



Food Surveys Research Group
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Beverage Choices of U.S. Adults

What We Eat in America, NHANES 2007-2008

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Highlights

- ▶ Plain water, coffee, and regular soft/other drinks are the beverages reported by the largest percentages of adults age 20 years and over. Men drink a combined total of about 11 cups of beverages per day, and women drink about 10 cups.
- ▶ Overall, beverages provide 18 percent (385 calories) of total calories, and regular soft/other drinks contribute one-third (134 calories) of that amount. Beverages provide high proportions of adults' daily intakes of added sugars, vitamins C and D, and calcium.
- ▶ Compared to younger adults, older adults drink more coffee and less plain water, regular soft/other drinks, and alcoholic beverages. Total intake of beverages is higher for adults under 60 years versus those 60 years and over, and for non-Hispanic whites than for non-Hispanic blacks and Hispanics.
- ▶ At breakfast, the beverage most frequently reported by adults is coffee; at lunch, dinner, and snacks, it is plain water.

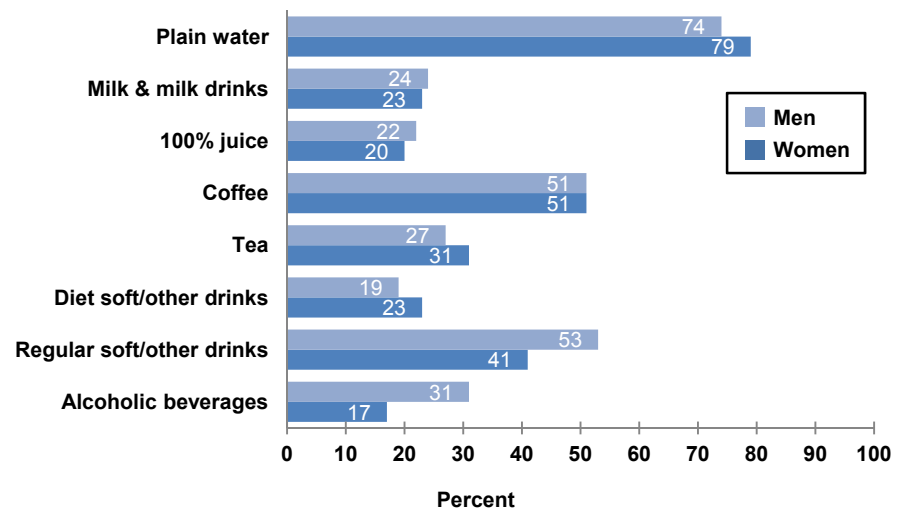
Beverages are an integral part of the diet. Fluids (drinking water and other beverages) provide over 80 percent of the daily intake of total water (*see definitions on page 7*), which is necessary for life (1). Beverages can also be a significant source of calories and nutrients. For example, regular soft/other drinks and alcoholic beverages (*see definitions on page 7*) are among the top five sources of calories for persons age 19 years and over (2). Milk and milk drinks and fruit juices contribute to intakes of nutrients and recommended food groups that are typically lacking in the American diet (3-5). Consequently, a person's beverage choices can substantially impact the healthfulness of the overall diet.

Using nationally representative data from 5,334 adults age 20 years and over, this study examines the consumption of beverages and their contributions to nutrient intakes; differences in beverage choices by age and race/ethnicity; and patterns of beverage consumption at meals and snacks (*see definitions on page 7*).

What beverages do adults drink?

On any given day, the percentage of adults age 20 years and over drinking plain water (*see definitions on page 7*) at least once is higher than the percentage drinking any other beverage, as shown in figure 1. Other beverages consumed by high percentages of adults are coffee and regular soft/other drinks.

Figure 1. Percentages of men and women age 20 years and over reporting specified beverages, 2007-2008



SOURCE: What We Eat in America, NHANES 2007-2008, Day 1 dietary intake data, weighted.



