



Food Surveys Research Group  
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# Sweet Foods Consumption by Adults in the U.S.

## What We Eat in America, NHANES 2015-2018

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### Highlights

- ▶ Nearly 2 in 3 U.S. adults (61%) ate sweet foods on the intake day. This percentage was higher among adults age  $\geq 60$  years than among younger adults.
- ▶ Prevalence of consuming sweet foods was higher among non-Hispanic (NH) Whites than NH Blacks and NH Asians. It was also higher among adults in the middle and highest income groups than in the lowest income group.
- ▶ Sweet bakery products were the type of sweet foods most commonly consumed.
- ▶ Adults who ate sweet foods had a higher daily energy intake than those who did not.
- ▶ Sweet foods provided 16% of reporters' daily energy intake, 36% of added sugars, 22% of saturated fats, and  $\leq 15\%$  of all vitamins and minerals studied.
- ▶ The daily energy contributions of sweet foods to intakes of those who reported them ranged from 161 kilocalories from candy to 372 kilocalories from sweet bakery products.

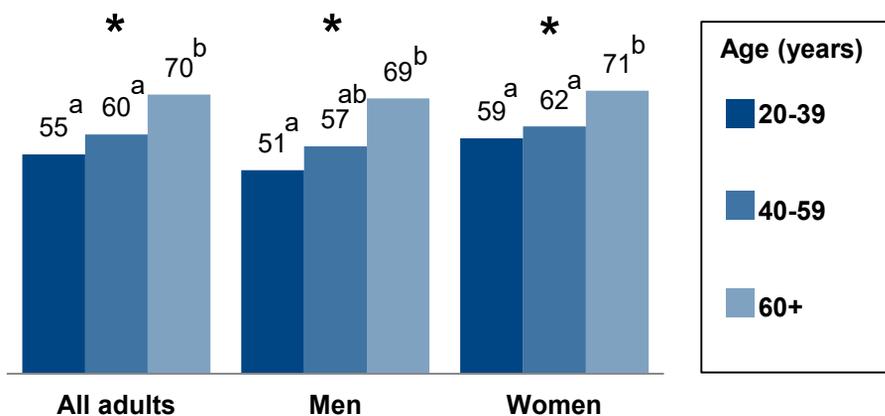
For over 40 years, Federal dietary guidance has recommended limiting intake of sweets (1). However, sweet foods and beverages remain major sources of calories, added sugars, and saturated fat for adults in the U.S. (2-4) while contributing less to intakes of other nutrients (4-7).

This report updates knowledge about intake of sweet foods by adults age  $\geq 20$  years in the U.S. using the most recent data from What We Eat in America (WWEIA), NHANES 2015-2018. In this analysis, sweet foods include snack/meal bars, sweet bakery products, candy, and other desserts and exclude fruit and all types of beverages (see "Definitions" on page 8).

### Who consumed sweet foods?

On the intake day, 61% of all adults consumed sweet foods, and percentages did not differ between men (58%) and women (64%; *data not shown*). As figure 1 illustrates, a significantly larger percentage of adults in the oldest age group than in the younger groups reported a sweet food. The same relationship was observed by sex, though among men only the youngest and oldest groups differed.

**Figure 1. Percentage who consumed sweet foods, by sex and age, 2015-2018**



\*Positive linear trend ( $p < 0.001$ ) by age group.

<sup>a,b</sup>Within sex, estimates with different letters are significantly different ( $p < 0.001$ ).

SOURCE: WWEIA, NHANES 2015-2018, day 1, adults  $\geq 20$  years.



