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A Comparison of Food Patterns Equivalents Intakes by Americans: What We Eat in America, NHANES 2003-04 and 2011-12

Shanthy A Bowman, PhD; James E Friday, BS; John C Clemens, MS;
Randy P LaComb, MS; and Alanna J Moshfegh, MS, RD

Highlights

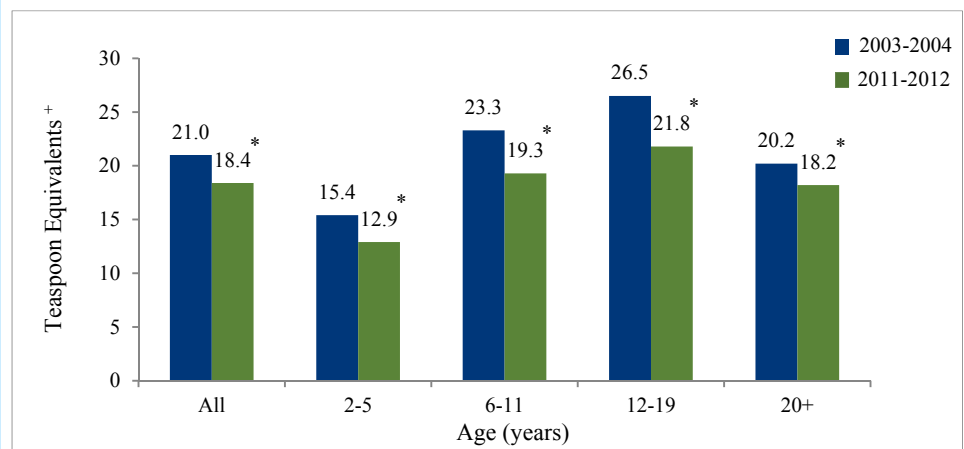
- Estimated mean daily intakes of added sugars by Americans substantially decreased by 2.6 tsp. eq. (11 grams) from 21 tsp. eq. in 2003-2004 to 18.4 tsp. eq. in 2011-2012.
- Other notable changes in mean daily intakes between 2003-2004 and 2011-2012 were:
 - An 11 gram reduction in intake of solid fats.
 - A small, but significant increase in whole grains intake from 0.6 to 0.9 oz. eq.
- No changes were noted in the fruit; vegetables; dairy; and total meat, poultry, and seafood intakes between 2003-2004 and 2011-2012.

The Dietary Guidelines for Americans 2015-2020 (DGA) encourage Americans to increase their fruit, vegetables, and whole grains intake and limit intake of added sugars and solid fats [1]. The federal government provides several tools that inform consumers on how to choose a healthful diet [2]. This report highlights the changes in the dietary intakes of selected USDA Food Patterns groups, including added sugars and solid fats, for the U.S. population from What We Eat in America, NHANES 2003-2004 and 2011-2012 [3-5].

Did the intakes of added sugars change from 2003-2004 to 2011-2012?

Overall, for all individuals ages 2 years and over, the estimated mean daily intake of added sugars substantially decreased by 2.6 teaspoon equivalents (tsp. eq.) or 11 grams. Similarly, substantial reductions were noted among each of the age groups studied: children ages 2-5, 6-11, and 12-19; and adults ages 20+ years (Figure 1). Although Americans have reduced their added sugars intakes, their mean intakes are still high.

Figure 1. Estimated mean daily intakes of added sugars by age, 2003-2004 and 2011-2012



⁺ One teaspoon equivalent is equal to 4.2 grams of sugar.

* Significantly different from 2003-04 ($p < 0.01$).

SOURCE: What We Eat in America, NHANES 2003-2004 and 2011-2012, day 1, individuals 2+ years



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Did the intakes of solid fats and oils change from 2003-2004 to 2011-2012?

