



# Intake of Vegetables by Children and Adolescents

What We Eat in America, NHANES 2017-2018

Food Surveys Research Group  
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## Highlights

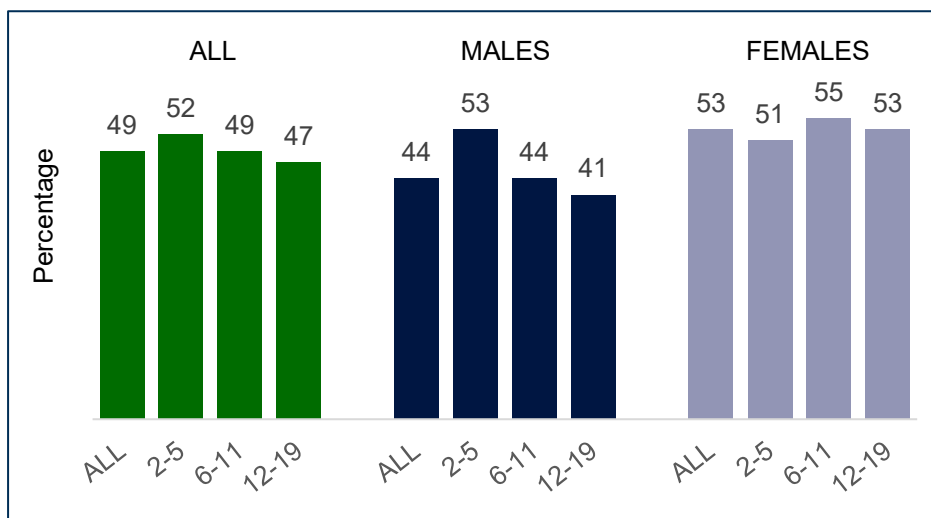
- A little more than half of children and less than half of adolescents reported intake of vegetables on any give day.
- About one-third of all children and adolescents had one type of vegetable on a given day. Less than one-quarter consumed two or more.
- Potatoes were reported most frequently by children and adolescents, most of which were fried potatoes.
- Fewer Hispanic children and adolescents had vegetables than other race/ethnic groups.
- Vegetables were reported by about one-third of children and adolescents at dinner, followed by lunch, though Non-Hispanic Asians had them more often at lunch than dinner.

Dietary guidance recommends consuming a variety of fruit and vegetables (FV) for the wide range of nutrients and bioactive components they provide<sup>1</sup>. Variety is associated with greater FV intake<sup>2</sup>, particularly vegetables. This report describes intake of vegetables by children and adolescents 2-19 years in What We Eat in America, NHANES 2017-2018. In this analysis, *vegetables* included discrete vegetables consumed as side dishes or salads and did not include vegetable juice or those in mixed dishes.

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

Except for males 2-5 years of age, less than half of males reported vegetables on a given day. Just over half of females had vegetables, which did not substantially change by age. Differences between males and females and between age groups were not significant.

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



SOURCE: What We Eat in America, NHANES 2017-18, day 1, individuals 2-19 years



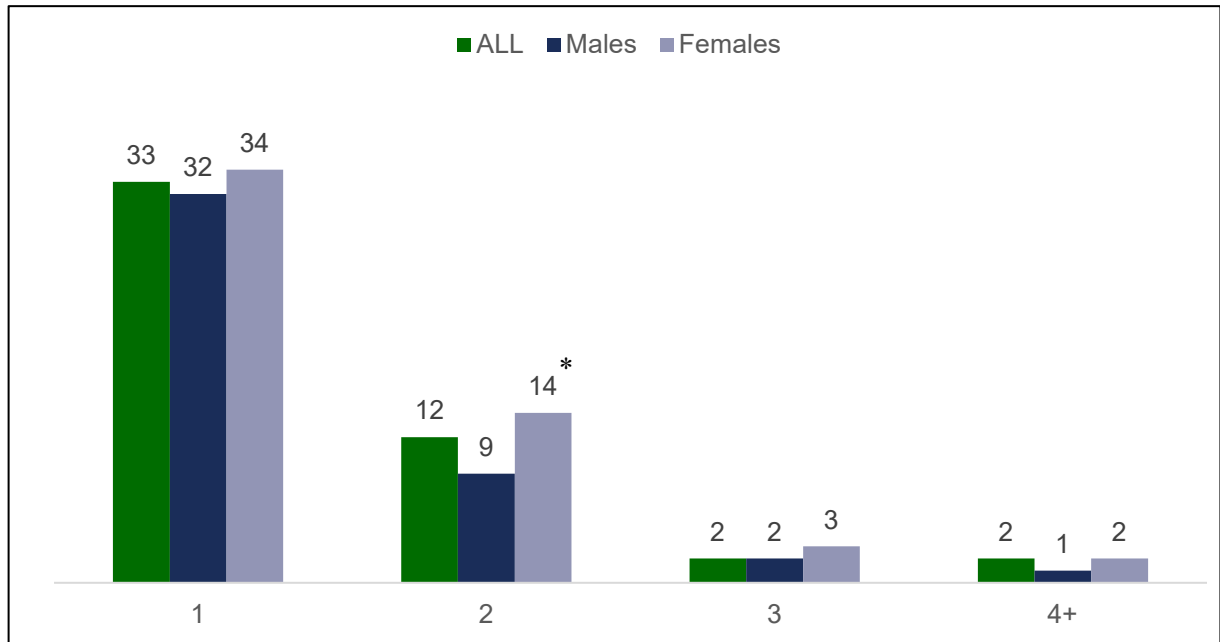
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## How many different vegetables do children and adolescents report on a given day?