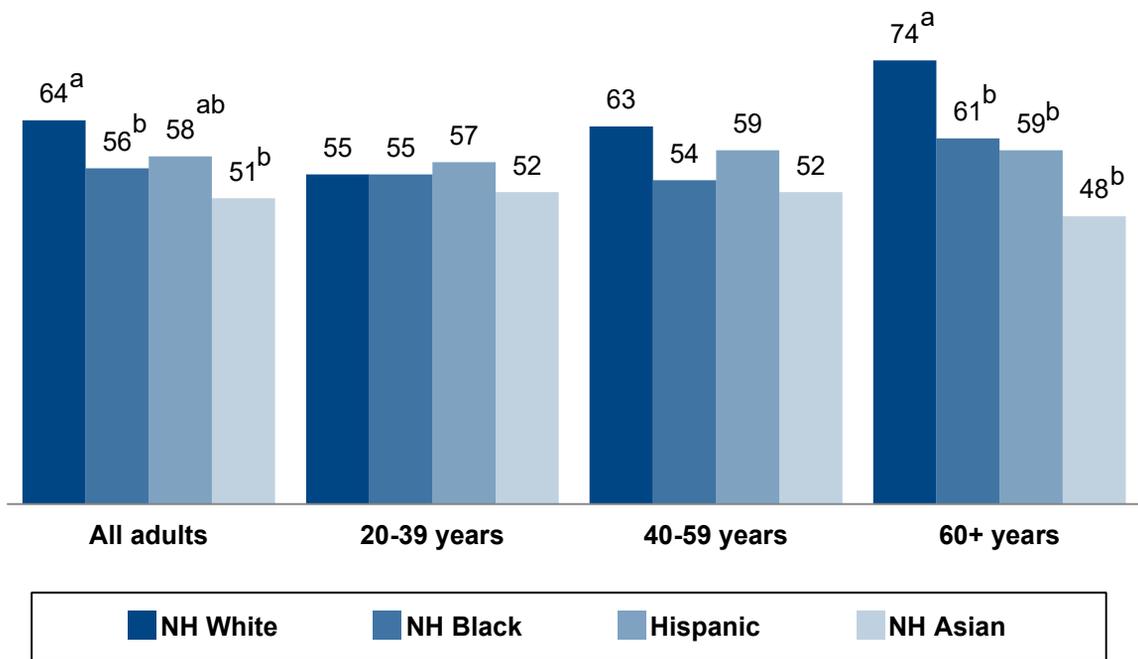
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## Did the percentage of adults who consumed sweet foods differ by race and Hispanic origin?

Among adults of all ages, the percentage who consumed sweet foods was higher for non-Hispanic (NH) White adults than for NH Black or NH Asian adults (figure 2;  $p < 0.001$ ). These overall findings reflect the findings in the oldest age group. In contrast, no differences by race/Hispanic origin were found among individuals age 20-39 years and 40-59 years.

