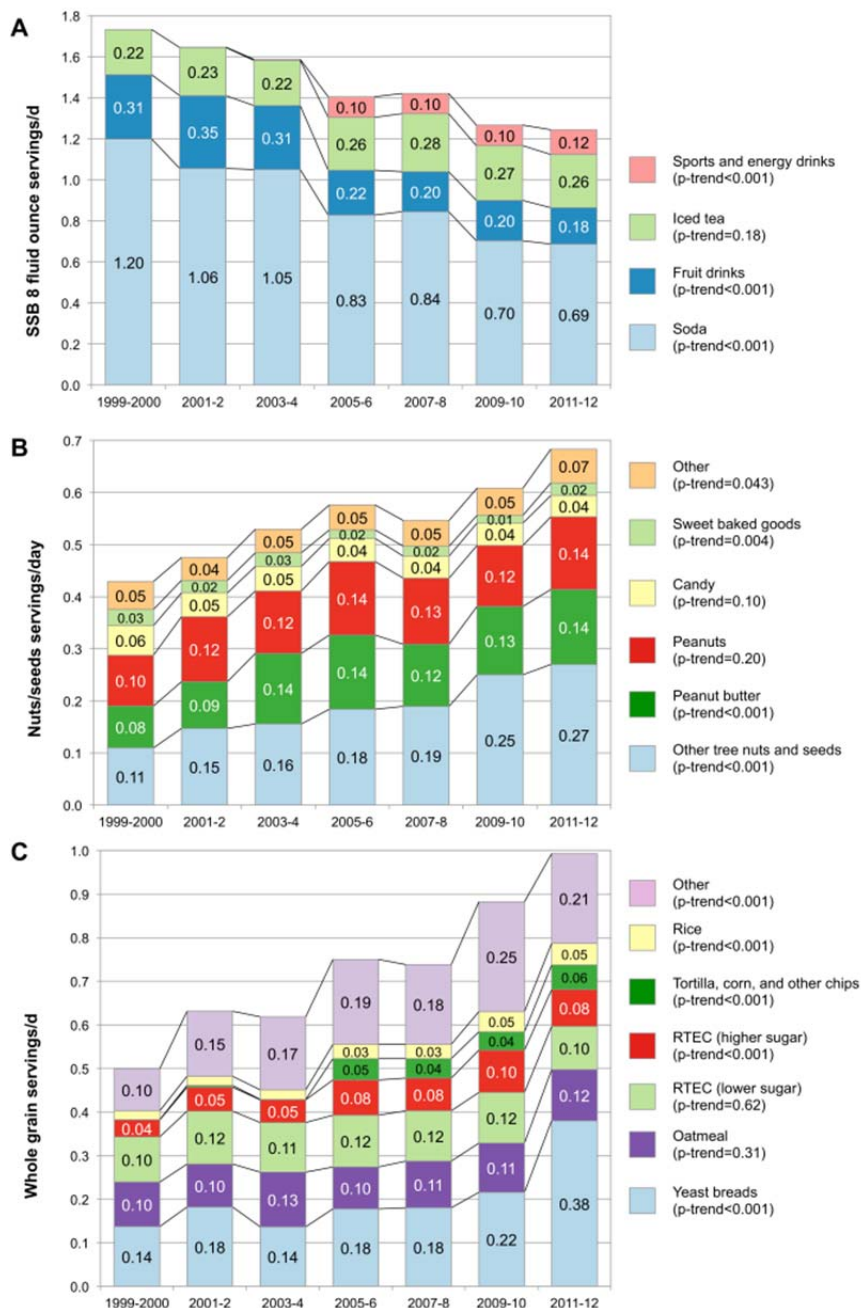
eFigure 2. Trends in mean consumption of fruits (Panel A), vegetables (Panel B), grains (Panel C), and nuts/seeds, legumes and eggs (Panel D) among US adults, based on NHANES data from 1999 to 2012. Data are weighted. All values energy-adjusted to 2000 kcal/d using the residual method. Serving sizes: fruits, vegetables, legumes: 1 cup; grains, nuts/seeds, eggs: 1-oz equivalents.