Around one-third of all children and adolescents reported one vegetable on a given day. The percentages reporting different vegetables was similar between age groups, and between males and females (*data not shown*).

**Figure 2. Distribution of the number of different vegetables reported by children and adolescents**



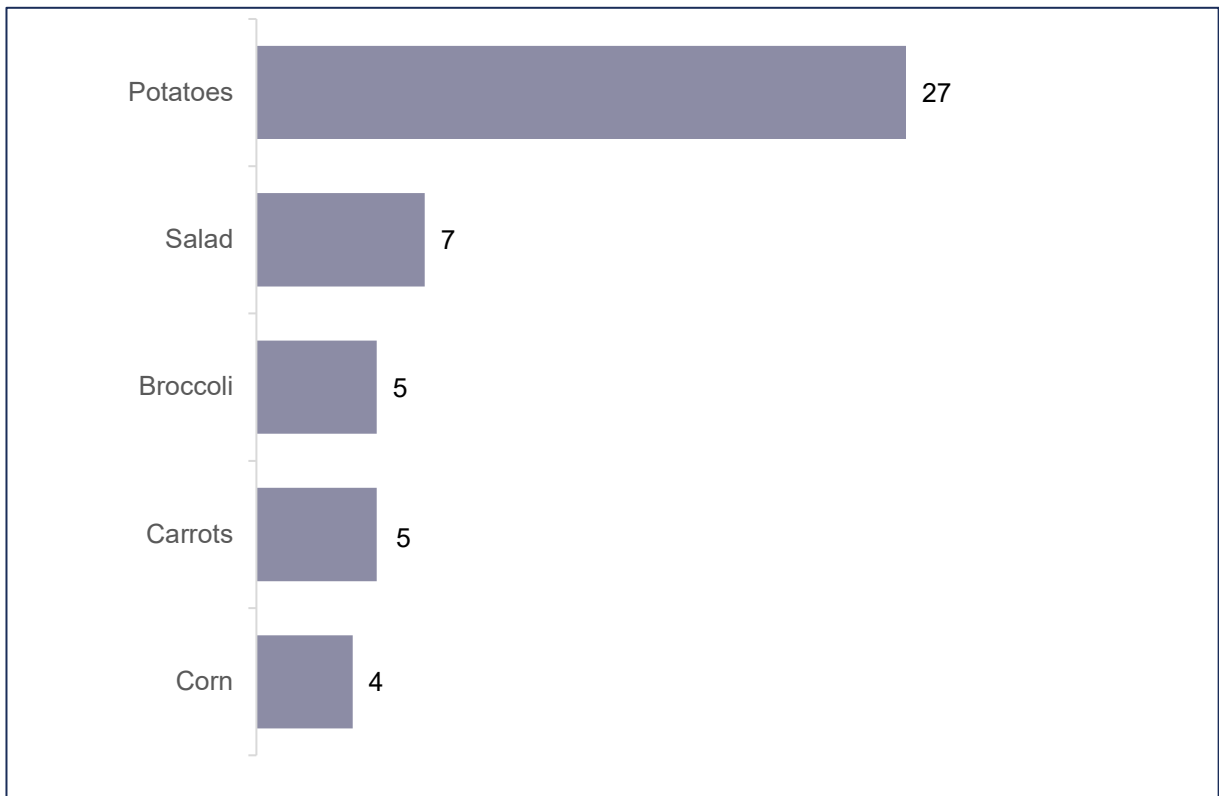
\* Percentage of females significantly higher than males,  $P < 0.001$