**Figure 2. Percentage of adults who consumed sweet foods, by age and race/Hispanic origin<sup>1</sup>, 2015-2018**



<sup>1</sup>Excludes non-Hispanic individuals who were multi-racial or of a racial group other than those listed; see "Data source" on page 7.

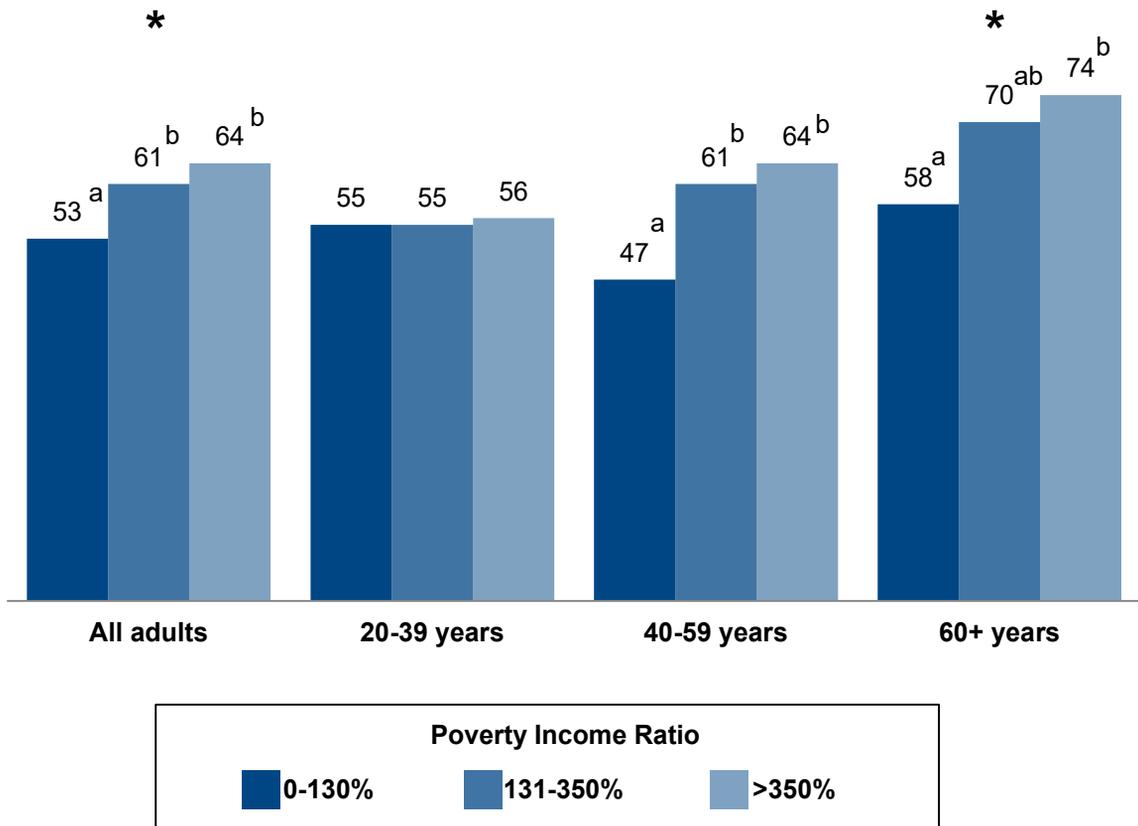
<sup>a,b</sup>Within age group, estimates with different letters are significantly different ( $p < 0.001$ ).