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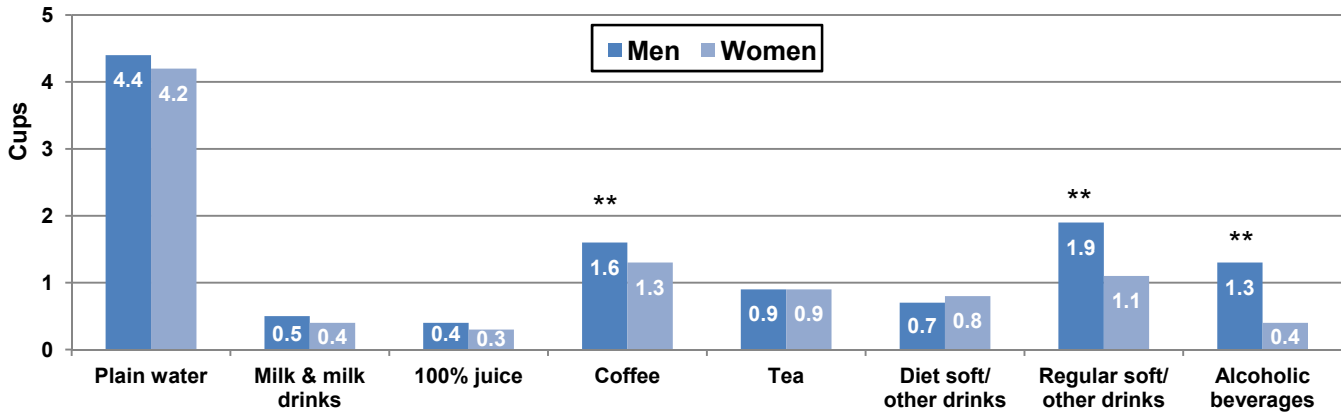


What quantity of beverages do adults drink, and does this differ for men and women?

As shown in figure 2 below, on any given day, both men and women drink an average of slightly more than 4 cups of plain water and over 1 cup each of coffee and regular soft/other drinks; men also consume over 1 cup of alcoholic beverages, mostly in the form of beer. Both men and women consume only one-half cup or less of milk and milk drinks and 100% juice. Men have a significantly larger combined total intake of all beverages (11.7 cups) than do women (9.3 cups; $p < .001$), mainly due to men's higher intakes of coffee, regular soft/other drinks, and alcoholic beverages.

About one-third to one-half of the coffee and tea consumed by adults is plain; the rest has caloric additions such as sugar or cream. Among men, 58 percent of coffee and 59 percent of tea are consumed with caloric additions; among women, 67 percent of coffee and 49 percent of tea have such additions.

Figure 2. Mean intakes (cups) of beverages by men and women age 20 years and over, 2007-2008

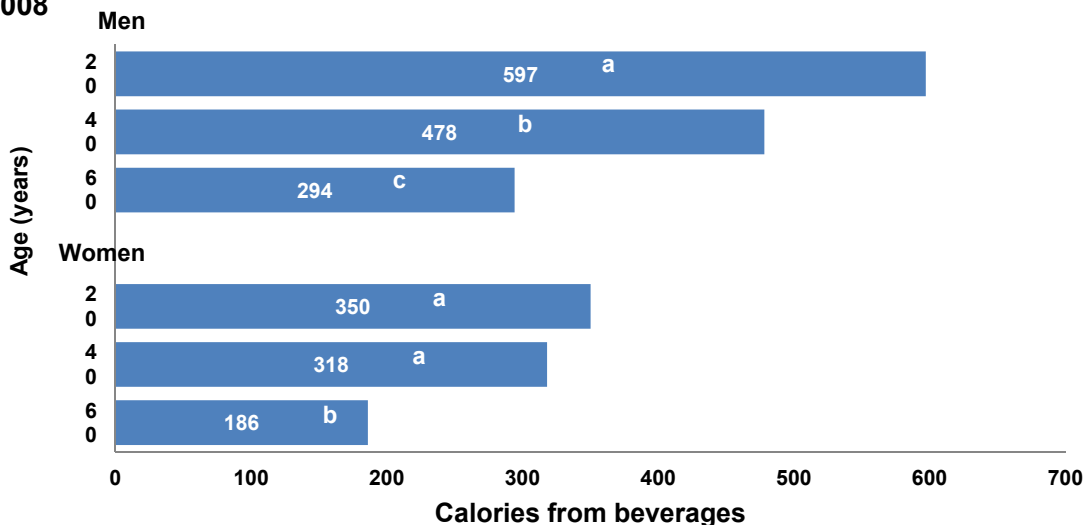


NOTE: **Intakes differ significantly between men and women ($p < .001$).
 SOURCE: What We Eat in America, NHANES 2007-2008, Day 1 dietary intake data, weighted.