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

### What vegetables are reported most frequently by children and adolescents?

Potatoes (primarily fried) were the most reported vegetables among children and adolescents. Smaller percentages consumed other vegetables, as shown in Figure 3. Reports of salad consumption were lower among children 2-5 years and increased with age (*data not shown*). String beans, tomatoes, and cucumbers were less frequently consumed, and greens, onions, peppers, cabbage and squash were seldom reported (*data not shown*).

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

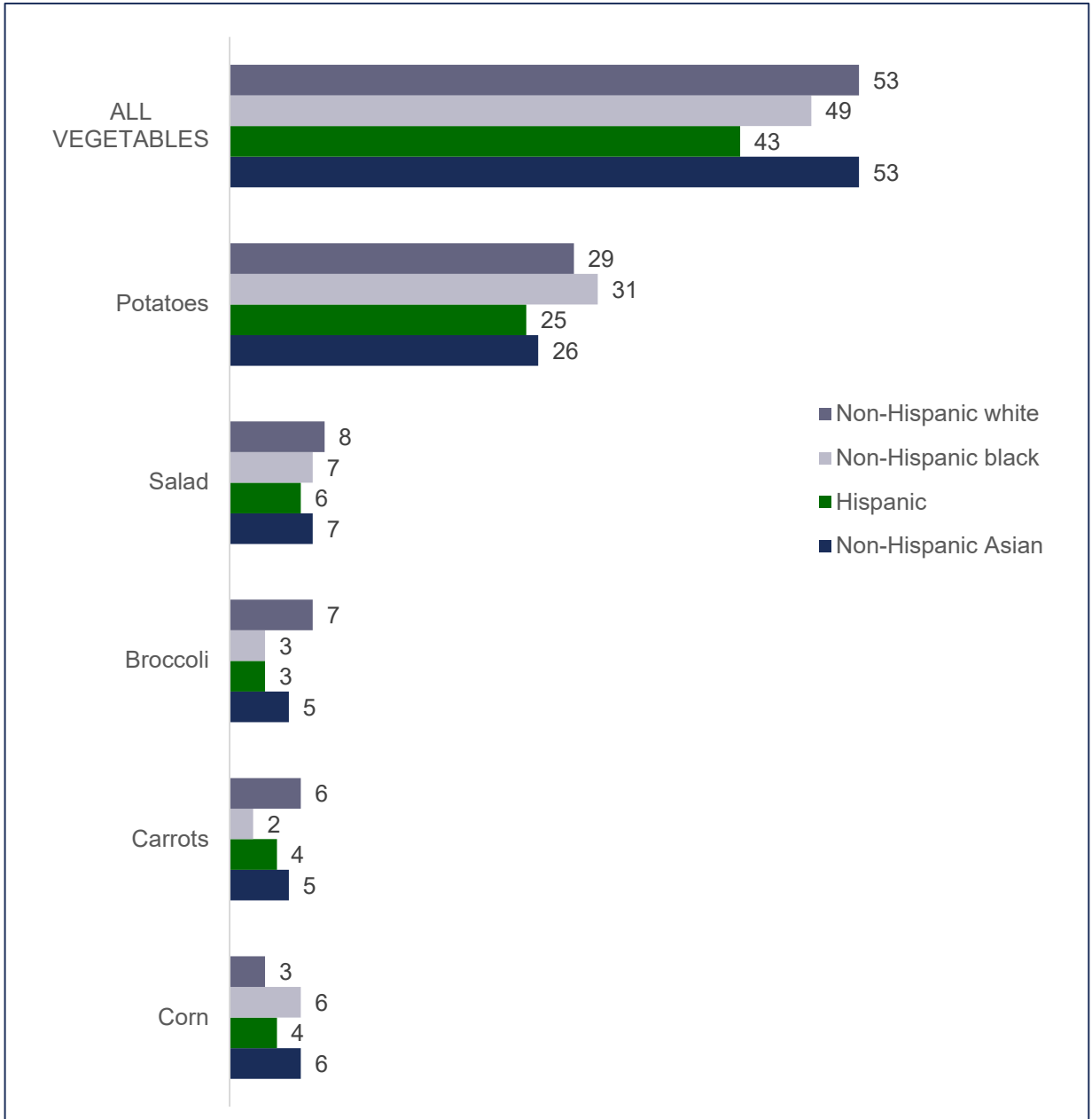


SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years

### What different vegetables are consumed by race/ethnicity?

While higher percentages of Non-Hispanic whites and Non-Hispanic Asian children and adolescents reported vegetables compared to Non-Hispanic blacks and Hispanics, differences were not significant. Among all race/ethnic groups, potatoes were the most consumed vegetable. Similar percentages reported intake of other vegetables.