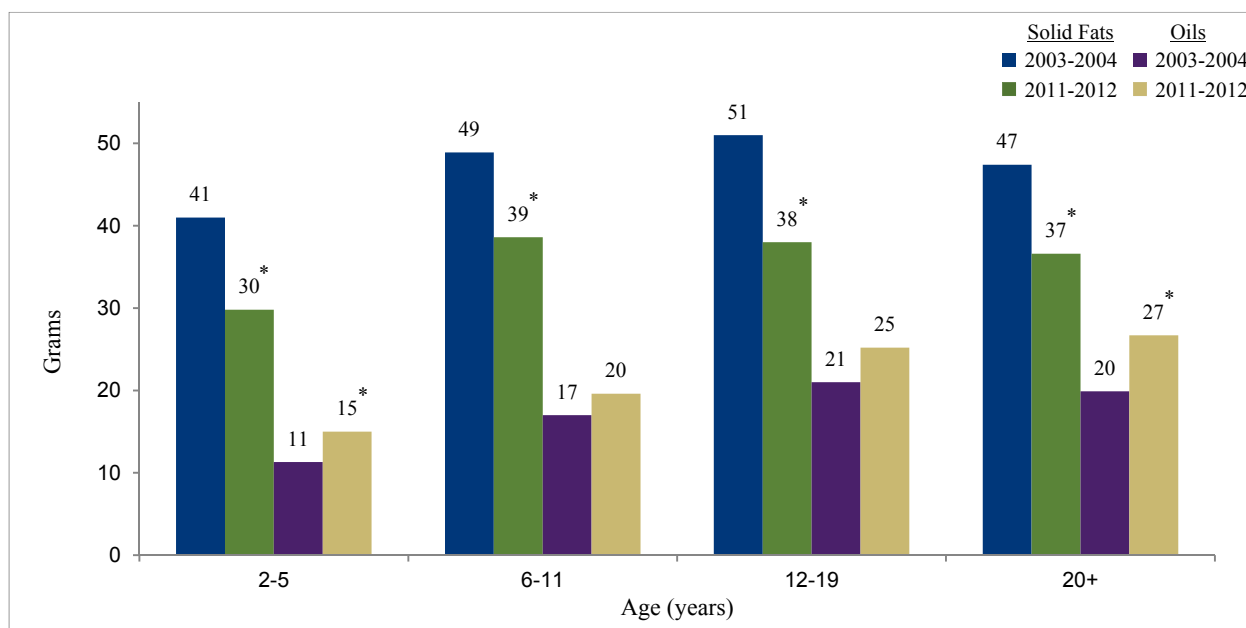
The estimated mean daily intakes of total fat did not change for all age groups studied (data not shown).

Solid Fats: Overall, for all individuals ages 2 years and over, the estimated mean daily intake of solid fats substantially decreased by 11.1 grams, from 47.6 to 36.5 grams (data not shown). Similarly, substantial reductions were noted in each of the age groups studied: children ages 2-5, 6-11, and 12-19; and adults ages 20+ years (Figure 2).

Oils: Overall, for all individuals ages 2 years and over, the estimated mean daily intakes of oils significantly increased by 6.1 grams, from 19.2 to 25.3 grams (data not shown). Further analysis showed significant increases for children 2-5 years and adults ages 20+ years, only.

The Dietary Guidelines recommend consuming the calories from total fat as oils than as solid fats, which are high in saturated fats.

Figure 2. Estimated mean daily intakes of solid fats and oils by age, 2003-2004 and 2011-2012



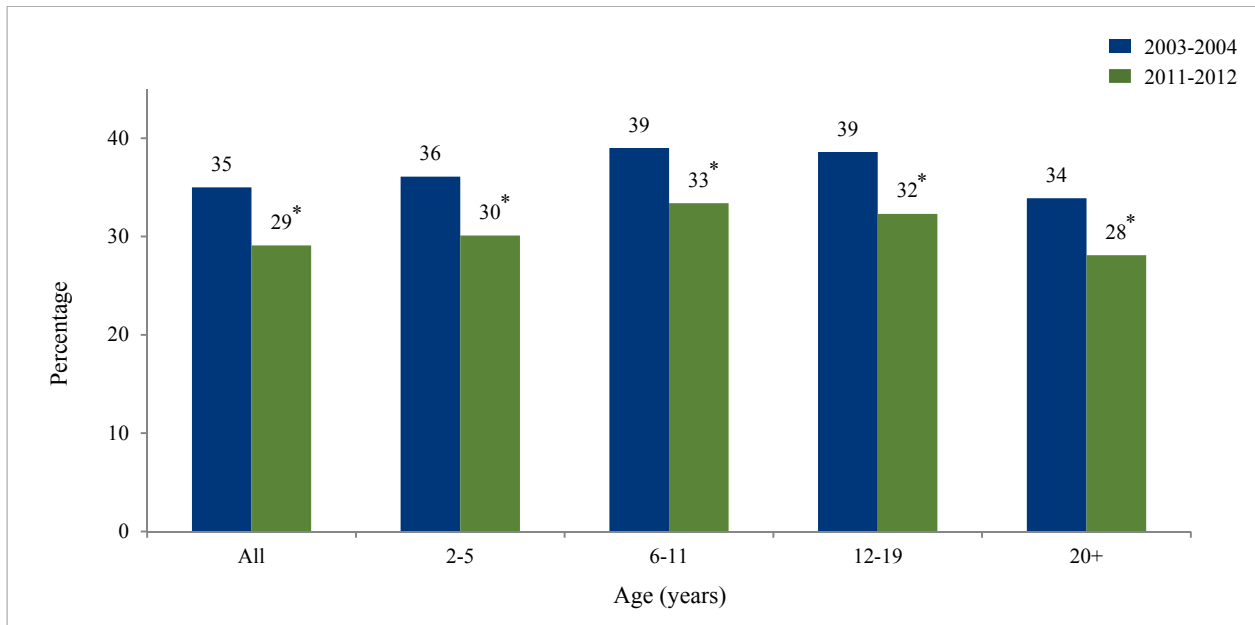
*Significantly different from 2003-04 (p<0.01)