Does the daily calorie contribution of adults' beverage intake vary by age group?

Yes. Among adults age years 20 and over, beverages contribute a daily average of 483 calories for men and 297 calories for women. These intakes of calories from beverages account for 19 percent of total calories for men and 17 percent for women. As shown in figure 3 below, beverage calorie intake is much lower for adults age 60 years and over than for younger adults. Moreover, the percentage of total calorie intake that is provided by beverages is also lower for adults age 60 years and over (15 percent for men and 12 percent for women) than for younger adults (22 percent for men and 19 percent for women).

Figure 3. Mean calorie intake in a day from beverages by men and women, by age group, 2007-2008

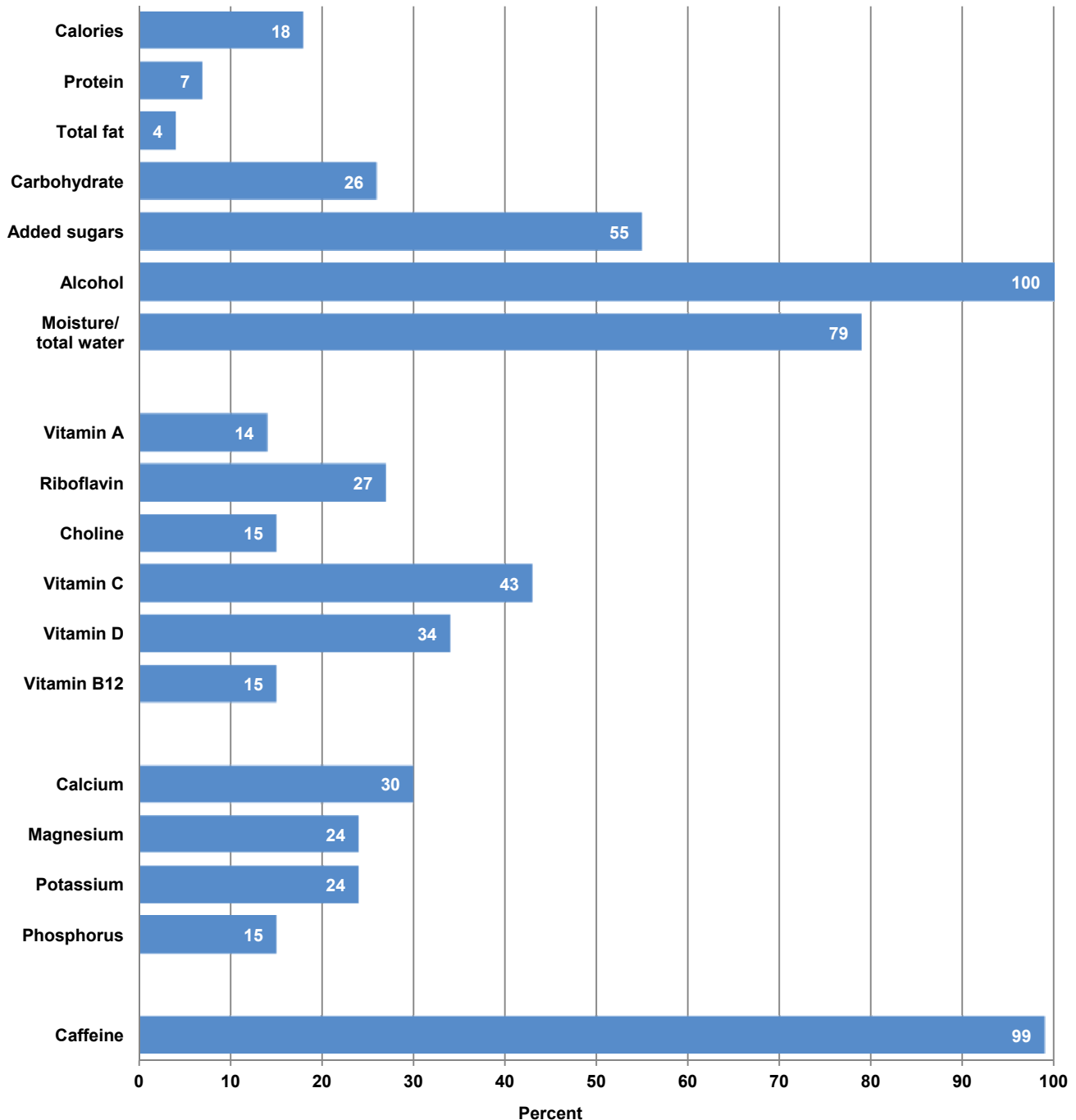


NOTE: ^{a,b,c}Within gender, age groups with different letters differ significantly ($p < 0.001$) in both the intake of calories from beverages and the percentage of total calorie intake that is provided by beverages.
 SOURCE: What We Eat in America, NHANES 2007-2008, Day 1 dietary intake data, weighted.

How much of their daily intakes of nutrients and other food components do adults obtain from beverages?

Beverages contribute substantially to intake of some nutrients and little to intake of others. Of the average calorie intake of adults age 20 years and over (2,115 calories), 18 percent (385 calories) comes from beverages (see figure 4). More than half of adults' daily intake of added sugars (a subgroup of carbohydrate) is provided by beverages, but little protein or fat is. Predictably, beverages provide essentially all the alcohol and caffeine and most of the moisture (total water) in the diets of American adults. Beverages also contribute considerable amounts of some micronutrients, such as vitamins C and D.

Figure 4. Beverages' contributions to intakes of selected nutrients and other food components by adults age 20 years and over, 2007-2008



SOURCE: What We Eat in America, NHANES 2007-2008, Day 1 dietary intake data, weighted.