SOURCE: WWEIA, NHANES 2015-2018, day 1, adults  $\geq 20$  years.

### Did the percentage of adults who consumed sweet foods differ by income?

As shown in figure 3, a significantly larger percentage of adults in the middle and highest family income groups consumed sweet foods as compared to those in the lowest income group ( $p < 0.001$ ). These findings reflect differences in sweet foods consumption between the lowest family income group and one or more of the higher family income groups among adults  $\geq 40$  years.

**Figure 3. Percentage of adults who consumed sweet foods, by age and family income (Poverty Income Ratio)<sup>1</sup>, 2015-2018**



<sup>1</sup>Ratio of family income to poverty level expressed as a percentage. See "Definitions" section on page 8.

\*Positive linear trend ( $p < 0.001$ ) by age group.

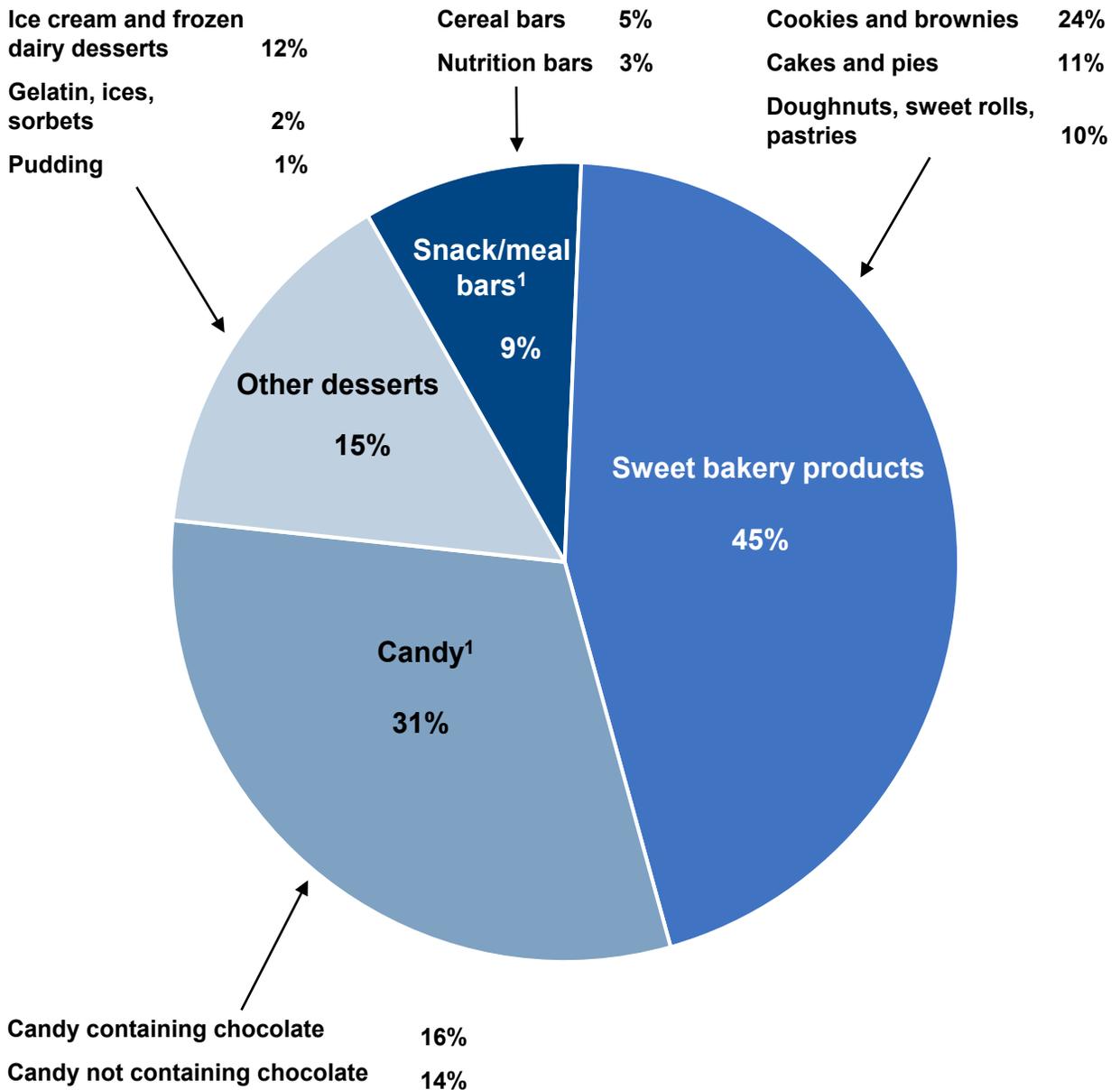
<sup>a,b</sup>Within age group, estimates with different letters are significantly different from one another ( $p < 0.001$ ).

SOURCE: WWEIA, NHANES 2015-2018.

## What types of sweet foods did adults eat?

Considering all instances of sweet foods eaten by adults, slightly fewer than one-half (45%) were sweet bakery products, and nearly one-third were candy (31%), as shown in figure 3. Looking at the WWEIA Food Categories (*shown outside the pie chart below; see “Definitions” on page 8*) that are included in those food groups, cookies and brownies were the most commonly reported (24%), followed by candy containing chocolate (16%).