DATA SOURCE: What We Eat in America, NHANES 2003-2004 and 2011-2012, day 1, individuals 2+ years

Did calories obtained from added sugars and solid fats change?

The calories obtained from added sugars and solid fats provide low nutritional benefits. Individuals are encouraged to limit intakes of foods high in added sugars and solid fats and replace them with nutritious foods that contain little or no added sugars or solid fats. The mean daily intake of calories from added sugars and solid fats, estimated as percentages of total calories, substantially decreased by 6 percentage points for all individuals (Figure 3). Also, substantial reductions were noted in each of the age groups studied. Americans, in general, had diets relatively lower in calories from added sugars and solid fats in 2011-2012 than in 2003-2004.

Figure 3. Estimated mean daily intakes of combined calories from added sugars and solid fats as percentage of total calories by age, 2003-2004 and 2011-2012



*Significantly different from 2003-04 (p<0.01)

SOURCE: What We Eat in America, NHANES 2003-2004 and 2011-2012, day 1, individuals 2+ years

Did the intakes of grains change from 2003-2004 to 2011-2012?

There were no differences in the total grains intakes from 2003-2004 to 2011-2012, for the age groups studied. The estimated mean daily intakes of whole grains increased for all age groups. However, these increases were very small, especially considering the Dietary Guidelines for Americans recommendations that half the total grains consumed be whole grains.

Table 1. Estimated mean daily intakes of total, whole, and refined grains by age, 2003-2004 and 2011-2012

Age Group (years)	Grain Group	WWEIA, NHANES	
		2003-2004	2011-2012
2-5	Total Grains (oz. eq.)	5.3	5.1
	Whole Grains (oz. eq.)	0.4	0.7*
	Refined Grains (oz. eq.)	4.8	4.4
6-11	Total Grains (oz. eq.)	7.2	7.1
	Whole Grains (oz. eq.)	0.6	0.8*
	Refined Grains (oz. eq.)	6.6	6.4
12-19	Total Grains (oz. eq.)	7.8	7.5
	Whole Grains (oz. eq.)	0.4	0.7*
	Refined Grains (oz. eq.)	7.4	6.7*
20+	Total Grains (oz. eq.)	6.9	6.8
	Whole Grains (oz. eq.)	0.6	1.0*
	Refined Grains (oz. eq.)	6.2	5.8*
All	Total Grains (oz. eq.)	6.9	6.8
	Whole Grains (oz. eq.)	0.6	0.9*
	Refined Grains (oz. eq.)	6.3	5.9*

* Significantly different from 2003-2004 (p<0.01)

SOURCE: What We Eat in America, NHANES 2003-2004 and 2011-2012, day 1, individuals 2+ years

Did the intakes of vegetables; fruit; dairy; and meat, poultry, and seafood change from 2003-04 to 2011-12?

No differences were noted in the mean intakes of total fruit; total dairy; and total meat, poultry, and seafood intakes, for all age groups studied. Children ages 2-5 years consumed 0.1 cup equivalents (cup eq.) less of total vegetables in 2011-2012 as compared to 2003-2004. Although statistically significant, this reduction does not have practical significance. Among all other ages groups, no changes were noted in the total vegetables intakes, and the intakes remained the same for the two survey periods.

