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Food Patterns Equivalents Intakes by Americans: What We Eat in America, NHANES 2003-2004 and 2013-2014

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

Highlights

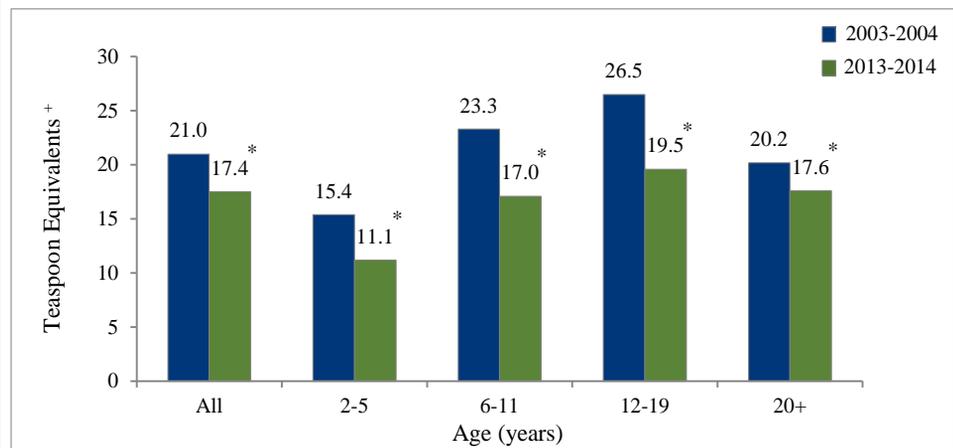
- Americans reduced their added sugars intake in a 10-year period. The estimated mean intakes of added sugars substantially decreased by 3.6 tsp. eq. (15 grams) from 21 tsp. eq. in 2003-2004 to 17.4 tsp. eq. in 2013-2014.
- Other notable changes in mean intakes between 2003-2004 and 2013-2014 were:
 - a 12.3 gram reduction in solid fats intake
 - a very 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 2013-2014.

The 2015-2020 Dietary Guidelines for Americans encourage Americans to increase their fruit, vegetables, and whole grains intakes and limit added sugars and solid fats intakes [1]. This report highlights the changes in the U.S. population's intake of selected USDA Food Patterns groups, including added sugars and solid fats, using What We Eat in America, NHANES 2003-2004 and 2013-2014 dietary data [2-4]; and is a follow up to the previously released data brief comparing dietary intakes from 2003-2004 and 2011-2012 surveys [5].

Did the added sugars intake decrease from 2003-2004 to 2013-2014?

The added sugars intake decreased from 2003-2004. For all individuals ages 2 years and over, the estimated mean intake of added sugars substantially decreased by 3.6 teaspoon equivalents (tsp. eq.) or 15 grams from 2003-2004. Substantial reductions from 2003-2004 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 continue to reduce their added sugars intake, the mean amounts consumed remain high.

Figure 1. Estimated mean intakes of added sugars per day by age, 2003-2004 and 2013-2014



+ One teaspoon equivalent = 4.2 grams of sugar

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

DATA SOURCE: What We Eat in America, NHANES 2003-2004 and 2013-2014, day 1, individuals 2+ years