Figure 4: Distribution of sweet foods by type among adults, 2015-2018



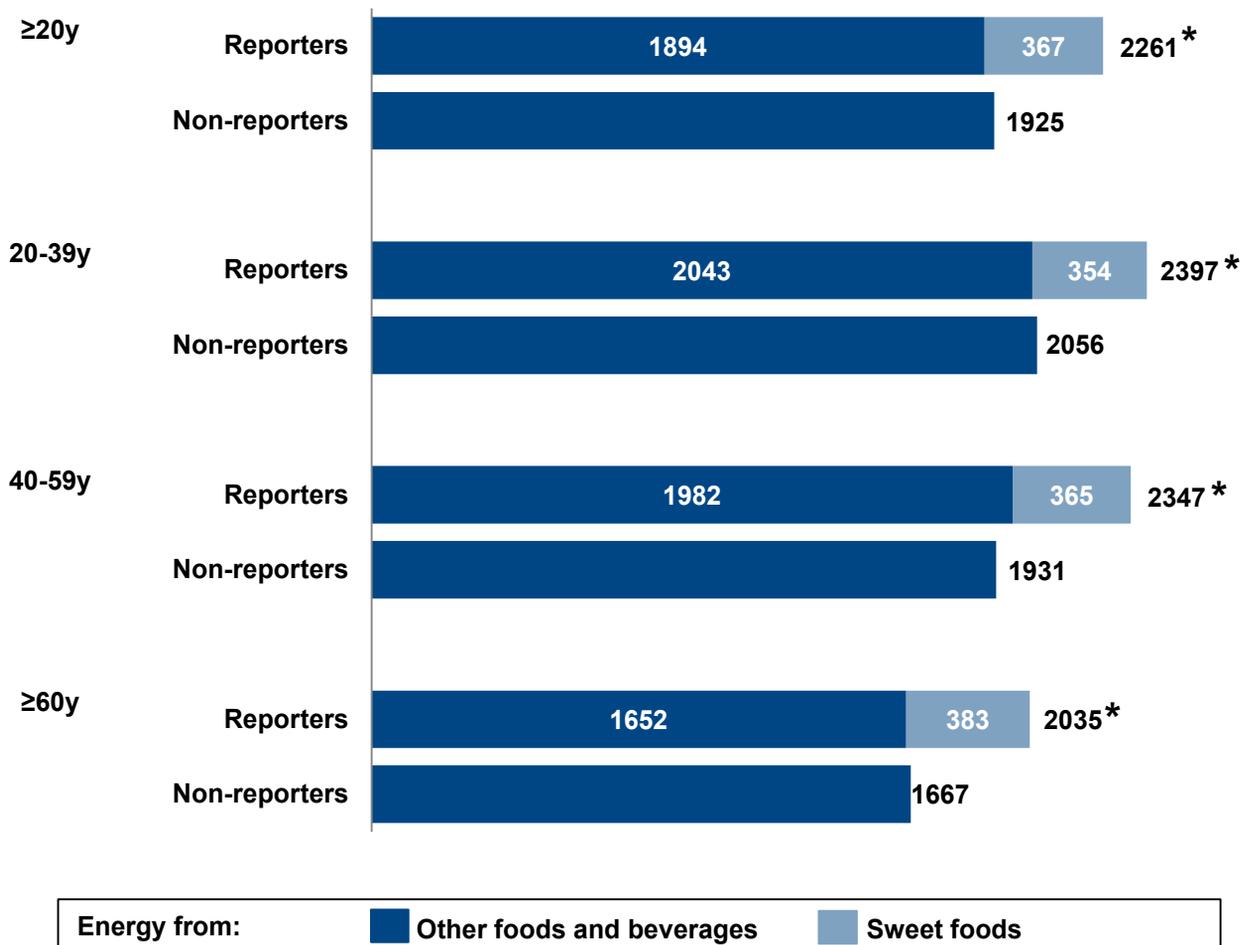
<sup>1</sup>Percentages of sweet foods in WWEIA Food Categories do not sum to percentage for the indicated food group due to rounding. SOURCE: WWEIA, NHANES 2015-2018, day 1, adults ≥20 years.

## Was total daily energy intake higher for sweet foods reporters than for non-reporters?

In all age groups, total energy was higher on the intake day for sweet foods reporters than for non-reporters ( $p < 0.001$ ; see “Definitions” on page 8). Moreover, the amount of energy provided by sweet foods for reporters more or less accounted for the difference in energy intake between reporters and non-reporters. For example, for adults age 20-39 years, the difference in total energy intake between reporters and non-reporters was 341 kilocalories, and reporters in that age group obtained 354 kilocalories from sweet foods.

There was little variation by age group in the amount of energy that sweet foods contributed to daily intake of reporters (354 to 383 kilocalories). However, sweet foods accounted for a significantly higher percentage of total energy among adults 60+ years (19%) than among those 20-39 years (15%) and 40-59 years (16%;  $p < 0.001$ ).

Figure 5. Energy intake (kilocalories) among adults by sweet foods reporting status, 2015-2018



