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Added-sugar Intake from Sugar-sweetened Beverages among Adults in St. Louis City & County, MO, 2017

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Key Findings

- **On average, added-sugar intake from SSBs is 9.8 teaspoons (tsp) per day in a month among adults 18-64 in St. Louis, MO. SSBs make up 48.2% of adults' total daily added-sugar intake (20.3 tsp per day).**
- **Female and male adults consume 8.6 and 11.1 tsp of added sugar from SSBs per day in a month, respectively, which exceeds the recommended limits for total added sugar of 5 tsp per day for females and 9 tsp per day for males.**
- **Adults aged 18-34 and 35-49 have higher intake of added-sugar from SSBs compared to adults aged 50-64.**
- **Non-Hispanic black adults have higher added-sugar from SSBs (12.8 tsp per day) compared to non-Hispanic white adults (8.5 tsp per day) and Hispanic adults (9.5 tsp per day).**
- **As found with all adults, females with lower- versus higher-education also have greater added-sugar intake from SSBs. For males, individuals with a high school education or less vs. higher-educated adults have greater added-sugar intake from SSBs.**

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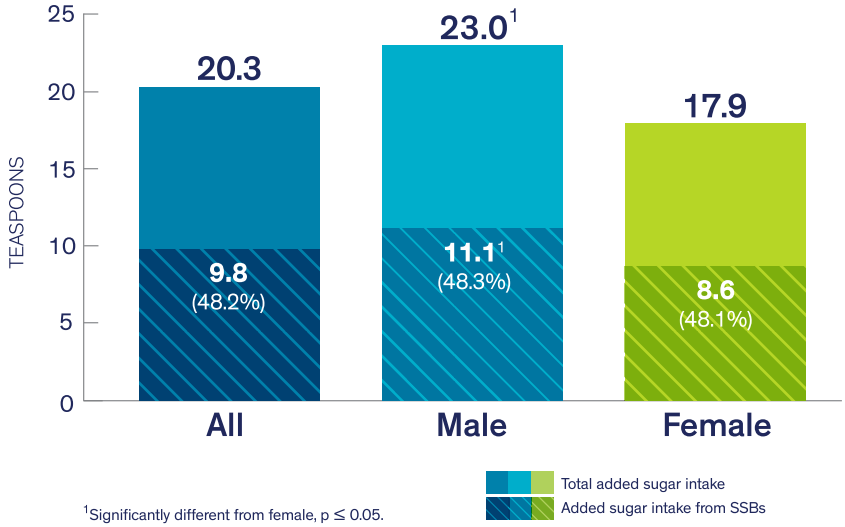
Added sugar accounts for more than 13 percent of calories per day in the overall diet of the United States (U.S.) population, exceeding the recommendation from the *2015–2020 Dietary Guidelines for Americans* that daily caloric intake from added sugars should not exceed 10% of total calories.[1] Beverages are the major source of consumed added sugars, with non-alcoholic sweetened beverages making up 46% of added-sugar intake.[1] Added-sugar intake is associated with negative health outcomes including cardiovascular disease, type 2 diabetes, and overweight and obesity.[2-4] Missouri ranks 17th for having high rates of adult obesity (32%), 13th for diabetes (12%), and 14th for hypertension (34%) in the U.S.[5] Local estimates for St. Louis City and County, respectively, are similar to state estimates for obesity (33% and 29%),[6] diabetes (11% and 12%),[7] and hypertension prevalence (32% and 36%).[8] Reducing consumption of added sugars is a key strategy of CDC's *Winnable Battles* for improving nutrition and reducing obesity.[9] This research brief presents information on the estimated number of teaspoons (tsp) of daily added-sugar intake from sugar-sweetened beverages (SSBs) and added-sugar intake from SSBs as a percentage of total added-sugar intake among adults aged 18-64 in St. Louis City and County (hereafter referred to as St. Louis), MO. The estimates are presented by gender, age, race/ethnicity, and education.

Added-sugar intake from SSBs

- On average, added-sugar intake from SSBs is 9.8 tsp per day and total added-sugar intake is 20.3 tsp per day among adults.
- Added-sugar from SSBs makes up 48.2% of total daily added-sugar intake among adults.
- Added-sugar intake from SSBs is greater for males (11.1 tsp per day) compared to females (8.6 tsp per day), but represents similar percentages of total added-sugar intake for males (48.3%) and females (48.1%).

FIGURE 1 **Added-sugar intake per day in a month from sugar-sweetened beverages and in total among adults aged 18-64, by gender, St. Louis City & County, MO, 2017**



[1]Significantly different from female, $p \leq 0.05$.

Added-sugar intake from SSBs, by age

- On average, intake of added-sugar from SSBs is significantly higher among adults aged 18-34 and 35-49 (11.7 and 11.1 tsp per day) compared to older adults aged 50-64 (6.6 tsp per day).
- Differences in added-sugar intake are significant for younger (aged 18-34 and 35-49) versus older (aged 50-64) adults for both genders (13.7 and 12.7 versus 7.4 tsps for males, and 10.4 and 9.4 versus 5.8 tsps for females).
- On average, 51.7%, 50.4%, and 40.5% of total daily added-sugar intake comes from SSBs for adults aged 18-34, 35-49, and 50-64, respectively.