**Figure 4. Percentages of children and adolescents reporting discrete vegetables by race/ethnicity**

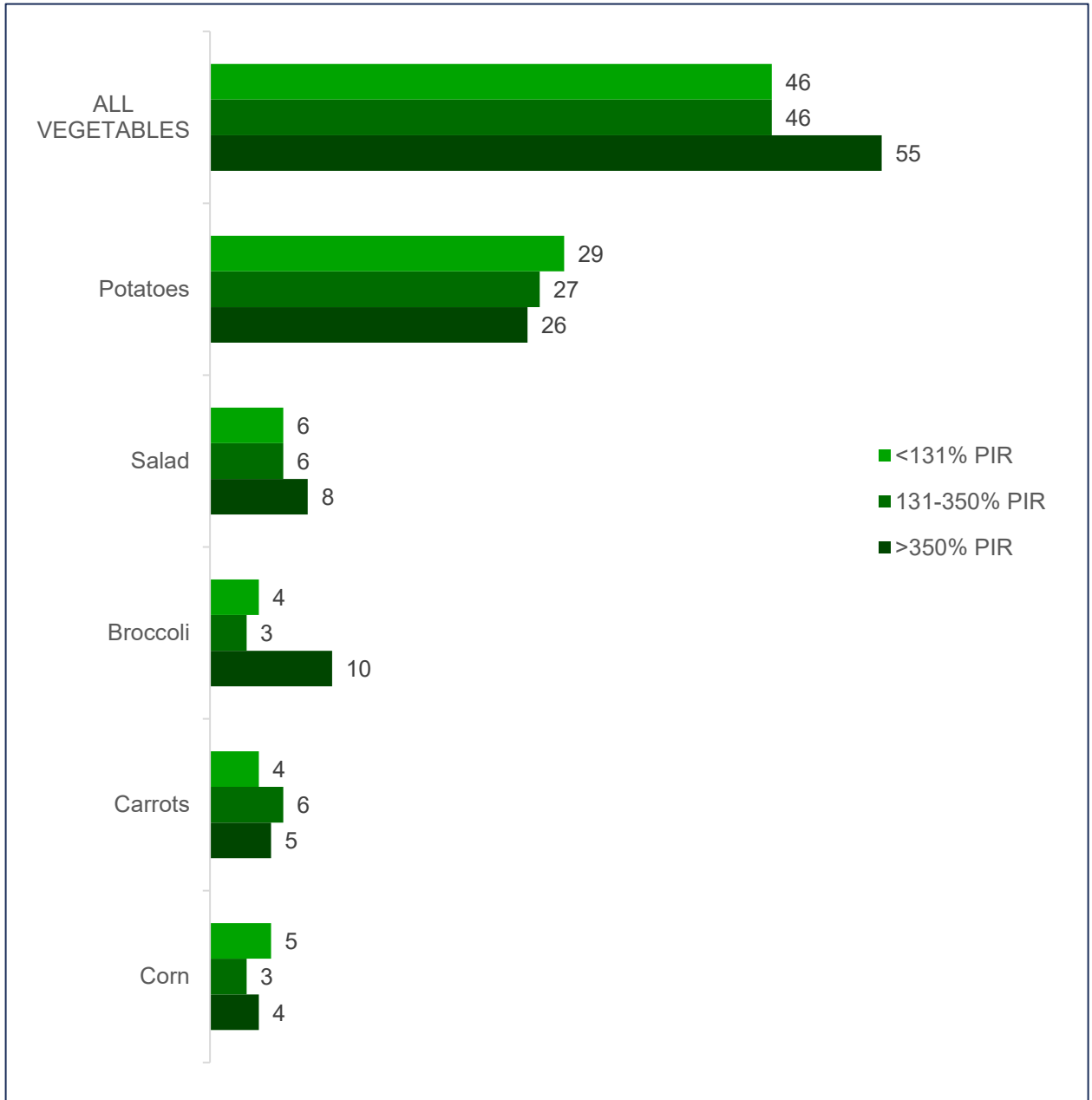


SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years

## What vegetables are consumed by income level?

Vegetables were reported by a higher percentage of children and adolescents at the highest income level (>350% Poverty Income Ratio) though differences between income levels were not significant. Among all income levels, potatoes were the most reported vegetable. Overall, the percentages reporting other vegetables were not largely different.