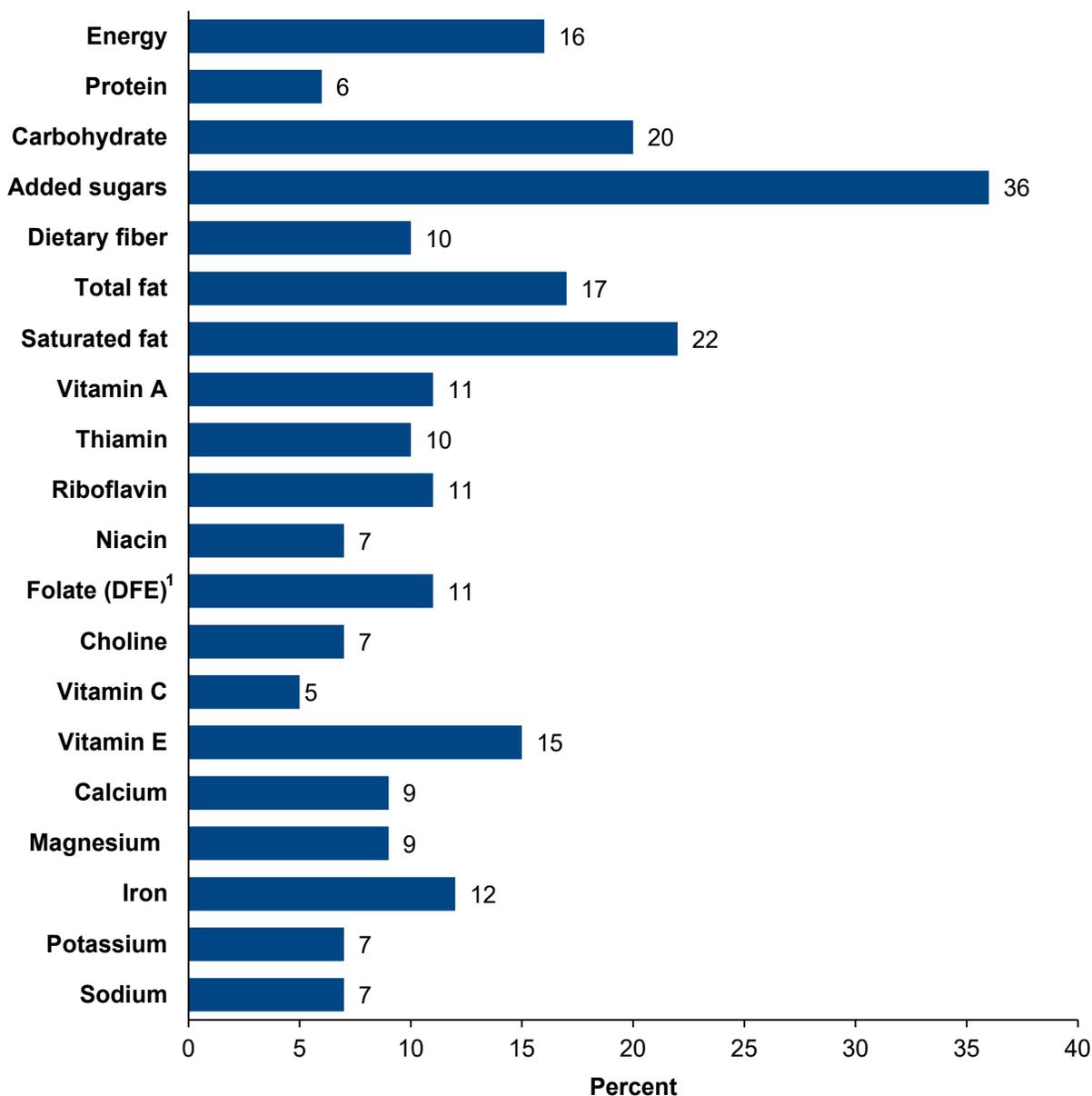
\*Total daily energy intake is significantly higher for sweet foods reporters than for non-reporters ( $p < 0.001$ ).

SOURCE: WWEIA, NHANES 2015-2018, day 1, adults ≥ 20 years.

## How much did sweet foods contribute to reporters' total daily intakes of energy and selected nutrients?

Figure 6 illustrates sweet foods' contributions to intakes of selected nutrients relative to their contribution to energy intake. For adult reporters, sweet foods provided 16% of total energy, 36% of added sugars, and 22% of saturated fats, but only 15% or less of all vitamins and minerals examined.

**Figure 6. Percentage of total daily intakes of energy and selected nutrients contributed by sweet foods among adults who consumed them, 2015-2018**



<sup>1</sup>DFE = dietary folate equivalents.

SOURCE: WWEIA, NHANES 2015-2018, day 1, adults ≥20 years.

