



Intake of Fruit by Children and Adolescents

What We Eat in America, NHANES 2017-2018

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Highlights

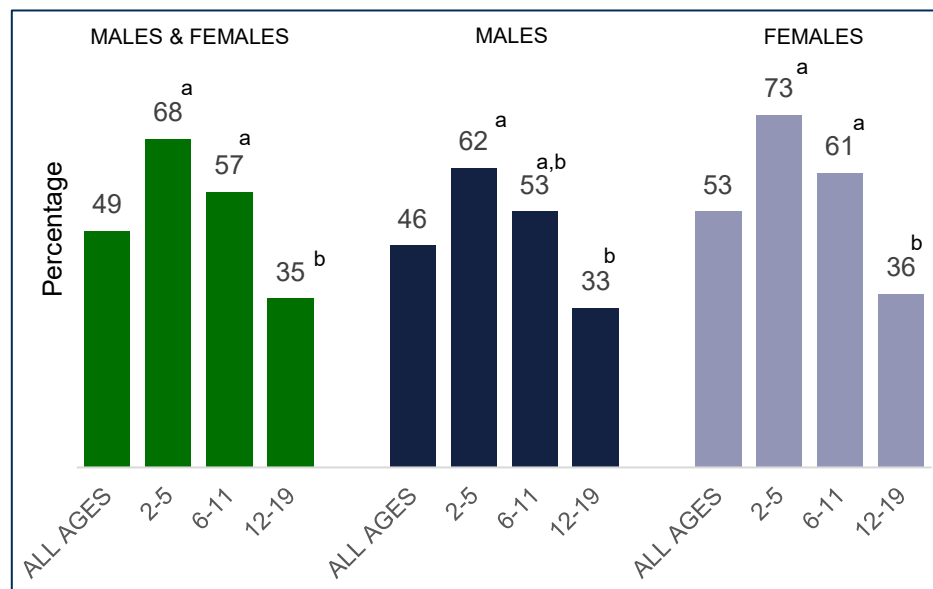
- About half of those 2-19 years of age reported fruit on a given day.
- Among children and adolescents, fruit intake decreased with age. Around one-third of adolescents consumed fruit compared to almost two-thirds of younger children.
- Compared to Non-Hispanic blacks, fruit intake was higher among other race/ethnic groups.
- Fruit intake increased with income.
- The most common eating occasion that included fruit was snacks, followed by lunch, then breakfast.
- Apples, bananas, oranges, grapes and strawberries were the most reported fruits among children and adolescents.

Dietary guidance recommends consuming a variety of fruit and vegetables (FV) for the wide range of nutrients and bioactive components they provide¹. Variety is associated with greater FV intake². This report presents results on intake of fruit by children and adolescents in What We Eat in America, NHANES 2017-2018. In this analysis, *fruit* was discrete fruits including fresh, frozen, canned and dried fruits as reported by survey respondents, and did not include 100% fruit juices, fruit beverages, fruit in desserts or other foods.

What percentage of children and adolescents report consuming discrete fruit on a given day?

On a given day, fruit was reported by around half of children and adolescents. Intake by adolescents was significantly lower than children 2-11 years of age ($P < 0.001$). Higher percentages of females reported fruit than males, particularly among younger ages though differences were not significant. Fruit consumption decreased substantially by ages 12-19 years and was reported by only about one-third of adolescent males and females.

Figure 1. Percentage of children and adolescents who report consuming discrete fruit on a given day by gender and age, What We Eat in America, NHANES 2017-2018



^{a,b} Percentages with different superscripts are significantly different, $P < 0.001$.

SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years



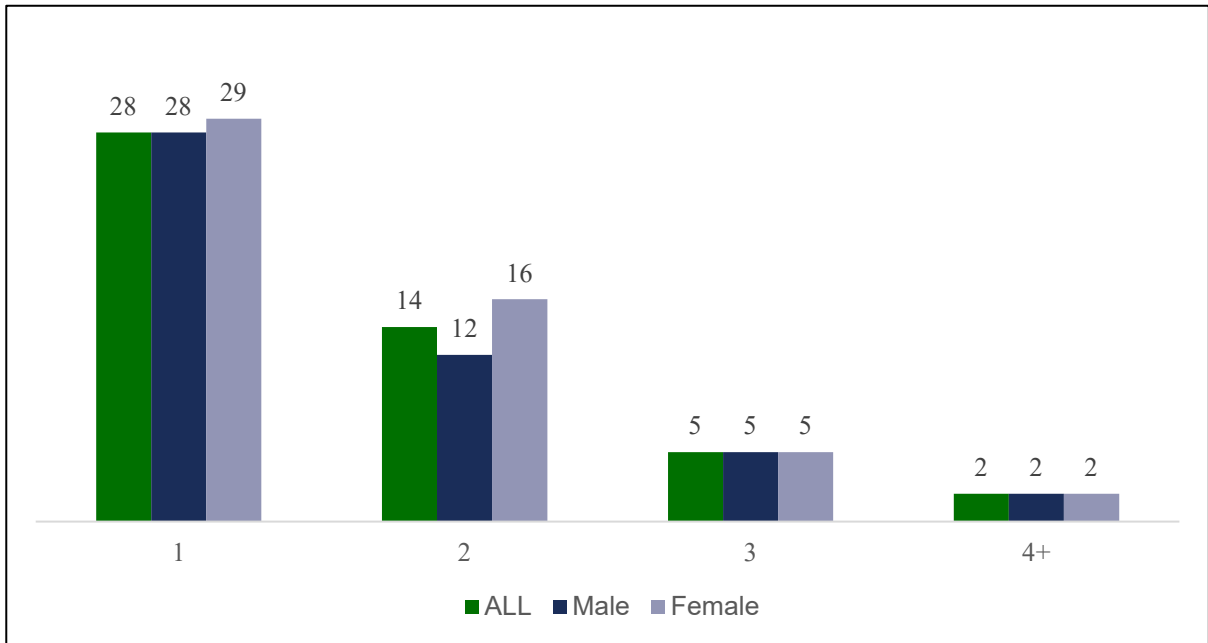
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How many different fruits do children and adolescents report on a given day?

Just under one-third of children and adolescents reported one fruit on a given day. About one-third of children 2-11 years of age had two or more different fruits on any given day, compared to about 10% of those 12-19 years of age. Percentages within age groups were similar among males and females (*data not shown*).

Figure 2. Distribution of the number of different discrete fruits among children and adolescents