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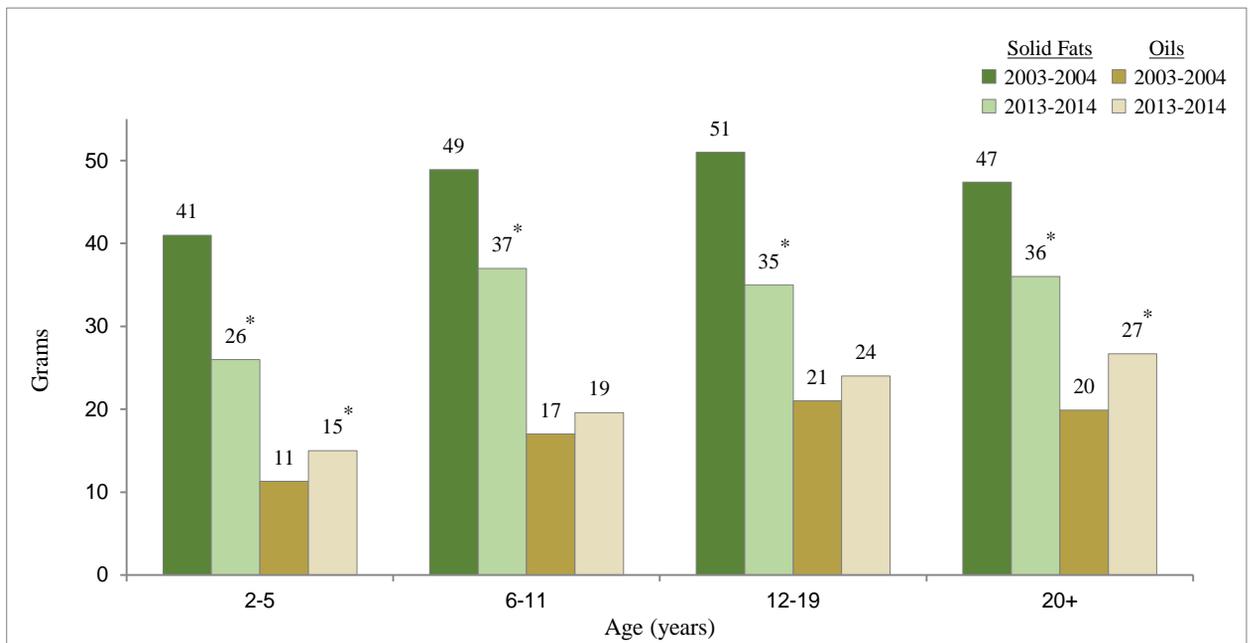
Did the solid fats and oils intakes change from 2003-2004 to 2013-2014?

Both solid fats and oils are food sources of total fat. The Dietary Guidelines recommend choosing oils over solid fats [1]. Solid fats are high in saturated fats and are present abundantly in the diets of Americans and may contribute to excess caloric intakes [1].

Solid Fats: Overall, for all individuals ages 2 years and over, the estimated mean intake of solid fats substantially decreased by 12.3 grams, from 47.6 to 35.3 grams (data not shown in Figure 2). 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: The estimated mean intakes of oils for all individuals, ages 2 years and over, significantly increased by 6.2 grams, from 19.2 to 25.4 grams (data not shown in Figure 2). Further analysis showed significant increases for children 2-5 years and adults ages 20+ years, only (Figure 2).

Figure 2. Estimated mean intakes of solid fats and oils per day by age, 2003-2004 and 2013-2014



*Significantly different from 2003-04 (p<0.01)
Means rounded to integers.

DATA SOURCE: What We Eat in America, NHANES 2003-2004 and 2013-2014, day 1, individuals 2+ years