Which beverages are the top providers of nutrients?

It varies from nutrient to nutrient. As seen previously in figure 4 (*see page 3*), beverages make large contributions to daily intakes of some nutrients. In many cases, this high nutrient contribution comes primarily from one or two beverage groups. For each nutrient listed in table 1 below, the beverages with check marks collectively account for over one-half of beverages' contribution to the overall intake of that nutrient.

It is no surprise that the top beverage contributor of added sugars is the regular soft/other drinks group, which provides on average 134 calories to the diets of adults (6 percent of total calories). Similarly, all the alcohol comes from alcoholic beverages, and most of the caffeine (64 percent of total caffeine) comes from coffee.

However, in some cases, a beverage that is not rich in a given nutrient is a top provider of that nutrient on account of adults' high consumption of that beverage. For example, because adults' consumption of plain water is high, water is a top beverage provider of calcium and magnesium even though it is not rich in those nutrients. Coffee is not considered a rich source of riboflavin, especially not in comparison with milk. Yet adults drink a lot of coffee (some of it with milk added to it) and not much milk on its own, so coffee joins milk as a major beverage contributor to the riboflavin intakes of adults.

Table 1. Top beverages contributing to intakes of selected nutrients and food components, 2007-2008

Nutrient	Plain water	Milk and milk drinks	100% juice	Coffee	Regular soft/other drinks	Alcoholic beverages
Carbohydrate					✓	
Added sugars					✓	
Alcohol						✓
Riboflavin		✓		✓		
Vitamin C			✓			
Vitamin D		✓				
Calcium	✓	✓				
Magnesium	✓	✓		✓		
Potassium		✓		✓		
Caffeine				✓		

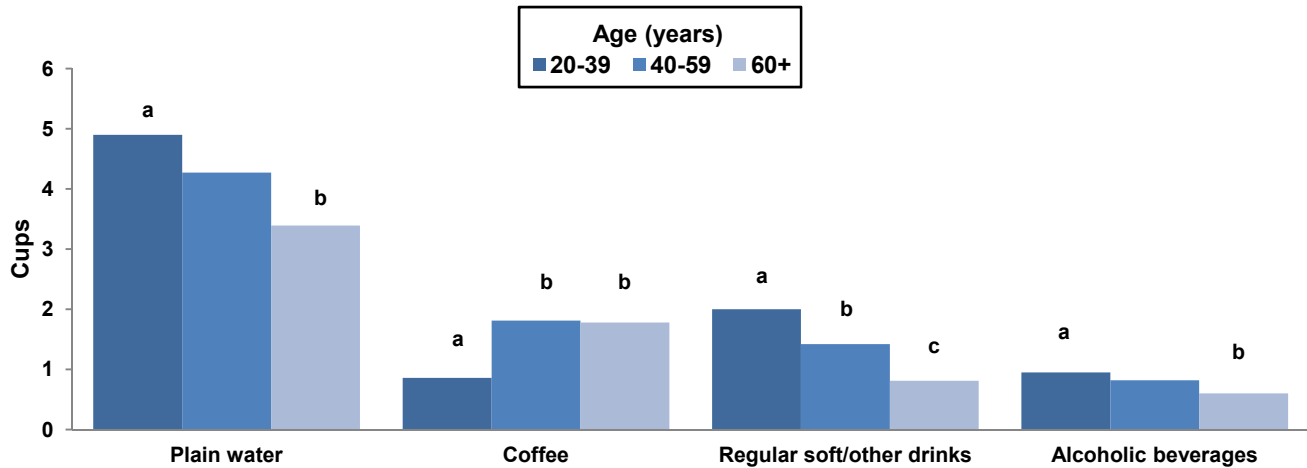
NOTE: Beverage groups include items added to the base drink, if the respondent reported consuming them together, e.g., milk added to coffee, sugar added to tea (see definitions of beverage groups on page 7).