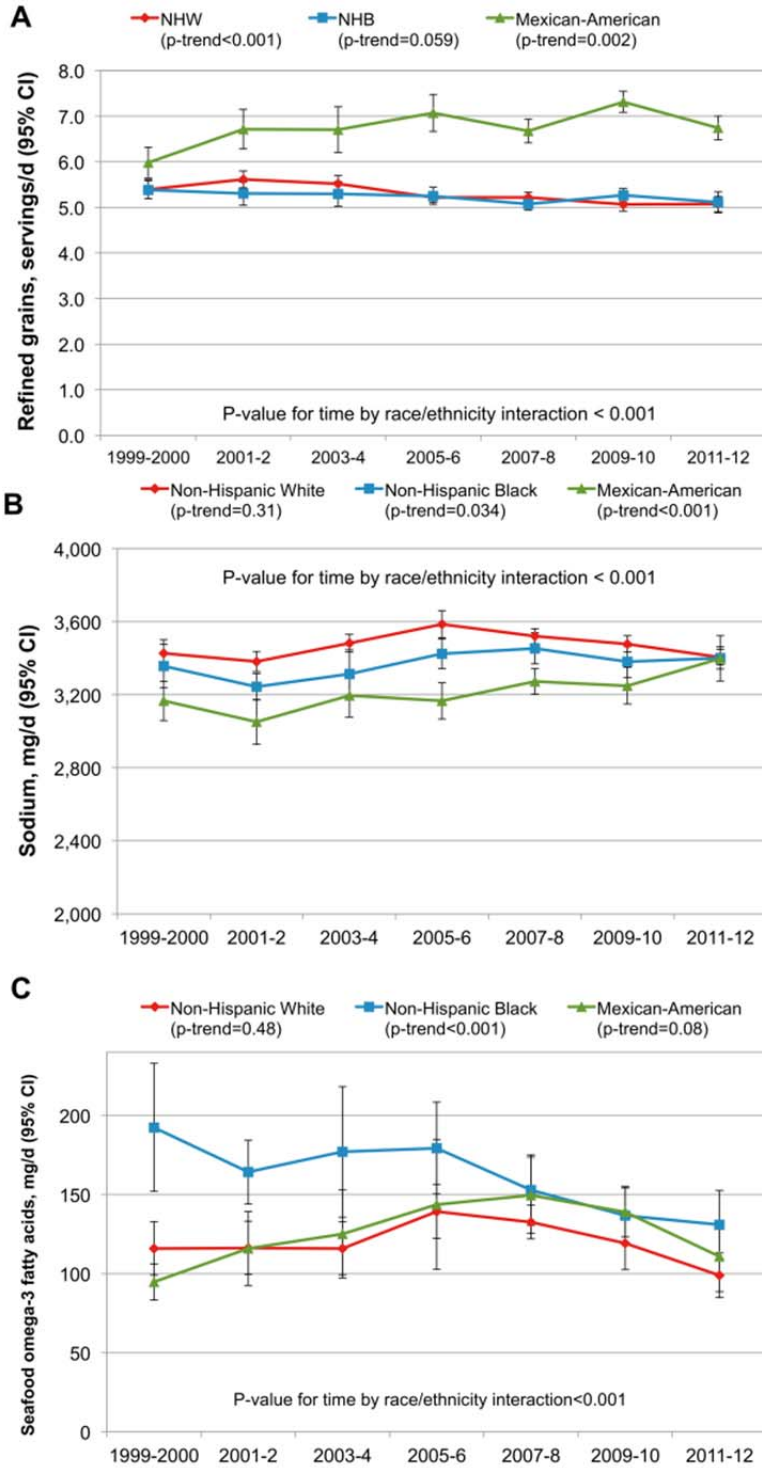
eFigure 3. Trends in mean consumption of meat and fish and shellfish (Panel A), dairy (Panel B), added sugars, sugar-sweetened beverages, and low/non-calorie sweetened beverages (Panel C), and dietary fats (Panel D) among US adults, based on NHANES data from 1999 to 2012. Data are weighted. Values in Panels A-C are energy-adjusted to 2000 kcal/d using the residual method. Serving sizes: meat, fish and shellfish: 3.5-oz equivalents; dairy: 1 cup; sugar-sweetened or low-calorie beverages: 8 fluid oz. PUFA=polyunsaturated fatty acid, MUFA=monounsaturated fatty acid, SFA=saturated fatty acid.