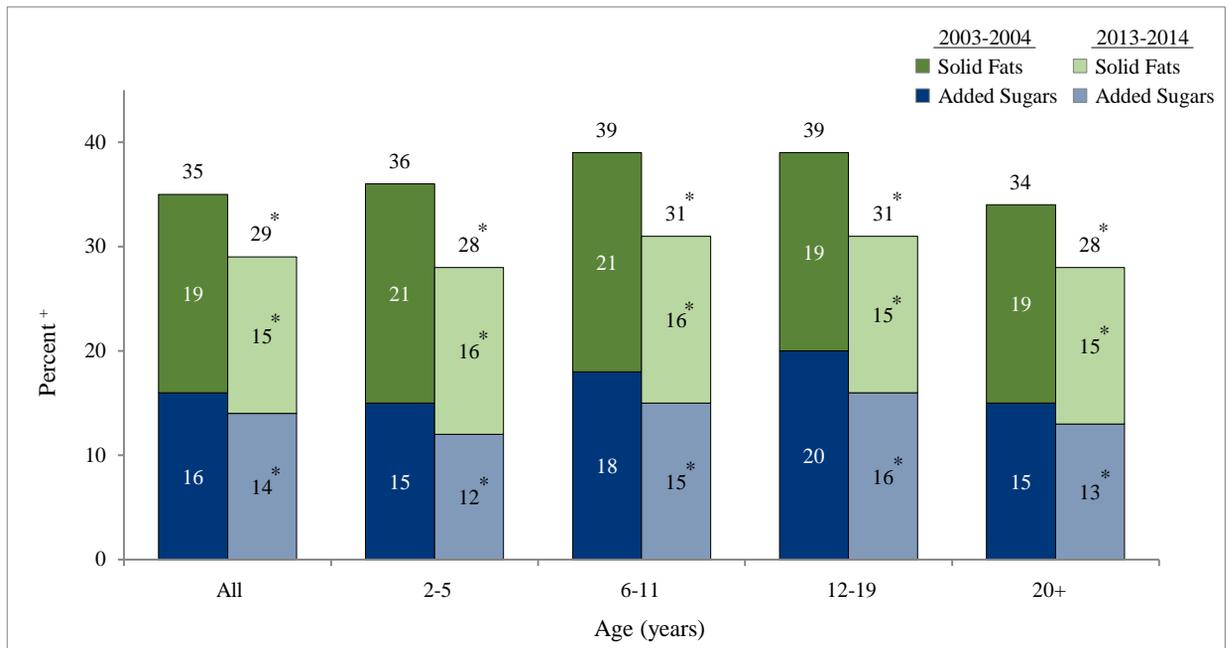
Did the calories obtained from added sugars and solid fats change?

The calories obtained from added sugars and solid fats come with low nutritional benefits. The Dietary Guidelines encourage Americans to consume nutrient-dense foods and beverages, with little or no solid fats and added sugars [1].

Americans obtained fewer calories from added sugars and solid fats in 2013-2014 than in 2003-2004. The calories obtained from both added sugars and solid fats, and estimated as percent of total calories for the day, decreased by 6 percent for all individuals ages 2 years and over (Figure 3). In children ages 2-5, 6-11, and 12-19, the reduction was 8 percent for each age group; in adults, it was 6 percent.

The added sugars calories decreased by 2 to 4 percent and the solid fat calories decreased by 4 to 5 percent, across all age groups.

Figure 3. Estimated mean intakes of calories from added sugars and solid fats per day as percent of total calories by age, 2003-2004 and 2013-2014



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

+ Percentages rounded to integers.

DATA SOURCE: What We Eat in America, NHANES 2003-2004 and 2013-2014, day 1, individuals 2+ years

Did the grains intakes change from 2003-2004 to 2013-2014?

There were no differences in the total grains intakes from 2003-2004 to 2013-2014, for all age groups analyzed. The estimated mean intakes of whole grains increased for all age groups. However, these increases were very small, especially considering the Dietary Guidelines recommendations that half the total grains consumed be whole grains [1].

Table 1. Estimated mean intakes of total, whole, and refined grains per day by age, 2003-2004 and 2013-2014

Age Group (years)	Grains Group	WWEIA, NHANES	
		2003-2004	2013-2014
2-5	Total Grains (oz. eq.)	5.3	5.3
	Whole Grains (oz. eq.)	0.4	0.9*
	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	6.2
12-19	Total Grains (oz. eq.)	7.8	7.1
	Whole Grains (oz. eq.)	0.4	0.8*
	Refined Grains (oz. eq.)	7.4	6.3*
20+	Total Grains (oz. eq.)	6.9	6.6
	Whole Grains (oz. eq.)	0.6	0.9*
	Refined Grains (oz. eq.)	6.2	5.7*
All	Total Grains (oz. eq.)	6.9	6.6
	Whole Grains (oz. eq.)	0.6	0.9*
	Refined Grains (oz. eq.)	6.3	5.7*

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

DATA SOURCE: What We Eat in America, NHANES 2003-2004 and 2013-2014, day 1, individuals 2+ years

Did the vegetables; fruit; dairy; and meat, poultry, and seafood intakes change from 2003-04 to 2013-2014?

