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Sweet Foods Consumption by Children in the U.S

What We Eat in America, NHANES 2015-2018

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Highlights

- ▶ On the intake day, 70% of children age 2-19 years consumed at least one sweet food, with a lower percentage for those 12-19 years than for younger children.
- ▶ A greater percentage of children in the highest income group consumed sweet foods than in the lowest and middle income groups.
- ▶ Sweet bakery products and candy were the most commonly consumed types of sweet foods
- ▶ Children age 6-11 and 12-19 years who consumed sweet foods on the intake day had higher daily energy intakes than those who did not.
- ▶ Sweet foods accounted for 18% of reporters' daily energy intake, 40% of added sugars, and 23% of saturated fats.
- ▶ Among reporters who consumed a specific type of sweet food, the mean energy contribution ranged from 161 kilocalories for candy to 348 kilocalories for sweet bakery products.

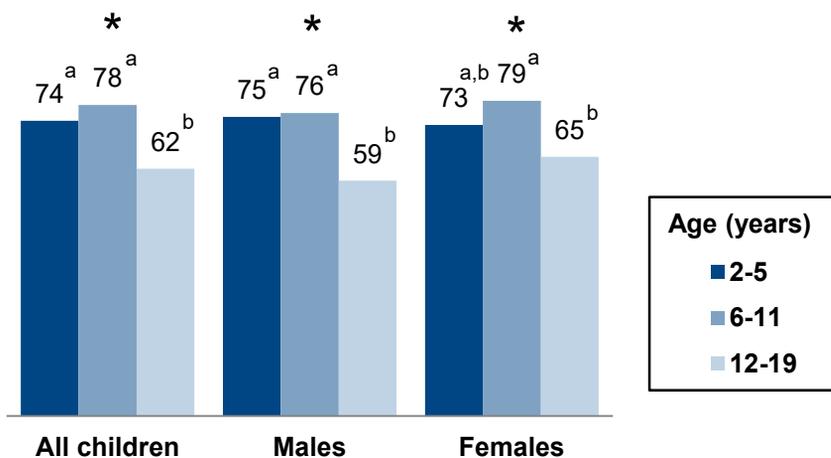
Sweet foods (e.g., sweet bakery products, candy, etc.) are typically a major source of energy, added sugars, and saturated fats among children while providing limited amounts of essential nutrients (1-3). The *2015-2020 Dietary Guidelines for Americans* recommendations for healthy eating patterns include limiting added sugars and saturated fats and emphasizing nutrient dense foods (4).

This report presents results on consumption of sweet foods by children age 2-19 years from What We Eat in America (WWEIA), NHANES 2015-2018. In this analysis, sweet foods included snack/meal bars, sweet bakery products, candy, and other desserts and excluded fruit and all types of beverages (see "Definitions" on page 7).

What percentage of children consumed sweet foods?

On the intake day, 70% of children age 2-19 years consumed at least one sweet food (*data not shown*). Consumption was lower among children 12-19 years than younger children. There was no difference in consumption by sex for any age group.

Figure 1. Percentage of children who consumed sweet foods, 2015-2018



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

^{a,b}Within sex, percentages with different letters are significantly different ($p < 0.001$)

SOURCE: WWEIA, NHANES 2015-2018, day 1, children 2-19 years of age.