Table 2. Estimated mean daily intakes of total vegetables; total fruit; total dairy; and total meat, poultry, and seafood by age, 2003-2004 and 2011-2012

Age Group (years)	Food Patterns Group	WWEIA, NHANES	
		2003-2004	2011-2012
2-5	Total Vegetables (cup eq.)	0.8	0.7*
	Total Fruit (cup eq.)	1.5	1.4
	Total Dairy (cup eq.)	2.4	2.3
	Total Meat, Poultry, & Seafood (oz. eq.)	2.5	2.3
6-11	Total Vegetables (cup eq.)	1.0	0.9
	Total Fruit (cup eq.)	1.0	1.2
	Total Dairy (cup eq.)	2.4	2.2
	Total Meat, Poultry, & Seafood (oz. eq.)	3.2	3.2
12-19	Total Vegetables (cup eq.)	1.3	1.1
	Total Fruit (cup eq.)	1.0	0.9
	Total Dairy (cup eq.)	2.2	2.3
	Total Meat, Poultry, & Seafood (oz. eq.)	4.3	4.2
20+	Total Vegetables (cup eq.)	1.6	1.6
	Total Fruit (cup eq.)	1.0	1.0
	Total Dairy (cup eq.)	1.6	1.6
	Total Meat, Poultry, & Seafood (oz. eq.)	4.8	4.8
All	Total Vegetables (cup eq.)	1.5	1.5
	Total Fruit (cup eq.)	1.0	1.0
	Total Dairy (cup eq.)	1.8	1.8
	Total Meat, Poultry, & Seafood (oz. eq.)	4.5	4.4

* Significantly different from 2003-2004 (p<0.01)

What are the implications of the study?

From 2003-2004 to 2011-2012:

- Americans consumed less added sugars. This reduction could partly be due to the increased availability of snack foods and beverages that are relatively low in caloric sweeteners or contain sugar substitutes, thereby enabling Americans to choose food products low in added sugars.
- The proportion of solid fats and oils to total fat in the American diet changed for the better. Americans consumed a lower proportion of their total fat as solid fats. These changes could be due to the replacement of hydrogenated oils with unhydrogenated oils in fried food products and in margarine and the increased availability of lean meat options.
- Although Americans increased their whole grains consumption in a small way, there is a need to further increase the levels to 50 percent of total grains consumption.
- Mean intakes of vegetables, fruit, and dairy foods continued to be low when compared to the Dietary Guidelines recommendations.

Definitions Used in the Food Patterns Equivalents Databases

Added sugars are defined as caloric sweeteners that are added to foods as an ingredient during preparation, processing, or at the table. Added sugars do not include naturally occurring sugars such as lactose present in milk and fructose present in fruit and 100% fruit juice.

Solid fats include fats that are naturally present in dairy products such as milk, cheese, butter, cream, cream cheese, and sour cream; fats naturally present in meat, poultry, and eggs; lard; fully or partially hydrogenated fats and shortenings; cocoa butter; coconut oil; and palm oil.

Oils include unhydrogenated vegetable oils (except palm oil, palm kernel oil, and coconut oil) and fats that are naturally present in nuts, seeds, avocado, olives, and seafood.

USDA Food Patterns include the five food groups, vegetables, fruits, grains, dairy, and protein foods; and oil, added sugars, and solid fats.

Units of measurements: For further details on the units of measurements such as ounce and cup equivalents for specific foods, see reference #4.

Data sources

(1) What We Eat in America, NHANES 2003-2004 and 2011-2012, day 1 dietary data were used to estimate Food Patterns equivalents intakes. Study sample included 8,272 and 7,932 individuals, aged 2 years and over (excluding breast-fed children) with complete and reliable intake records, in the 2003-2004 and 2011-2012 surveys, respectively. Sample weights were applied in the analyses to produce nationally representative estimates, (2) Food Patterns Equivalents Database 2011-12, and (3) MyPyramid equivalents Database 2.0 for USDA Survey Foods 2003-2004.

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About the authors

Shanthy A Bowman, James E Friday, John C Clemens, Randy P LaComb, and Alanna J Moshfegh are with the Food Surveys Research Group, Beltsville Human Nutrition Research Center, Agricultural Research Service, U.S. Department of Agriculture.

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