Small but significant reductions in total vegetables intakes were noted among children 2-5 and adults 20+ years. However, when estimated per 1000 calories, these differences disappeared, because mean energy intake decreased for all age groups in 2013-2014 (data not shown). No differences were noted in mean intakes of total fruit; total dairy; and total meat, poultry, and seafood intakes, for all age groups studied.

Table 2. Estimated mean intakes of total vegetables; total fruit; total dairy; and total meat, poultry, and seafood per day by age, 2003-2004 and 2013-2014

Age Group (years)	Food Patterns Group	WWEIA, NHANES	
		2003-2004	2013-2014
2-5	Total Vegetables (cup eq.)	0.8	0.6*
	Total Fruit (cup eq.)	1.5	1.3
	Total Dairy (cup eq.)	2.4	2.0
	Total Meat, Poultry, & Seafood (oz. eq.)	2.5	2.1
6-11	Total Vegetables (cup eq.)	1.0	0.9
	Total Fruit (cup eq.)	1.0	1.1
	Total Dairy (cup eq.)	2.4	2.2
	Total Meat, Poultry, & Seafood (oz. eq.)	3.2	3.0
12-19	Total Vegetables (cup eq.)	1.3	1.1
	Total Fruit (cup eq.)	1.0	0.8
	Total Dairy (cup eq.)	2.2	2.0
	Total Meat, Poultry, & Seafood (oz. eq.)	4.3	4.4
20+	Total Vegetables (cup eq.)	1.6	1.5*
	Total Fruit (cup eq.)	1.0	0.9
	Total Dairy (cup eq.)	1.6	1.6
	Total Meat, Poultry, & Seafood (oz. eq.)	4.8	4.9
All	Total Vegetables (cup eq.)	1.5	1.4*
	Total Fruit (cup eq.)	1.0	0.9
	Total Dairy (cup eq.)	1.8	1.7
	Total Meat, Poultry, & Seafood (oz. eq.)	4.5	4.5

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

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

What are the implications of the study?

From 2003-2004 to 2013-2014:

- Americans reduced their added sugars intake. The main reason for this decrease was due to the decrease in soda consumption [6]. Other reasons for the decrease include the increased availability of beverages and snacks that are relatively low in caloric sweeteners or contain sugar substitutes, thereby enabling Americans to choose food and beverages that are low in added sugars or sugar-free.
- Americans reduced their solid fats intake and increased their oils intake. These changes could be partly be due to the replacement of hydrogenated oils with unhydrogenated vegetable oils in snacks, fried products and in margarine; availability of low fat dairy products; and the increased availability of lean meat options.
- Although Americans increased their whole grains consumption, it is still far below the Dietary Guidelines recommendation.
- 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

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

Added sugars are defined as syrups and other caloric sweeteners such as sugars that are added to foods as ingredients during food 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.

Oils include all unhydrogenated vegetable oils, except tropical oils such as palm oil, palm kernel oil, and coconut oil; and fats that are naturally present in nuts, seeds, avocado, olives, and seafood.

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; palm oil; and other tropical oils.

Units of measurements: Details on the units of measurements such as ounce, cup, and gram equivalents for specific foods, see reference #2.

Nutrient dense: Indicates the nutrients and other beneficial substances in a food have not been “diluted” by the addition of calories from added sugars, solid fats, or refined starches to food, or by the solid fats naturally present in the food [1].

Data sources

(1) What We Eat in America, NHANES 2003-2004 and 2013-2014, day 1 dietary data were used to estimate Food Patterns equivalents intakes. Study sample included 8272 and 8066 individuals, aged 2 years and over (excluding breast-fed children) with complete and reliable intake records, in the 2003-2004 and 2013-2014 surveys, respectively. Sample weights were applied in the analyses to produce nationally representative estimates, (2) Food Patterns Equivalents Database 2013-14, and (3) MyPyramid equivalents Database 2.0 for USDA Survey Foods 2003-2004.

References

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About the authors

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

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