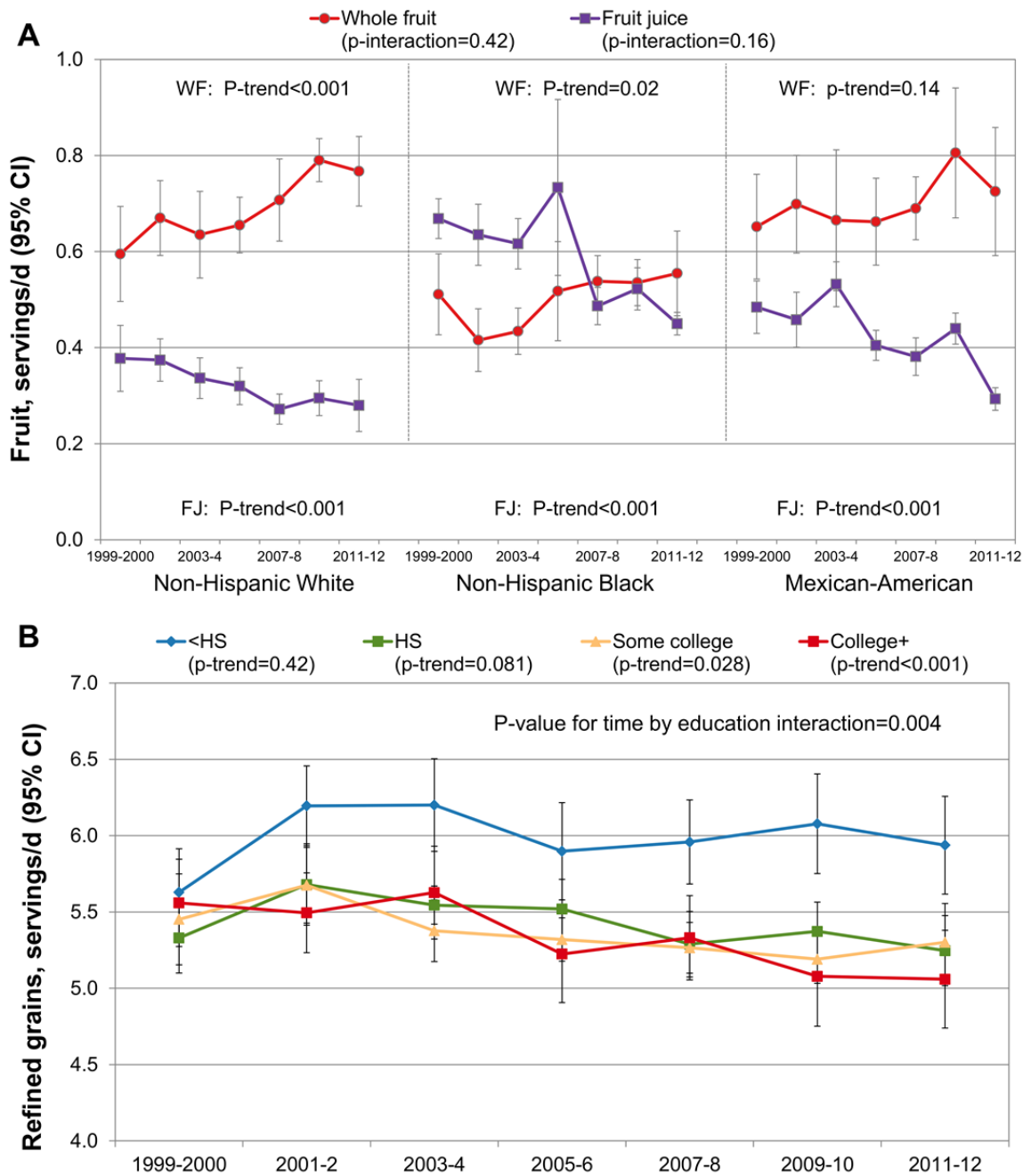
eFigure 4. Trends in mean consumption of subtypes of sugar-sweetened beverages (Panel A), nuts/seeds (Panel B), and whole grains (Panel C) among US adults, based on NHANES data from 1999 to 2012. Data are weighted. All values are energy-adjusted to 2000 kcal/d using the residual method. Food categories are based on What We Eat In America (WWEIA) food categorization scheme created by the United States Department of Agriculture for Panel A and C. Since, the WWEIA food categories combine peanuts, peanut butter and tree nuts and seeds in a single category, these different types of nuts/seeds were disaggregated by the authors, while the remaining categories (candy, sweet baked foods and others) are based on the WWEIA categories. For candy and sweet baked foods, the values in the graph correspond only to the nut/seed content (e.g., nuts in cookies or as part of candy bar). Higher sugar ready-to-eat cereals (RTEC) defined as >21.2g of sugar per 100g and lower sugar cereals defined as those with less than 21g of sugar per 100g. Serving sizes for nuts/seeds and whole grains: 1-oz equivalent.



eFigure 5. Trends in mean consumption of refined grains (Panel A), sodium (Panel B) and seafood omega-3 fats (Panel C) by race/ethnicity among US adults, based on NHANES data from 1999 to 2012. Data are weighted. All values are energy-adjusted to 2000 kcal/d using the residual method. Serving sizes: grains: 1-oz equivalent.



eFigure 6. Trends in mean consumption of fruit by race/ethnicity (Panel A) and refined grains by education (Panel B) among US adults, based on NHANES data from 1999 to 2012. Data are weighted. All values are energy-adjusted to 2000 kcal/d using the residual method. Serving sizes: fruit: 1-cup; grains: 1-oz equivalent.



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