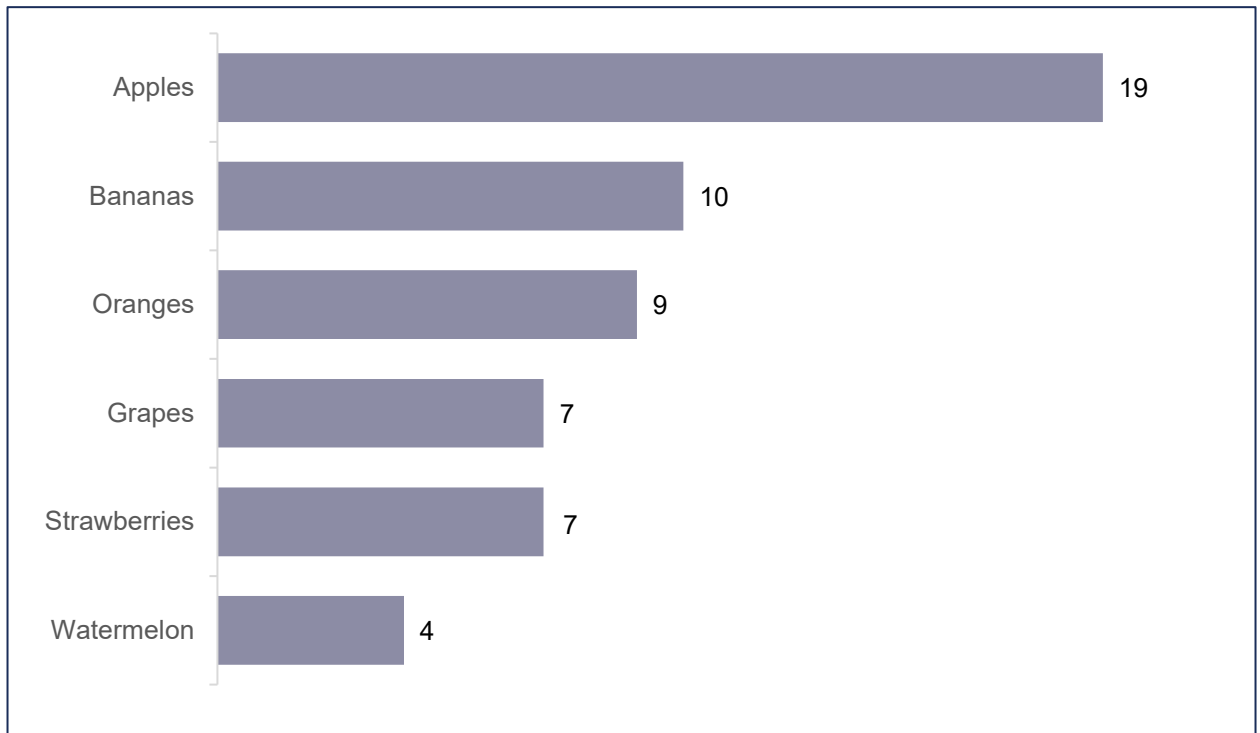


SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years

What fruits are reported most frequently by children and adolescents?

Apples were reported most frequently, followed by bananas, oranges, grapes and strawberries. Several fruits were reported by about 2% of children and adolescents, including pineapple, blueberries, peaches, cantaloupe, pears, and mixed fruit.

Figure 3. Percentages of children and adolescents reporting discrete fruit by kind on a given day