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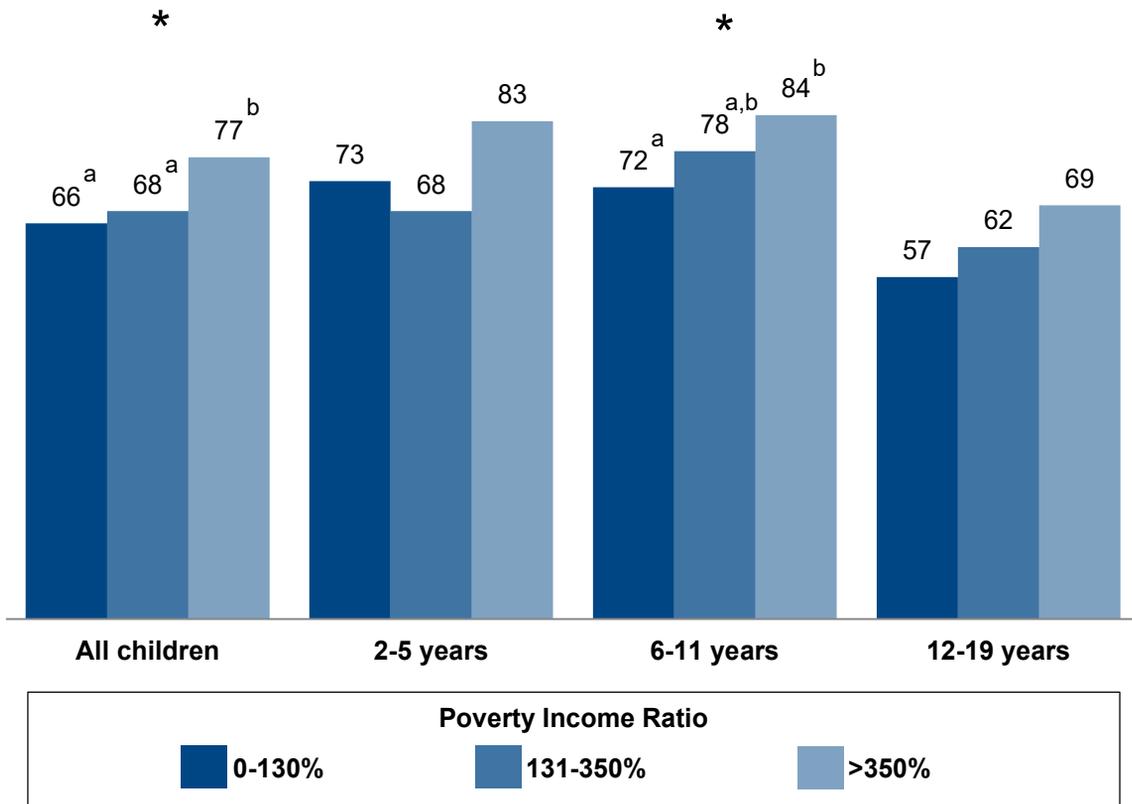
www.ars.usda.gov/nea/bhnrc/fsrg

Were there differences by family income in sweet foods consumption?

Among all children, a greater percentage in the highest income group (77%) consumed sweet foods than in the lowest and middle income groups (66% and 68%, respectively). Among those 6-11 years, a greater percentage in the highest income group consumed sweet foods compared to the lowest income group.

Sweet foods consumption by race/Hispanic origin was also investigated. There were no differences in sweet foods consumption by race/Hispanic origin among children (*data not shown*).

Figure 2. Percentage of children who consumed sweet foods by family income (Poverty Income Ratio)¹, 2015-2018



¹ Ratio of family income to poverty level expressed as a percentage. See “Definitions” section on page 7.

*Positive linear trend ($p < 0.001$) by family income.