**Figure 5. Percentages of children and adolescents reporting discrete vegetables by income level<sup>1</sup>**



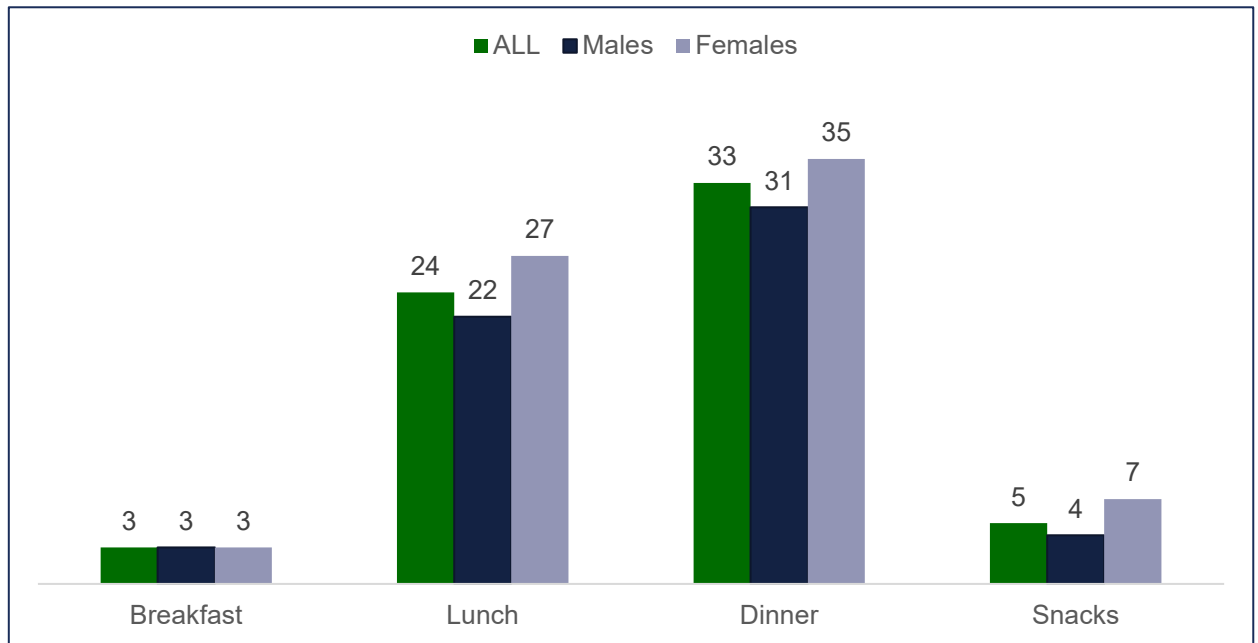
<sup>1</sup>Income level is based on percent Poverty Income Ratio (PIR)

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

## What eating occasions do children and adolescents report having vegetables?

Most vegetables were reported at dinner, followed by lunch. At dinner, consuming vegetables was more commonly reported by Non-Hispanic blacks and Non-Hispanic whites, and by those at higher income levels, whereas higher percentages of Non-Hispanic Asians and Hispanics had them at lunch vs dinner (*data not shown*). Also, intake of vegetables at lunch was reported more frequently by those at higher income levels (*data not shown*).