SOURCE: What We Eat in America, NHANES 2007-2008, Day 1 dietary intake data, weighted. Nutrient values for plain water are based on a nationally representative sampling of drinking water (8).

Do beverage choices differ by age?

Yes, for some beverages. Total beverage intake is significantly lower for adults age 60 years and over than for adults age 20-59 years ($p < .001$). Adults age 20-39 years drink significantly more plain water, regular soft/other drinks, and alcoholic beverages than do adults age 60 years and over (see figure 5). On the other hand, coffee intake is higher among adults age 40 years and over than among those age 20-39 years.

Figure 5. Mean daily intakes of total and select beverages, adults age 20 years and over, 2007-2008

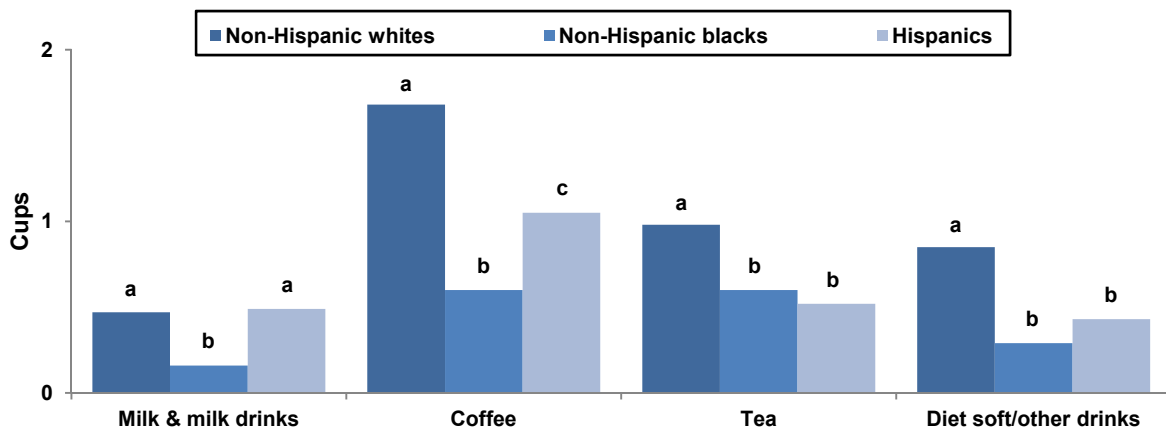


NOTES: Adjusted for gender, educational status, percent of poverty threshold (income), race/ethnicity, weight status, and calorie intake (see definitions on page 7).
 a,b,c Within beverage category, bars with different superscript letters differ significantly ($p < .001$) among age groups.
 SOURCE: What We Eat in America, NHANES 2007-2008, Day 1 dietary intake data, weighted.

Does consumption of beverages differ by race/ethnicity?

Yes. Non-Hispanic whites consume significantly more beverages overall relative to non-Hispanic blacks and Hispanics ($p < .001$). Non-Hispanic whites and Hispanics consume significantly more milk and milk drinks than do non-Hispanic blacks, though consumption by all groups is low, as shown in figure 6. Non-Hispanic whites also consume more coffee, tea, and diet soft/other drinks than do the other race/ethnic groups.