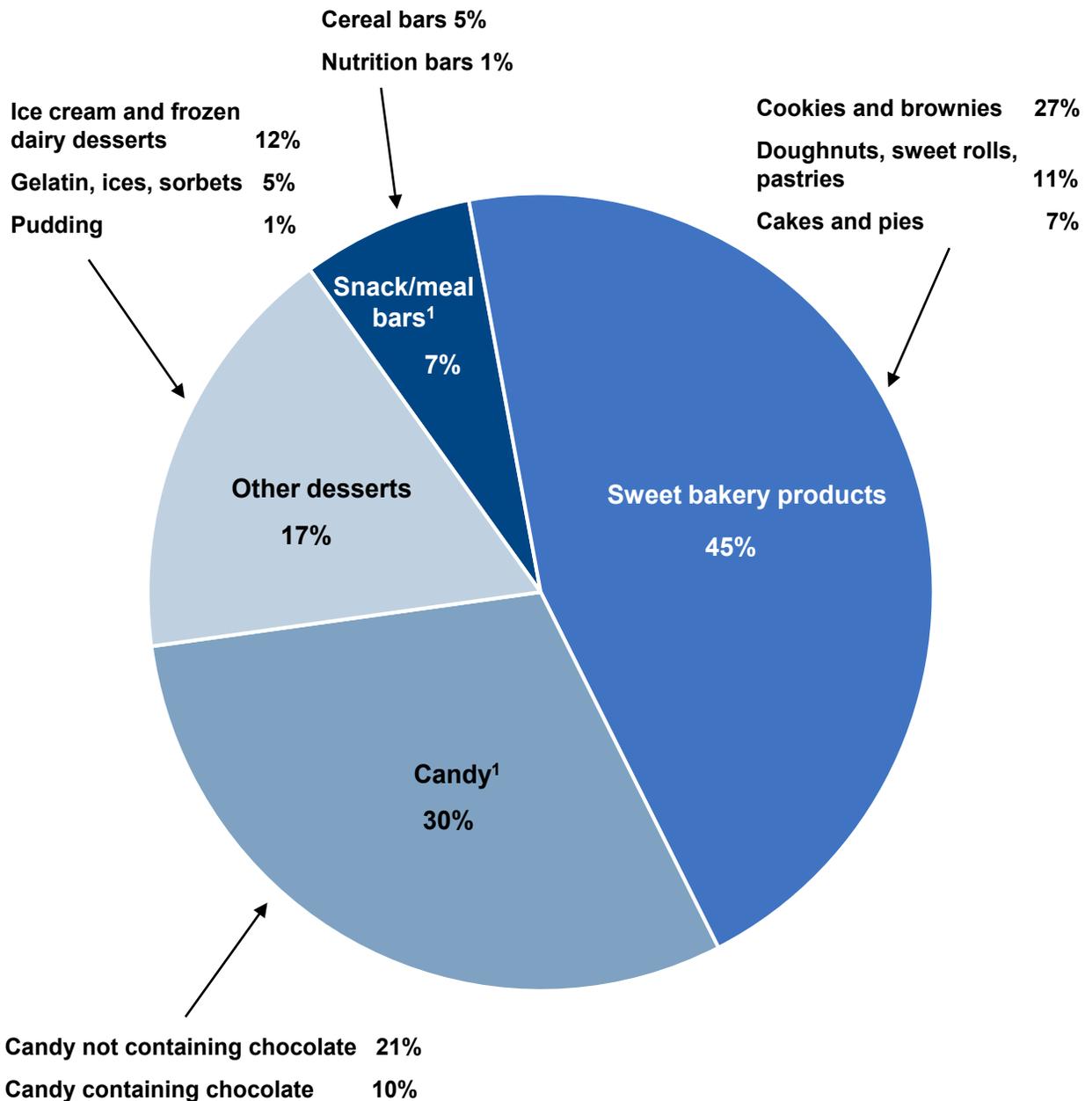
^{ab} Within age group, estimates with different letters are significantly different ($p < 0.001$).

SOURCE: WWEIA, NHANES 2015-2018, day 1, children 2-19 years of age.

What types of sweet foods did children eat?

The most common types of sweet foods consumed were sweet bakery products (45%) and candy (30%). Cookies and brownies was the most commonly consumed WWEIA food category of sweet bakery products (*shown on exterior of figure; see “Definitions” on page 7*), and candy not containing chocolate was the most commonly consumed category of candy.

Figure 3. Distribution of sweet foods by type among children, 2015-2018



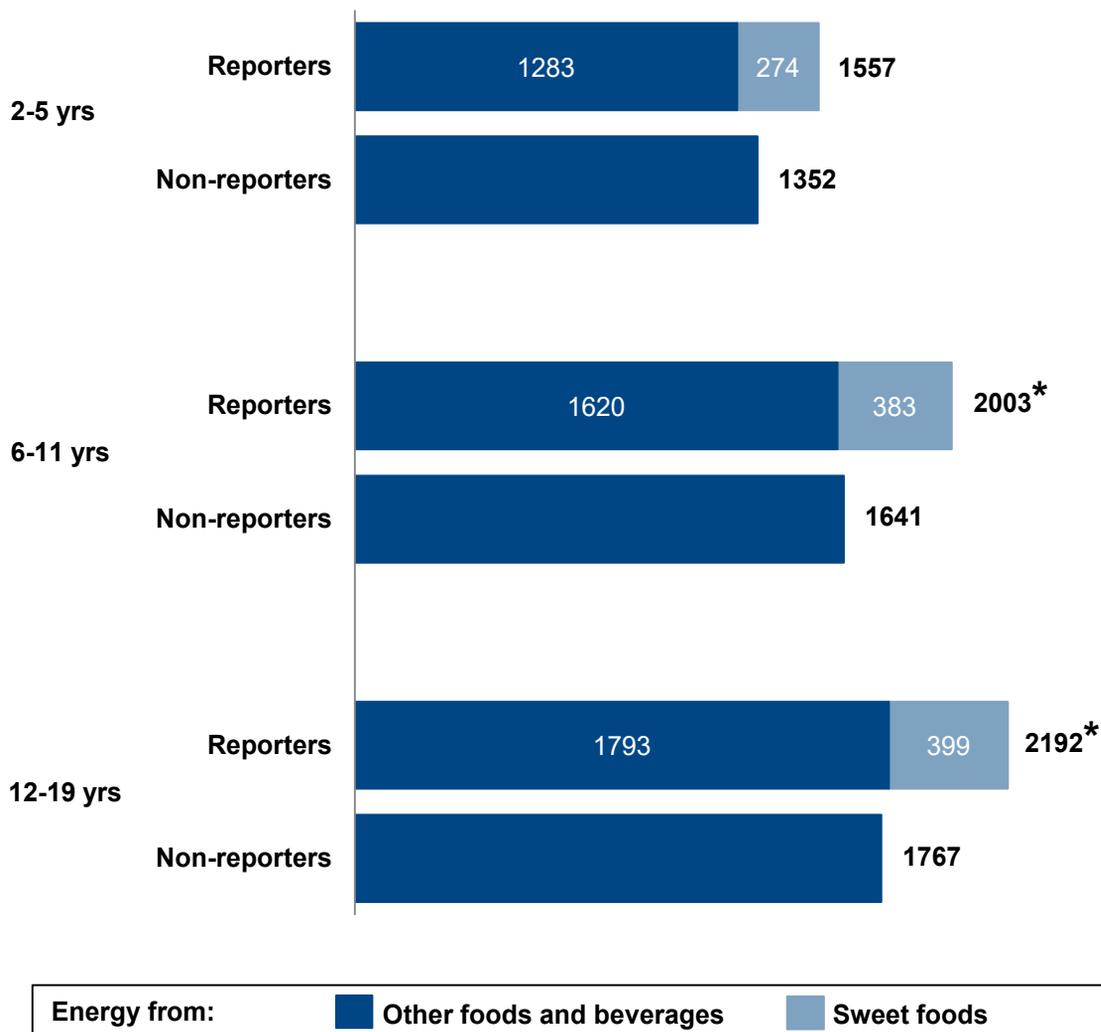
¹Percentages of sweet foods in WWEIA Food Categories do not sum to percentage for the indicated food group due to rounding. SOURCE: WWEIA, NHANES 2015-2018, day 1, children 2-19 years of age.

