



United States  
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Economic  
Research  
Service

# U.S. Fruit and Vegetable Consumption

## Who, What, Where, and How Much

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For good health, USDA urges American consumers to eat more fruits and vegetables—5 to 9 servings per day—and to choose a healthier, more varied mix of these foods. The variety of produce available to Americans has blossomed in recent years, but are consumers responding? The first step in determining this is to ask who eats what, where, and how much. Since 2000, ERS has been analyzing data from national USDA food consumption surveys, and we are ready to share some highlights.

Eighteen studies of fruits and vegetables have been completed (available on the enclosed CD). The research program is ongoing and will utilize data from both federal food consumption surveys and private scanner data. Interested readers should check the area "Who eats what and where" under [www.ers.usda.gov/Briefing/Consumption](http://www.ers.usda.gov/Briefing/Consumption) for future articles on fruits, vegetables, and other commodities, such as various meat products, wheat, and sweeteners.

### Preferences for fruits and vegetables vary by age

- Seniors eat fewer French fries and potato chips than toddlers; however, seniors eat more fresh and canned potatoes than younger consumers.
- Toddlers also like to eat apples, fresh as well as processed, whereas adults age 20-59 eat the fewest apples.
- Women 40 and older eat the most spinach, while teenage girls eat the least.

### Household income affects consumption of most fruits and vegetables

- High-income consumers drink more orange juice, while low-income consumers drink more orange drinks (less than 10 percent juice).
- Consumption of French fries does not vary by income.



- Compared with low-income consumers, high-income consumers eat more of many vegetables, including fresh celery, garlic, cucumbers, bell peppers, mushrooms, and tomatoes.

### The at-home market dominates most fruit and vegetable consumption, except—

- Eighty-eight percent of French fries are eaten away from home; fast-food establishments account for 67 percent.
- About 60 percent of catsup is consumed away from home, and fast-food establishments account for one-third.

## How We Determined Who Ate What?

USDA has conducted periodic surveys of household and individual food consumption in the United States since the 1930s. The most recent surveys—the 1994-96 and 1998 Continuing Survey of Food Intakes by Individuals (CSFII), conducted by USDA's Agricultural Research Service (ARS)—underpin these findings. Each year of the 1994-96 data set comprises a nationally representative sample of noninstitutionalized persons residing in 50 States and Washington, DC. The 1998 CSFII was a supplemental survey to the 1994-96 CSFII. The supplemental survey was strictly focused on children.

In the CSFII, 2 nonconsecutive days of dietary data for individuals of all ages were collected through in-person interviews using 24-hour recalls. The 1994-96 CSFII data set includes information on the food and nutrient intakes of 15,303 individuals, while the 1998 CSFII data set includes 5,559 children up to 9 years old.

The respondents provided a list of foods consumed as well as information on where, when, and how much of each food was eaten. Standardized probes were used to collect details on food descriptions and amount of food eaten. Where the food was purchased was coded by location. Economic, social, and demographic characteristics were also collected for each respondent. This rich CSFII database together with the Pyramid Servings Database and Food Commodity Intake Database developed by ARS enable researchers to estimate the market/consumption distribution of agricultural commodities by many delineations.

### Distinct racial/ethnic preferences exist for fruits and vegetables

- Black consumers, though just 13 percent of the U.S. population, account for 21 percent of sweet potato consumption. Puerto Rican Hispanics consume as many sweet potatoes as Black consumers.

- White and Hispanic consumers eat more bell peppers than Blacks and Asians. Blacks eat one-third less per capita than others.
- Per capita spinach consumption is highest among Asians.
- Asians like to eat mushrooms. Blacks eat only one-third as much as Asians per capita.
- Hispanics consume three times more dry beans per capita than the national average.

### Regional variations are also evident among some vegetables

- Consumers in the South eat more fresh cabbage than consumers in other regions. As for sauerkraut, three-fourths was eaten in the Midwest and East.
- Watermelon consumption is greatest in the West.

### Vegetable consumption varies by where consumers live

- Consumers in suburban and rural areas eat about 40 percent fewer fresh snap beans than those living in cities.
- Suburban consumers eat more cucumbers than other consumers do.

### Fruits and vegetables are consumed in a variety of ways

- Consumers purchase sweet corn as fresh, frozen, or canned, in nearly equal proportions.
- Processed tomato products account for 80 percent of total tomato consumption. The largest processed use of tomatoes is for sauces, followed by tomato paste, canned whole tomato products, and catsup and juice.

### Information Source

The complete series of studies from which this research brief is drawn can be accessed at [www.ers.usda.gov/Briefing/Consumption](http://www.ers.usda.gov/Briefing/Consumption).

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