## How much energy did reporters obtain from the different types of sweet foods?

The mean daily energy contributions of sweet foods to intakes of those who reported them ranged from 161 kilocalories from candy to 372 kilocalories from sweet bakery products, as shown in table 1. The table also gives examples of each type of sweet food and their energy content.

**Table 1. Sweet foods: Mean energy contribution per reporter and examples, by sweet food type, 2015-2018**

Regarding the type of sweet food specified in the left-hand column...		
Type of sweet food <sup>1</sup>	Mean energy contribution per reporter of that type of sweet food (kilocalories)	Example of that type of sweet food; portion size (energy content)
Snack/meal bars	206	Cereal/granola bar; 1 bar (203 kilocalories)
		Nutrition/meal replacement bar; 1 bar (145 kilocalories)
Sweet bakery products	372	Chocolate cake with icing; 1 regular cupcake (292 kilocalories)
		Chocolate chip cookie; 2 medium cookies (295 kilocalories)
		Breakfast tart; 1 package = 2 tarts (416 kilocalories)
Candy	161	Milk chocolate bar, plain; 3 “fun size” bars (177 kilocalories)
		Hard candy; 5 pieces (118 kilocalories)
Other desserts	280	Ice cream, vanilla; 1 cup (279 kilocalories)
		Rice pudding; 1 cup (281 kilocalories)
		Gelatin dessert; 1 cup (144 kilocalories)

SOURCE: WWEIA, NHANES 2015-2018, day 1, adults ≥20 years.

## Definitions

**Poverty Income Ratio (PIR):** The ratio of family income to poverty level expressed as a percentage. The poverty measure used in calculating the PIR was the Department of Health and Human Services' poverty guidelines (8).

**Reporter/non-reporter:** In general, anyone who ate a sweet food at least once on the intake day was considered a “reporter,” whereas anyone who did not was considered a “non-reporter.” In all, 5,758 adults were classified as sweet food reporters (2,682 males and 3,076 females), and 4,001 were classified as non-reporters (2,040 males and 1,961 females). Classification as a reporter or non-reporter for this analysis has no implications as to habitual intake.

**Sweet foods, total:** Included the following food groups, which are based on WWEIA Food Categories, and excluded fruit and all types of beverages:

- **Snack/meal bars:** Cereal bars; nutrition bars.
- **Sweet bakery products:** Cakes and pies; cookies and brownies; doughnuts, sweet rolls, pastries.
- **Candy:** Candy containing chocolate; candy not containing chocolate.
- **Other desserts:** Ice cream and frozen dairy desserts: pudding; gelatins, ices, sorbets.

**WWEIA Food Categories:** A scheme applied to classify each food and beverage reported in WWEIA, NHANES into one of approximately 160 mutually exclusive categories ([www.ars.usda.gov/Services/docs.htm?docid=23429](http://www.ars.usda.gov/Services/docs.htm?docid=23429)). If two or more sweet foods were linked as having been consumed together, all linked items were classified together into the most appropriate category. For example, if chocolate chips were reported as a topping on ice cream, both the chocolate chips and the ice cream were assigned to the category “ice cream and frozen dairy desserts,” and the chocolate chips were not included in the category “candy containing chocolate.” Similarly, items that would not be classified as sweet foods on their own were classified as such if they were consumed as part of a group of linked items in which the predominant item was a sweet food, e.g., whipped cream added to pie was classified in the category “cakes and pies.”

## Data source

Estimates in this data brief are based on one day of data from WWEIA, NHANES 2015-2018 (9). Day 1 dietary data were collected in person using the 5-step USDA Automated Multiple-Pass Method for the 24-hour recall (10). A total of 9,759 individuals age  $\geq 20$  years (4,722 males and 5,037 females) provided complete and reliable dietary intake data. Only in the race-specific analysis (*see page 3*), non-Hispanic individuals who were multi-racial or of a racial group other than those listed (418 adults, of whom 234 were sweet foods reporters) were excluded. Sample weights were applied in all analyses to produce nationally representative estimates. Intakes of energy and nutrients were calculated using the 2015-2016 and 2017-2018 versions of USDA's Food and Nutrient Database for Dietary Studies (11). Intake of added sugars was estimated using the 2015-2016 and 2017-2018 versions of the Food Patterns Equivalents Database (FPED; 12).

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