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

Overall, among children 2-19 years, total daily energy intake was higher for those who reported sweet foods than for those who did not ($p < 0.001$; data not shown). Energy intake was higher for children age 6-11 years and 12-19 years who reported sweet foods compared to non-reporters of sweet foods. In the youngest age group, energy intake did not differ by sweet foods reporting status.

Although the amount of daily energy contributed by sweet foods among reporters ranged from 274 to 399 kilocalories, the percentage contribution of sweet foods to total daily energy intake was 18-19% for all age groups. There were no significant differences between age groups in percentage of daily energy intake from sweet foods.

Figure 4. Energy intake (kilocalories) by sweet foods reporting status among children, 2015-2018



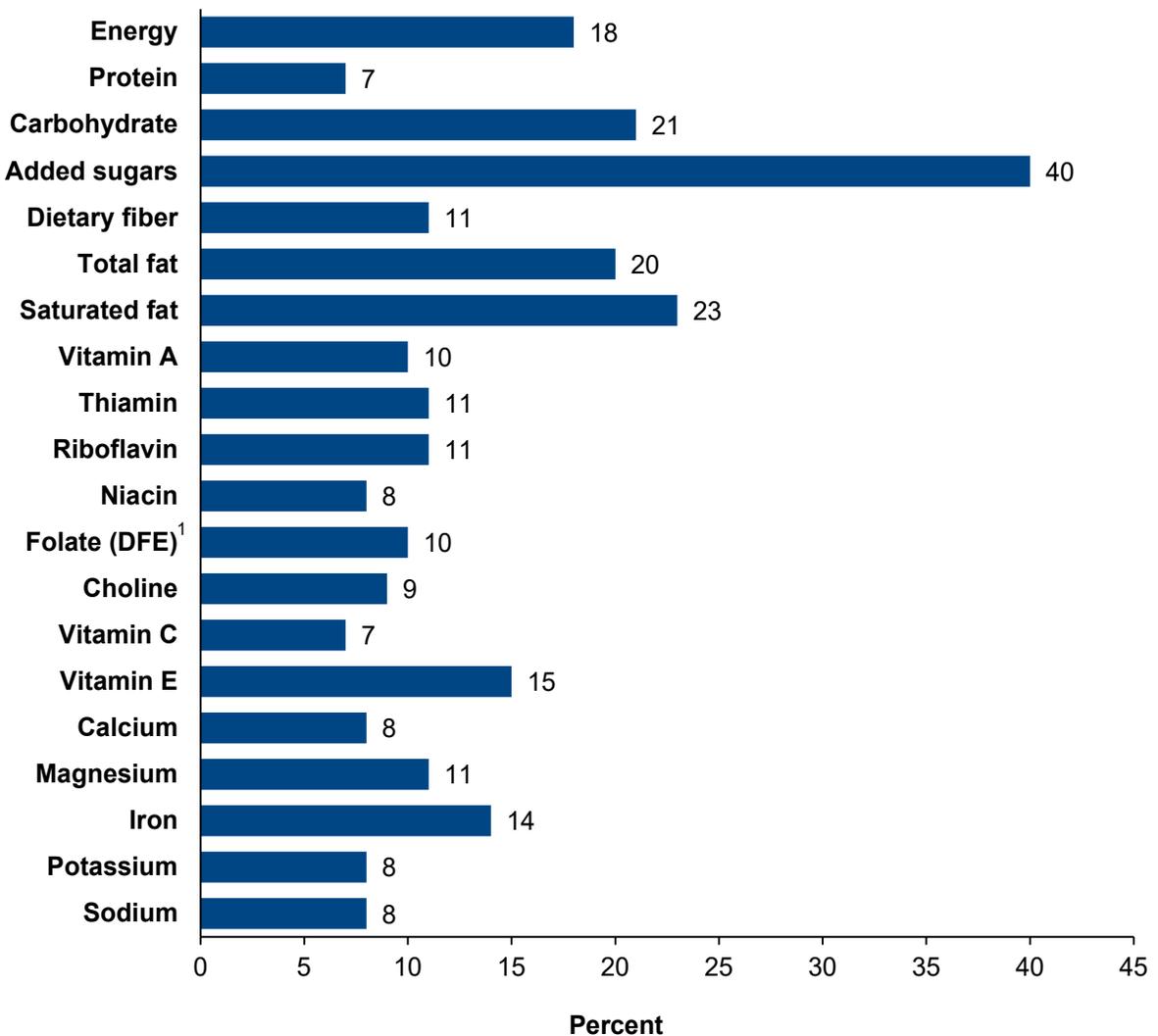
*Total daily energy intake is significantly higher for sweet foods reporters than for non-reporters ($p < 0.001$).

SOURCE: WWEIA, NHANES 2015-2018, day 1, children 2-19 years of age.

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

Among reporters age 2-19 years, sweet foods contributed 18% of daily energy. The contribution to added sugars was much higher (40% of daily intake) and the contribution to daily intake of saturated fat was 23%. In contrast, contributions by sweet foods to total daily intakes of vitamins and minerals ranged from 7% of vitamin C to 15% of vitamin E.

Figure 5. Percentage of daily intakes of energy and selected nutrients contributed by sweet foods among children who reported them, 2015-2018



¹Dietary Folate Equivalents

SOURCE: WWFIA, NHANES 2015-2018, day 1, children 2-19 years of age..

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

Among children who reported sweet foods, the mean energy contribution by type of sweet food ranged from 161 kilocalories for candy to 348 kilocalories for sweet bakery products. Examples of each type of sweet food, along with a typical portion size and its energy content, are provided.

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	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	170	Cereal/granola bar; 1 bar (203 kilocalories)
Sweet bakery products	348	Chocolate cake with icing; 1 regular cupcake (292 kilocalories)
		Chocolate chip cookie; 2 medium cookies (295 kilocalories)
		Cinnamon bun with frosting; 1 medium bun (407 kilocalories)
Candy	161	Milk chocolate bar, plain; 3 "fun size" bars (177 kilocalories)
		Fruit leather and fruit snacks candy; 1 pouch (95 kilocalories)
Other desserts	243	Ice cream, vanilla; 1 cup (279 kilocalories)
		Chocolate pudding; 1 snack size container (156 kilocalories)
		Popsicle; 1 double stick popsicle (79 kilocalories)

SOURCE: WWEIA, NHANES 2015-2018, day 1, children 2-19 years of age.

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 (5).

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, 3,622 children were classified as sweet food reporters (1,771 males and 1,851 females), and 1,659 were classified as non-reporters (865 males and 794 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 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). 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 were based on one day of data from WWEIA, NHANES 2015-2018 (6). Day 1 dietary data were collected in person using the 5-step USDA Automated Multiple-Pass Method for the 24-hour recall (7). A total of 5,281 children age 2-19 years (2,636 males and 2,645 females) provided complete and reliable dietary intake data. 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 (8). Intake of added sugars was estimated using the 2015-2016 and 2017-2018 versions of USDA's Food Patterns Equivalents Database (9).

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