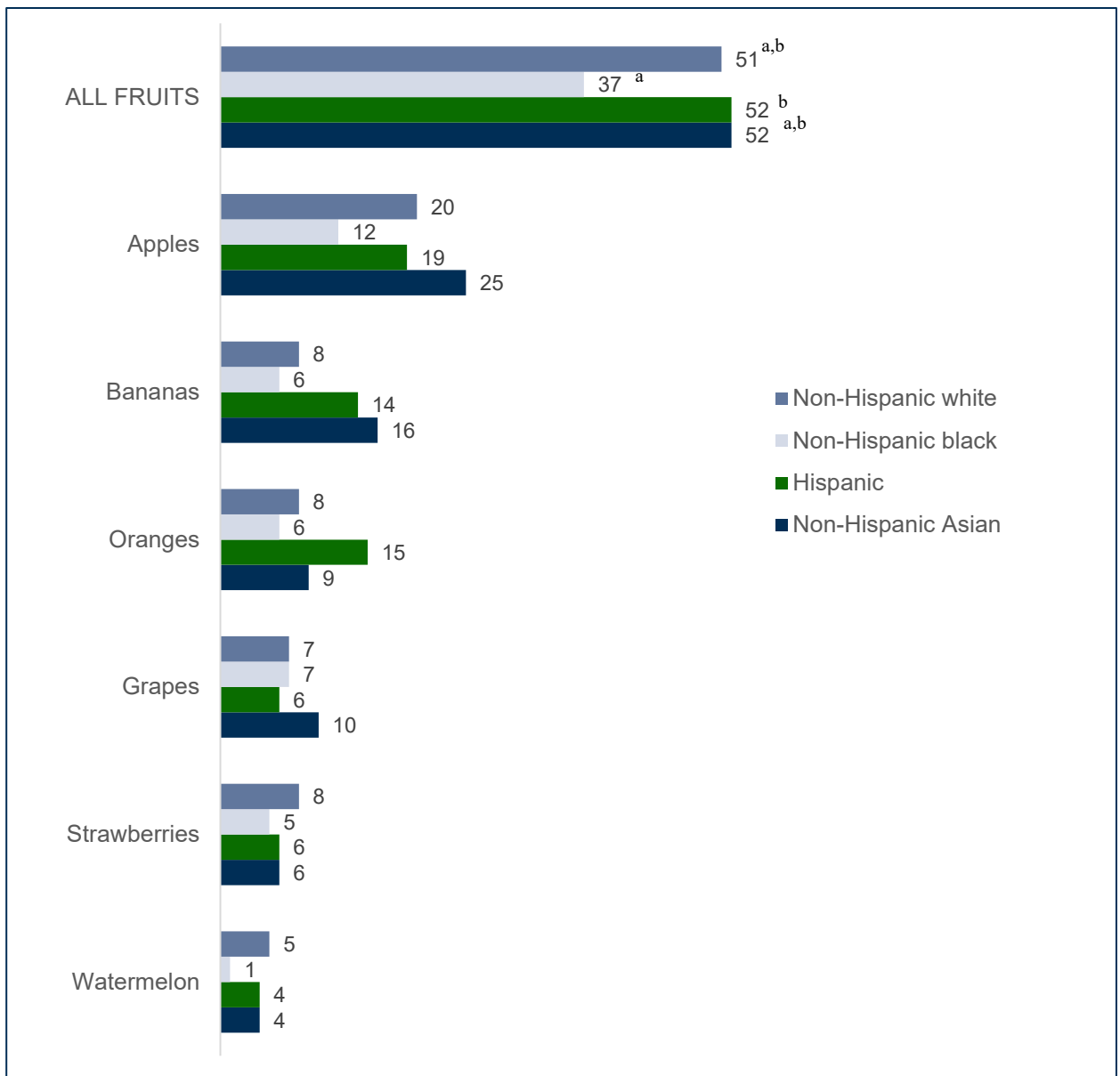


SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years

What is the consumption of fruit among children and adolescents by race/ethnicity?

Except for Non-Hispanic blacks, half of children and adolescents in each race/ethnic group reported fruit. Generally, percentages reporting different fruits were similar between race/ethnic groups. However, the overall lower percentage of Non-Hispanic black children reporting fruit was reflected by lower percentages reporting intake of some different fruits. Apples and bananas tended to be consumed by a higher percentage of Non-Hispanic Asians, whereas oranges and bananas were reported by more Hispanics.

Figure 4. Percentage of children and adolescents reporting discrete fruit by race/ethnicity