Figure 6. Mean daily intakes of selected beverages by race/ethnicity, adults age 20 years and over, 2007-2008

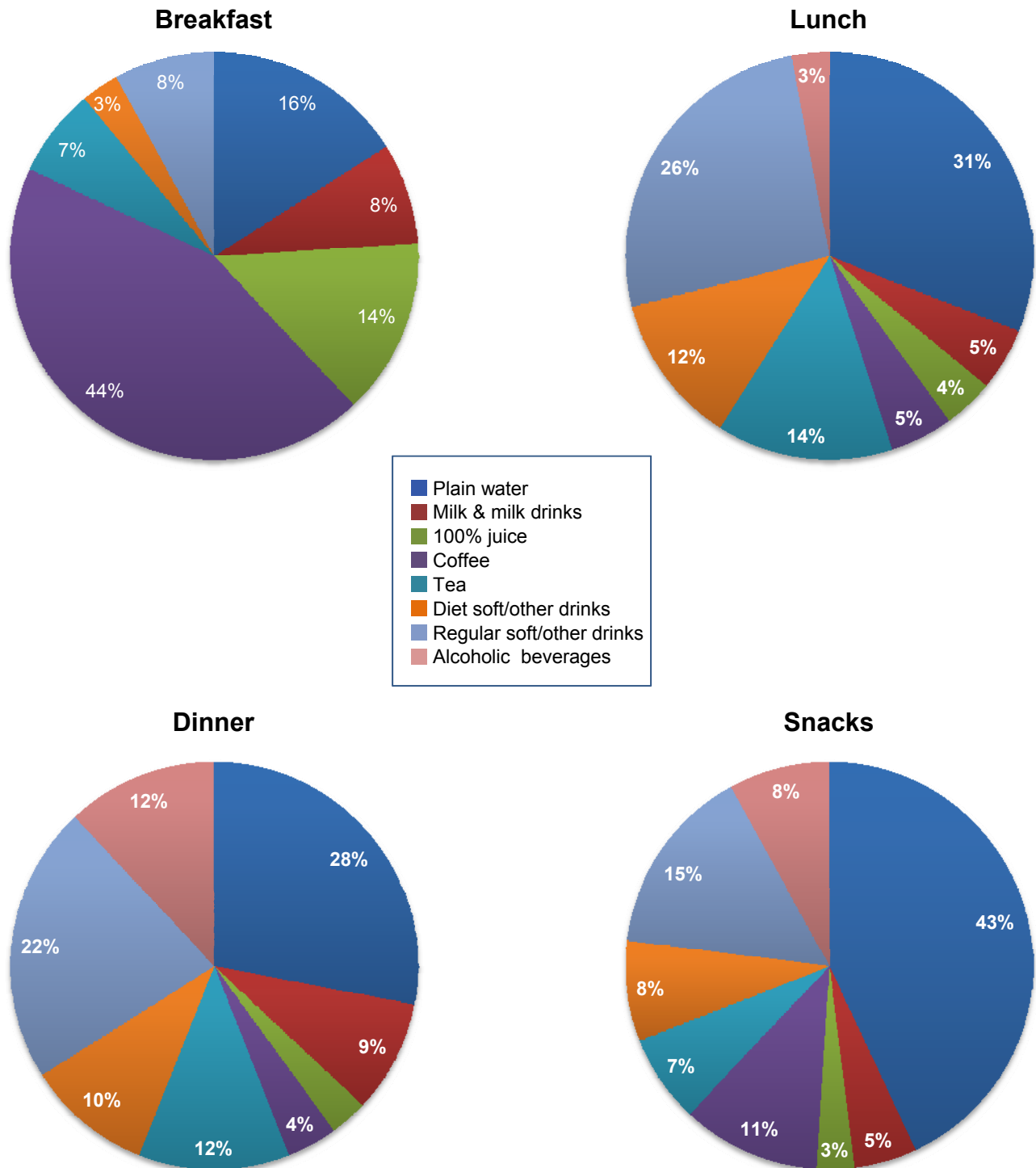


NOTES: Adjusted for gender, age, educational status, percent of poverty threshold (income), weight status, and calorie intake (see definitions on page 7). For a specific beverage category, bars with different superscript letters differ significantly ($p < .001$) by race/ethnicity.
 SOURCE: What We Eat in America, NHANES 2007-2008, Day 1 dietary intake data, weighted.