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

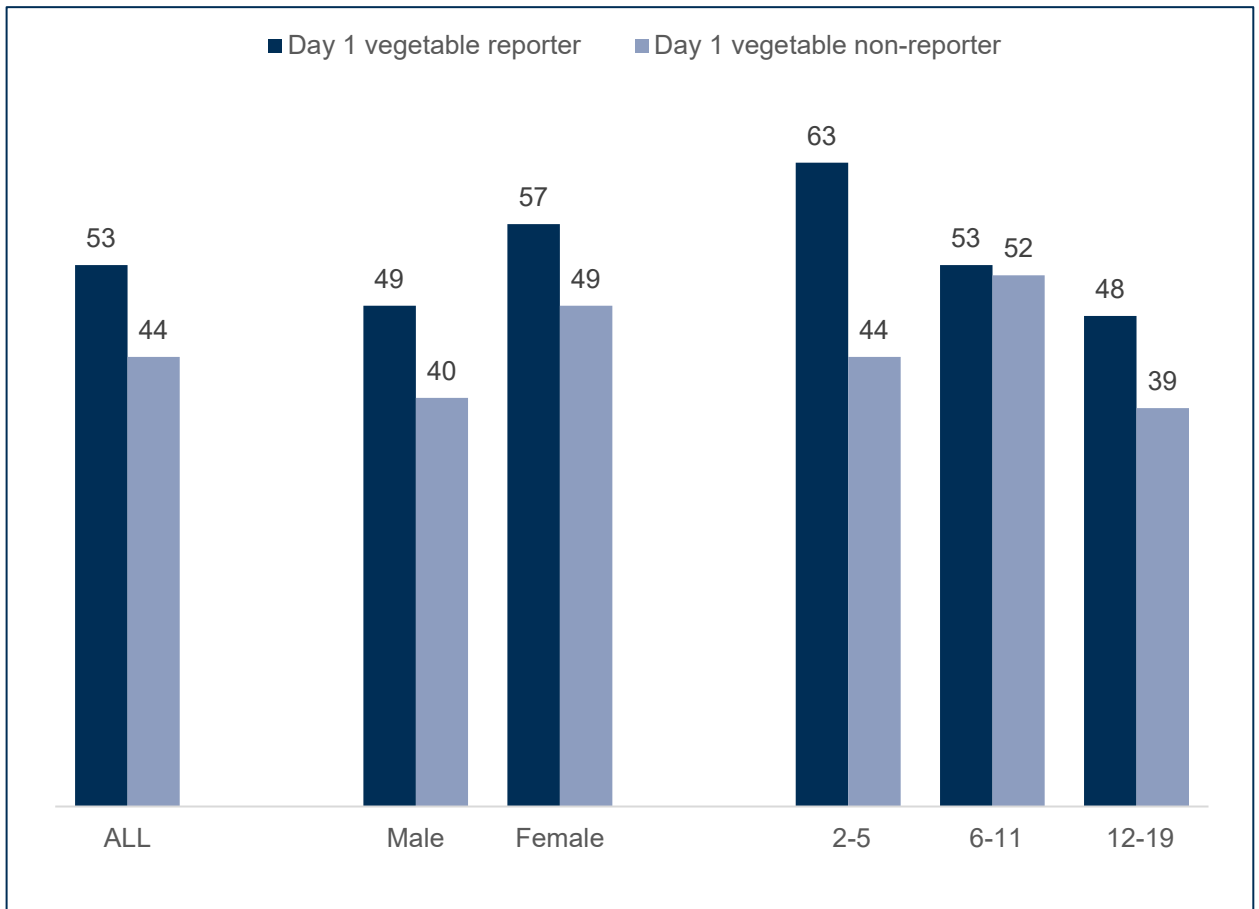


SOURCE: What We Eat in America, NHANES 2017-2018, day 1, individuals 2-19 years

## What proportions of day 1 vegetable reporters and non-reporters report vegetables on day 2?

Generally, over half of those who had vegetables on day 1 also reported having them on day 2. Among those who did not have a vegetable on day 1, less than half had a vegetable on day 2. Day 1 vegetable non-reporters that were less likely to include a vegetable on day 2 included adolescents, Hispanics, and those at the lowest income level (*data not shown*).

**Figure 7. Percentages of day 1 vegetable reporters and non-reporters who consumed discrete vegetables on day 2**



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

## Definitions

**Vegetables:** Includes all fresh, frozen, canned and dried forms of vegetables as defined by the What We Eat in America food categories 6402-6806<sup>3</sup> and consumed as discrete items such as a side dish or salad; does not include vegetables in mixed dishes such as soups, stews, and casseroles.

**Salad:** Includes all vegetables reported as part of a salad.

**Greens:** Includes spinach, kale, chard, collard, turnip, mustard, dandelion.

**Mixed vegetables:** Includes any combination of two or more vegetables served as one dish, such as peas and carrots, cauliflower and broccoli.

**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 dietary 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 vegetable intake.

## References

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](https://www.ars.usda.gov/ARSUserFiles/80400530/pdf/1718/Food_categories_2017-2018.pdf)



## About the authors

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## Suggested citation

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