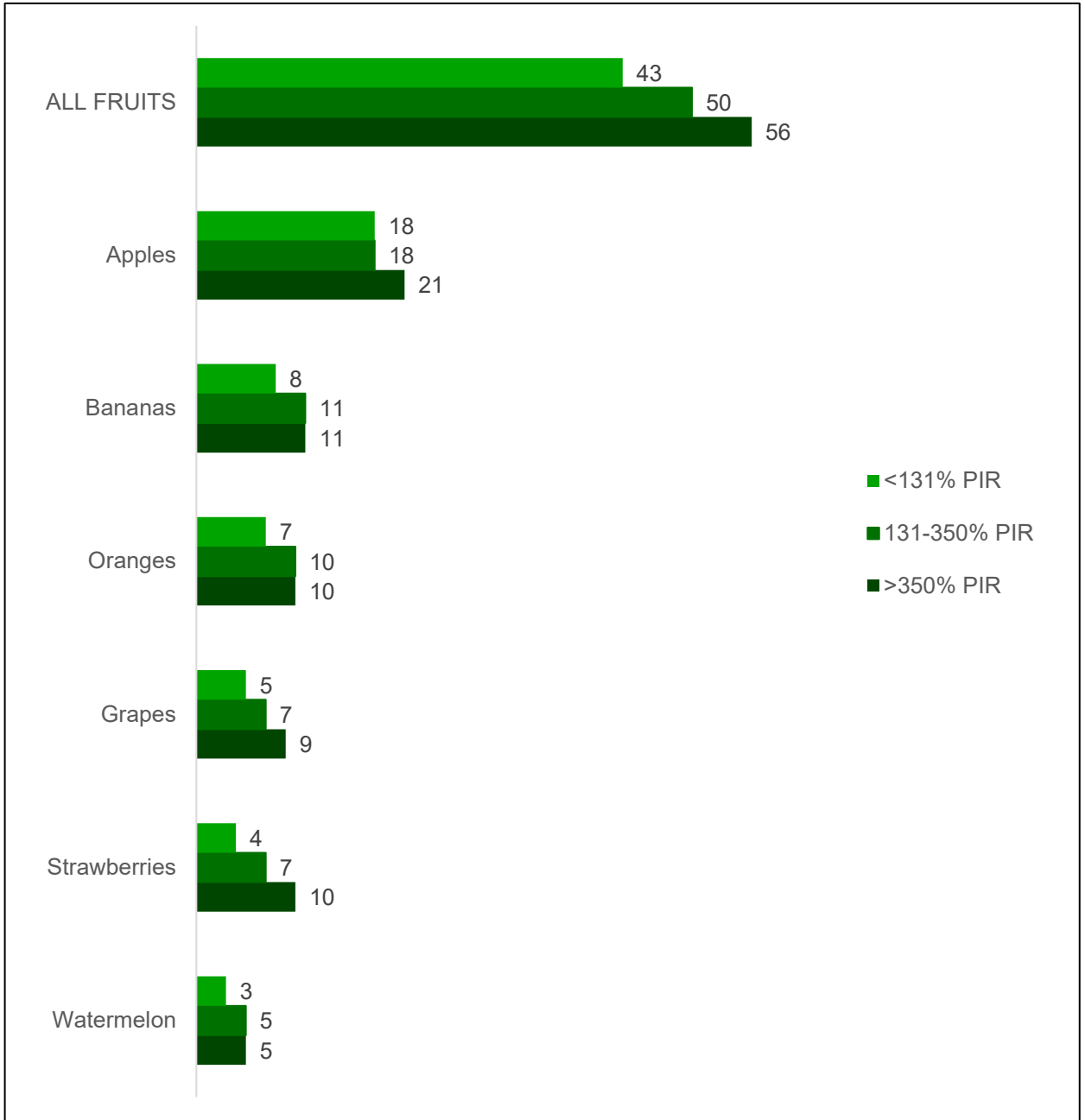
^{a,b} Percentages with different superscripts are significantly different, P<0.001.

SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years

What is the consumption of fruit among children and adolescents by income level?

The frequency of consuming fruit was higher among those at the highest income level (>350% Poverty Income Ratio) compared to those at lower income levels, though differences were not significant. Percentages reporting different fruits, though similar, tended to increase with income level.

Figure 5. Percentage of children and adolescents reporting discrete fruit by income level¹