Do beverage choices differ among meals and snacks?

Yes. Beverage choice patterns vary at breakfast, lunch, dinner, and snacks (*see definitions on page 7*). At breakfast, the highest percentage of all beverages reported is for coffee (44 percent of beverage reports). Plain water and regular soft/other drinks are the first and second most frequently reported beverages at lunch, dinner, and snacks.

Figure 7. Beverage consumption patterns at breakfast, lunch, dinner, and snacks, adults age 20 years and over, 2007-2008



SOURCE: What We Eat in America, NHANES 2007-2008, Day 1 dietary intake data, weighted.

Definitions

Beverage: Any item that meets the definition for one of the beverage groups listed below. Amounts consumed and nutrient contributions of each beverage group take into account any items reported by the respondent as being consumed together as a unit with the beverage – for example, sugar added to tea or cream added to coffee.

Beverage groups:

- **100% juice:** Includes all fruit and vegetable juices that are 100 percent juice.
- **Alcoholic beverages:** Includes wine, beer, liquor, and mixed drinks.
- **Coffee:** Includes coffee and coffee-based drinks, such as latte and coffee made from presweetened mix.
- **Diet soft/other drinks:** Includes low-calorie versions of the following: Soft drinks (pop, soda), fruit drinks (fruit flavored or containing less than 100 percent juice), sports drinks, and energy drinks. Also includes carbonated water.
- **Milk & milk drinks:** Includes plain milk (whole, reduced fat, lowfat, skim) and milk-based drinks such as chocolate milk, milk shakes, and hot cocoa.
- **Plain water:** Includes tap and non-carbonated bottled water without caloric sweeteners or additions.
- **Regular soft/other drinks:** Includes regular (i.e., calorically sweetened) versions of the following: Soft drinks (pop, soda), fruit drinks (fruit flavored or containing less than 100 percent juice), sports drinks, and energy drinks.
- **Tea:** Includes tea and tea-based drinks, such as ready-to-drink sweet tea and tea made from presweetened mix.

BMI (body mass index): Based on an individual's height and weight, this number is a reliable indicator of body fatness for most people (6). Calculated by dividing a person's weight (in kilograms) by the square of his/her height (in meters). Using pounds and inches, BMI may be calculated according to the formula $\text{weight (lb)} / [\text{height (in)}]^2 \times 703$.

Eating occasion: An occurrence of eating/drinking reported during the dietary interview, consisting of one or more food/beverage items, including plain water. The respondent selected the name of each eating occasion from a list provided during the interview. English and Spanish eating occasion names are grouped as follows:

- **Breakfast:** Includes breakfast, desayuno, and almuerzo.
- **Lunch:** Includes brunch, lunch, and comida.
- **Dinner:** Includes dinner, supper, and cena.
- **Snack:** Includes snack, drink, merienda, entre comida, botana, bocadillo, tentempie, bebida, and extended consumption (used when an item was consumed over a long period of time).

Educational status: Levels used in this analysis were less than high school completed, high school or equivalent (GED) completed, and any education beyond high school.

Poverty thresholds: Percentage of poverty level is based on family income, size, and composition using U.S. Census Bureau poverty thresholds. Poverty threshold categories are related to Federal nutrition assistance programs. See www.fns.usda.gov.

Water, total: The sum of all water (moisture) from all sources, including plain water, other beverages, and food.

Weight status: Adults age 20 years and over were assigned to weight status categories based on the following ranges of BMI (see definition above): Underweight, less than 18.5; normal weight, 18.5-24.9; overweight, 25.0-29.9; and obese, 30.0 and over (7).

Data Source

Estimates in this report are based on 24-hour recall data collected in 2007-2008 in What We Eat in America (WWEIA), the dietary intake interview component of the National Health and Nutrition Examination Survey (NHANES). A total of 5,420 men and women age 20 years and over provided one day of complete and reliable dietary intake data. Pregnant and lactating females (n=86) were excluded, yielding a final sample of 5,334 adults (2,662 males and 2,672 females). Sample weights were applied in all analyses to produce nationally representative estimates. Nutrient intake estimates in this report are based only on intakes of foods and beverages, not supplements. The source of nutrient data for all beverages, including water, is the USDA Food and Nutrient Database for Dietary Studies 4.1 (8).

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