Got Data?

Multiple Data Sources Track U.S. Food Consumption

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Health professionals, farmers, food companies, and policymakers want to know what Americans are eating, both the type of foods and how much. But charting the eating habits of 300 million people is not easy. Researchers rely on a number of surveys and data sources, each with strengths and weaknesses. Some data sources depend on production or sales statistics, and others rely on consumers to report what they eat. Some surveys report food bought at grocery stores and other retailers (food at home), while others capture purchases in fast food places, restaurants, and other eating places (food away from home).

ERS food availability data measure the flow of raw and semiprocessed food commodities through the U.S. marketing system. Going back to 1909 for most commodities, the food availability data are useful for understanding national trends in food consumption and for calculating the approximate nutrient content of the food supply. Adjusting U.S. production for exports and imports, seed and feed use, beginning and ending inventories, and industrial uses yields the amount of a commodity available for domestic consumption. To get closer to actual consumption amounts, ERS produces a second data series that adjusts the availability data to account for spoilage, plate waste, and losses from nonedible parts (see table on page 41).

Surveys are another way to measure consumption or intake. Food intake surveys, such as the National Eating Trends Survey, rely on consumers keeping food diaries or, in the case of the National Health and Nutrition Examination Survey (NHANES), being asked to recall what they and their families ate during the previous 24 hours. Reporting bias is a potential shortcoming of diaries and recalls; for example, consumers may over-report their intakes of nutritious foods or under-report less healthy foods. NHANES also collects information through a physical exam on respondents' height, weight, blood pressure, cholesterol levels, and other health markers, making the data useful for examining the relationship between food consumption, diet, and health conditions of the U.S. population.

Using consumer purchase surveys, such as Nielsen's Homescan Consumer Panel, or grocery store sales data from such surveys as InfoScan and Scantrack Services, researchers can analyze what consumers purchased, but not necessarily what they ate, particularly if spoilage or waste is high. Homescan is unique in that it contains both quantity and expenditure data; however, it does not include information on food eaten in restaurants or institutions, such as hospitals and schools. Surveys like NHANES and Homescan, which collect demographic information about survey participants, can be used to determine consumption patterns for specific demographic groups. Researchers choose the data set that is best suited for the focus of their study.

To discover how closely the different consumption estimates derived from these data sources track each other, ERS researchers compared in the following charts, three foods and three data sources: ERS Loss-Adjusted Food Availability, NHANES consumer recall, and Nielsen Homescan Consumer Panel data.

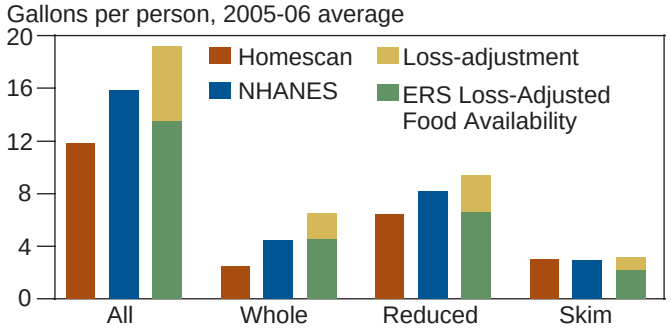
For more information, see:

ERS Food Availability (Per Capita) Data System, available at: www.ers.usda.gov/data/foodconsumption/

ERS Briefing Room on Food Assistance and Nutrition Programs: Recommended Data, available at: www.ers.usda.gov/briefing/foodnutritionassistance/data/

Nonflavored milk

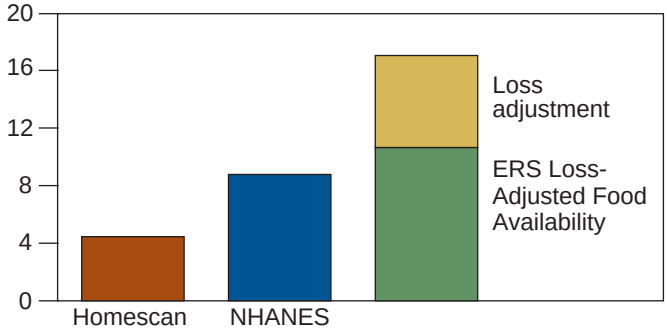
Gallons per person, 2005-06 average



- ERS data indicate that the average American drank 13.5 gallons of milk per year in 2005-06, compared with 15.9 gallons for people recalling their milk consumption for the NHANES interviewer. This difference could arise from NHANES respondents inflating their consumption of reduced-fat milk, or from over-estimation of loss in the ERS data.
- It is not surprising that the Homescan measure is lower (11.8 gallons per person) because it does not capture milk provided by schools or consumed in restaurants.