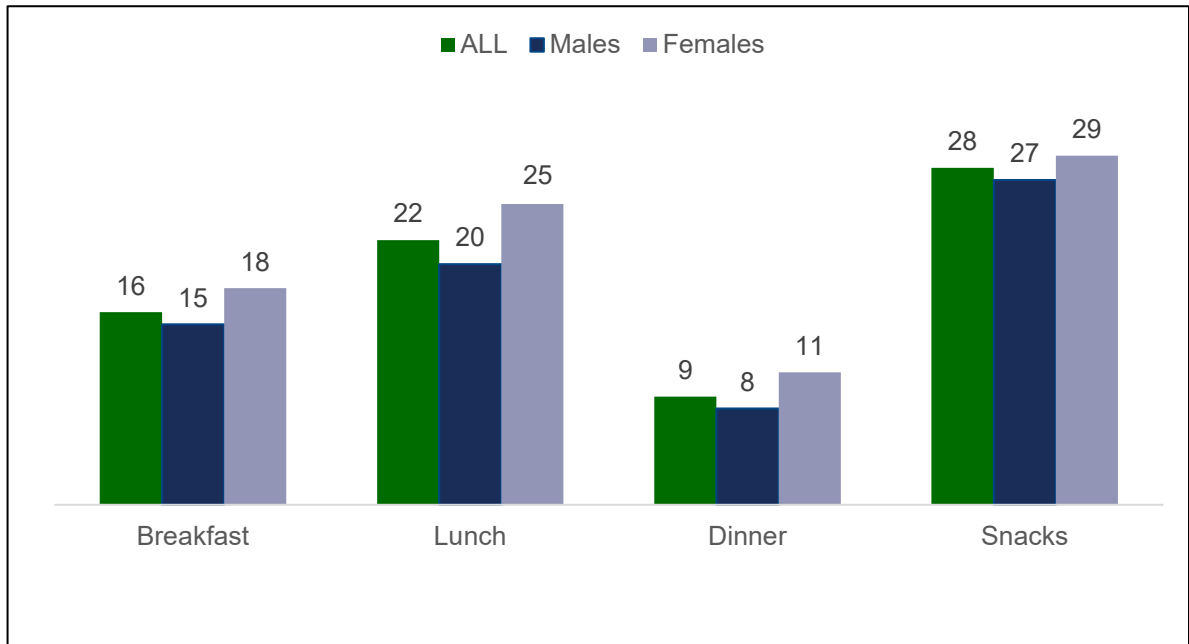
¹Income level based on percent Poverty Income Ratio (PIR)

SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years

What percentage of children and adolescents report having fruit at eating occasions?

Over one-quarter of children and adolescents had fruit as snacks, and almost one-quarter consumed it at lunch. Fruit was least frequently reported at dinner.

Figure 6. Percentages of children and adolescents reporting discrete fruit at eating occasions

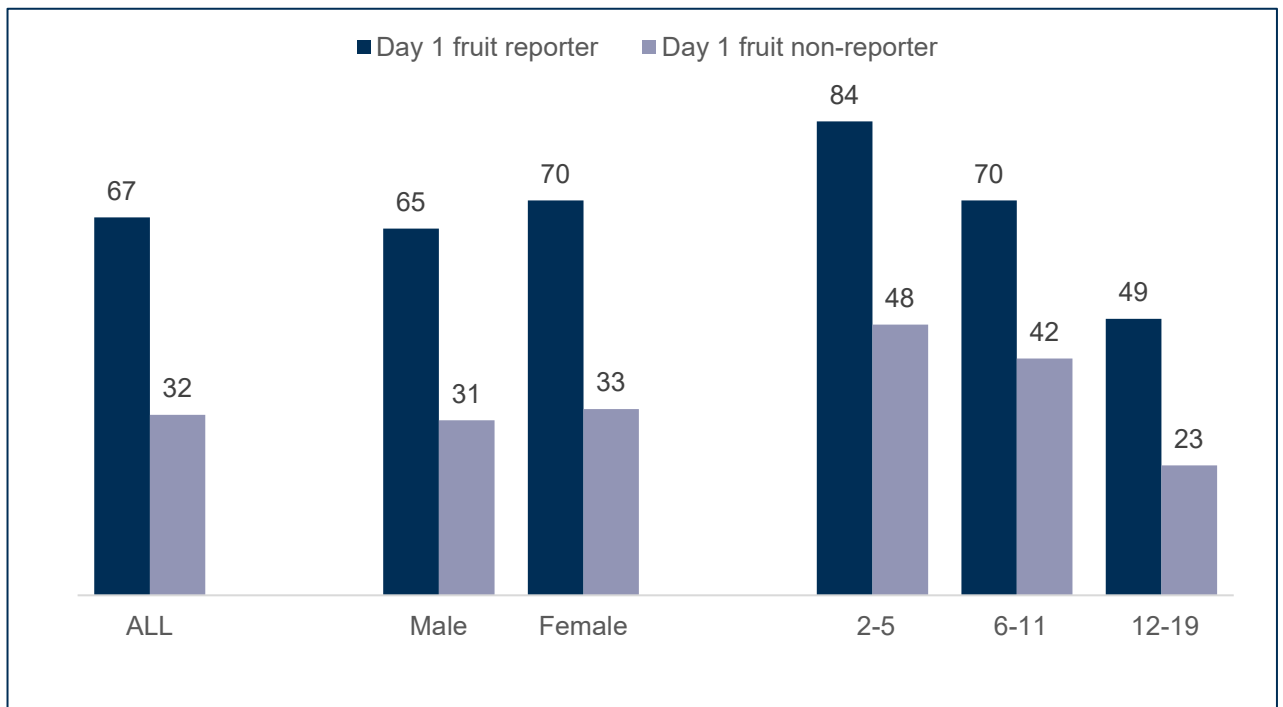


SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years

What proportions of day 1 fruit reporters and non-reporters report fruit on day 2?

Of those children and adolescents who had fruit on day 1, about two-thirds reported it on day 2. Among those who did not have fruit on day 1, 28% did report it on day 2. Percentages who reported intake on day 2 but not on day 1 were lower among males compared to females, and among those 12-19 years compared to those less than 12 years of age. Compared to other race/ethnic groups and those at higher income levels, respectively, lower percentages of Non-Hispanic blacks and those at the lowest income level reported intake of fruit on both day 1 and day 2 (*data not shown*).

Figure 7. Percentage of day 1 reporters and non-reporters who consumed fruit on day 2



SOURCE: What We Eat in America, NHANES 2017-2018, day 1 and day 2, individuals 2-19 years

Definitions

Fruit: Includes all discrete fruits - fresh, frozen, canned and dried forms - as defined by the What We Eat in America food categories 6002-6024³; does not include 100% fruit juices, fruit beverages, or fruit in desserts such as pies.

Day 1: Intake reported by participant on the Day 1 of dietary intake data collection, which was conducted by an in-person interview.

Day 2: Intake reported by participants on the Day 2 of dietary intake data collections, was conducted by phone interview.

Eating occasion: A distinct eating/drinking occurrence reported during the 24-hour dietary interview that consists of one or more food/beverage items (excluding plain water). The name of the eating occasion was selected from a fixed list provided during the interview. English and Spanish eating occasion names were grouped as follows:

Breakfast: breakfast, desayuno, and almuerzo

Lunch: brunch, lunch, and comida

Dinner: dinner, supper, and cena

Snack: snack, drink, extended consumption (items consumed over a long period of time), merienda, entre comidas, botana, bocadillo, tentempie, and bebida (excluding plain water)

Data source

Estimates in this report are based on one day of dietary intake data collected in What We Eat in America (WWEIA), the dietary intake interview component of the National Health and Nutrition Examination Survey (NHANES), in 2017-2018. Using the 5-step USDA Automated Multiple-Pass Method (AMPM) for the 24-hour recall, day 1 data were collected in-person and day 2 data were collected by phone. Interviews were conducted for participants less than six years of age with a proxy (who was generally the person most knowledgeable about the participant's intake). Interviews of children aged 6 to 8 were conducted with a proxy and the child was present to assist in reporting intake information. Interviews of children aged 9-11, were conducted with the child and the assistance of a proxy familiar with the child's intake. Participants 12 years or older answered for themselves. A total of 2,038 individuals age 2-19 years (996 males and 1,042 females) provided complete and reliable dietary intake data in 2017-2018. Sample weights were applied in all analyses to produce nationally representative estimates. USDA's What We Eat in America food categories were used to describe fruit intake.

1. USDA My Plate. Available at <https://www.choosemyplate.gov/eathealthy/start-simple-myplate>
2. Hoy MK, Clemens JC, Martin CL, Moshfegh AJ. Fruit and Vegetable Consumption of US Adults by Level of Variety, What We Eat in America, NHANES 2013-2016. *Curr Dev Nutr.* 2020 Feb 4;4(3):nzaa014. doi: 10.1093/cdn/nzaa014. eCollection 2020 Mar
3. What We Eat in America Food Categories 2017-2018. Available at https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/1718/Food_categories_2017-2018.pdf

About the authors

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