Fresh tomatoes

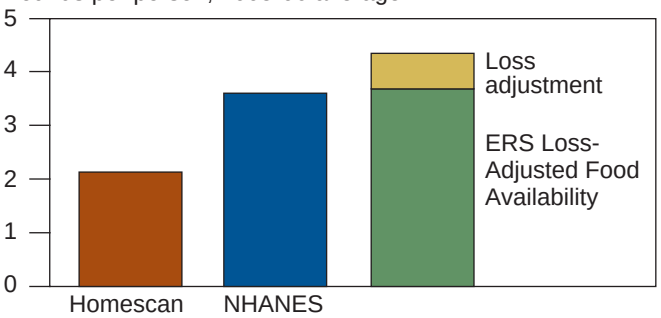
Pounds per person, 2005-06 average



- ERS data report the highest total for fresh tomato consumption at 10.6 pounds per person, compared with 8.8 pounds in the NHANES data. When tomatoes are used as an ingredient in a food, such as stew or salad, NHANES respondents will report eating the stew or the salad, not fresh tomatoes, thus under-estimating fresh tomato intake. Also, ERS may be under-estimating loss for fresh tomatoes.
- The lower 4.5 pounds per capita from the Homescan data point out the importance of fresh tomatoes—salads, salsas, and sandwich toppings—in the foodservice sector. According to NHANES, 36 percent of fresh tomatoes are eaten away from home. Even after accounting for the away-from-home market, the Homescan consumption amount is lower than expected when compared with the ERS data.

Potato chips

Pounds per person, 2005-06 average



- Intake of potato chips from NHANES (3.61 pounds per person) is quite similar to the ERS measure (3.68 pounds). The small difference between intake and adjusted availability likely reflects improvements in NHANES survey techniques for helping respondents recall their intake of foods known to be under-reported.
- Homescan data show at-home purchases of potato chips at 2.14 pounds per person, a relatively low number that does not include chips eaten at restaurants or institutions.

Source for all charts: Calculated by USDA, Economic Research Service using ERS Food Availability Data, USDA/HHS National Health and Nutrition Examination Survey (NHANES) data, and Nielsen Homescan Consumer Panel data.

Research objectives drive the data source used (selected surveys and data series)

	Database/ Source	Description	Time period	Sample	Major uses and content	Major weaknesses
Supply	**Food Availability Data** *ERS, USDA*	Annual estimates of commodities available for U.S. consumption based on production adjusted for inventory changes, exports, imports, and nonfood uses.	Annual data; 2-year lag between collection and release.	Estimates not based on sampling.	Analyze trends and shifts in food supply. Calculate nutrient content of food supply. Series dates back to 1909.	National averages only. Overstates actual consumption.
	Loss-Adjusted Food Availability Data *ERS, USDA*	Adjustment factors for spoilage and other losses applied to availability data to approximate actual consumption.	Annual data; 2-year lag between collection and release.	Estimates not based on sampling.	Compare consumption estimates to *Dietary Guidelines* and MyPyramid. Series dates back to 1970.	National averages only. Requires assumptions on food loss, waste, and spoilage.
Consumer-reported intake	**NHANES** *USDA/DHHS*	Food intake by individuals based on 24-hour recall for 2 days; includes personal, economic, health status, and demographics of sampled person only; includes where food was purchased and eaten.	Annual data; 2-year lag between collection and release.	Nationally representative sample of 5,000 individuals.	Compare intake with *Dietary Guidelines*. Analyze effects of individual characteristics on food consumption. Link food intake with health outcomes.	Food intake recall method undercounts calories; no food prices.
	National Eating Trends *NPD Group*	Food intake by individuals based on a 2-week diary includes personal, economic, health information, and demographics of each household member; includes where food was purchased and eaten.	Quarterly data; 3-month lag between collection and release.	Nationally representative sample of 2,000 households and 5,000 individuals.	Compare intake with *Dietary Guidelines*. Analyze effects of household and individual characteristics on food consumption. Link food intake with health conditions, exercise, and attitudes.	Self-reported diary reduces reliability. Based on frequency of consumption; amount consumed derived from NHANES average serving size.
Consumer purchases	**Consumer Report on Eating Share Trends** *NPD Group*	Individual food purchases at commercial and noncommercial foodservice establishments; includes check for the visit and identifies establishment.	Monthly data; 1-month lag between collection and release. Noncommercial data released semi-annually with 6-week lag.	Nationally representative sample of 640,000 individuals.	Analyses of household food-away-from-home purchases. Menu information allows evaluation of nutrient content as well as price and quantity studies.	Self-reported diary reduces reliability. Does not include food prepared at home.
	Consumer Expenditure Survey *Bureau of Labor Statistics, U.S. Dept. of Labor*	Household spending on at-home and away-from-home food; limited breakdown of spending for food away from home.	Annual data; 1-year lag between collection and release.	Nationally representative survey of 7,500 households.	Analyses of yearly consumer food spending.	Self-reported diary reduces reliability. No information on quantities or prices.
	Homescan Consumer Panel *Nielsen*	Household panel members scan food purchases from all retail stores (food at home); includes prices, quantities, promotion information, and demographics.	Daily and weekly data; 6-week lag between collection and release.	Nationally representative panel of 125,000 households.	Analyses of household purchases, including prices and quantities. Includes random-weight products. Captures sales from all retail stores.	Not as accurate as point-of-sale data for estimating national sales. Does not include food away from home.
Store sales	**InfoScan** *Information Resources Inc.*	Point-of-sale data for food stores, drug stores, dollar stores, and mass merchandisers.	Weekly data; 11-day lag between collection and release.	Nationally representative sample of 34,000 retail outlets.	Analyses of sales, prices, and quantities for stores.	Does not include non-UPC coded products or sales from Wal-Mart or Costco.
	Scantrack Services *Nielsen*	Point-of-sale data for food stores, food/drug combinations, drug stores, and mass merchandisers.	Weekly data; 2-week lag between collection and release.	Nationally representative sample of 4,100 stores.	Analyses of sales, prices, and quantities for stores.	Does not include non-UPC coded products or sales from Wal-Mart.