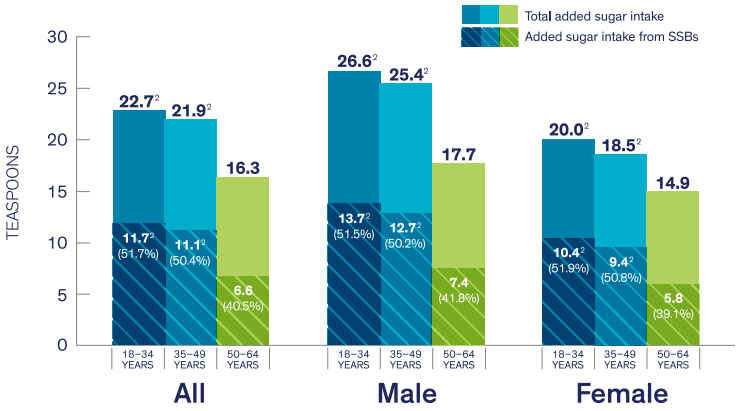
Added-sugar intake from SSBs, by race/ethnicity

- Overall non-Hispanic black adults consume more added-sugar from SSBs (12.8 tsp per day) than non-Hispanic white (8.5 tsp per day) and Hispanic adults (9.5 tsp per day).
- For males, non- Hispanic black adults consume more added-sugar from SSBs (15.6 tsp per day) than non-Hispanic white adults (9.7 tsp per day).
- For females, non-Hispanic black adults consume more added-sugar from SSBs (11.1 tsp per day) than non-Hispanic white adults (7.4 tsp per day).
- For males, the percentage of total daily added-sugar intake from SSBs is 51.6% for non-Hispanic black adults and 47.0% for non-Hispanic white adults.
- For females, SSBs make up 53.7% and 44.8% of total added sugar consumption for non-Hispanic black and non-Hispanic white adults, respectively.

Added-sugar intake from SSBs, by education

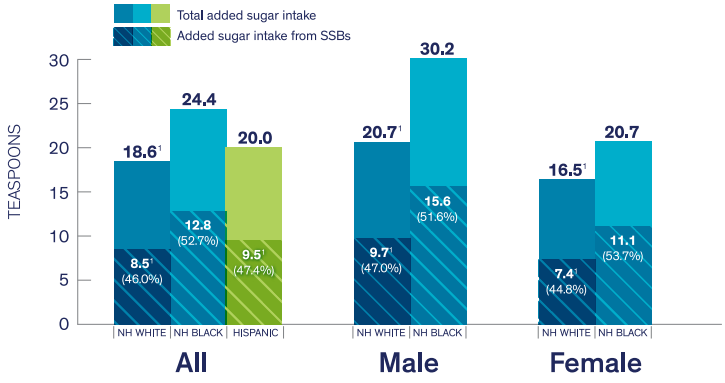
- Added-sugar intake from SSBs falls among adults as education rises: it is 13.1, 9.2, and 7.9 tsp per day, respectively, among adults with a high school education or less, some college, and a college degree or more.
- The pattern by education for all adults is also present among females, with lower added-sugar intake from SSBs as education rises: it is 11.1, 8.7, and 6.6 tsp per day, respectively, among female adults with a high school education or less, some college, and a college degree or more.
- For males, adults with a high school education or less (15.6 tsp per day) consume more added-sugar from SSBs than adults with some college (9.8 tsp per day) and adults with a college degree or more (9.2 tsp per day).
- The percentage of added-sugar intake from SSBs out of total added-sugar intake consistently declines as education rises for both males (51.7%, 47.7%, 45.6%) and females (53.4%, 48.8%, and 41.7%) for high school education or less, some college, and a college degree or more, respectively.

FIGURE 2 **Added-sugar intake per day in a month from sugar-sweetened beverages and in total among adults aged 18-64, by gender and age, St. Louis City & County, MO, 2017**



[1]Significantly different from ages 35–49, $p \leq 0.05$.
[2]Significantly different from ages 50–64, $p \leq 0.05$.

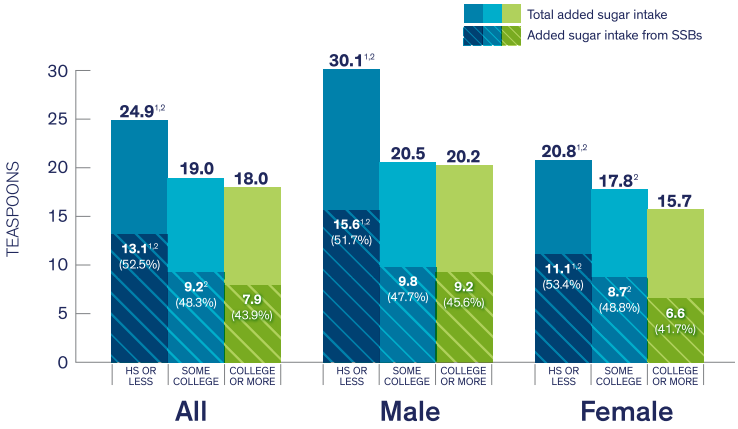
FIGURE 3 **Added-sugar intake per day in a month from sugar-sweetened beverages and in total among adults aged 18-64, by gender and race/ethnicity,[a] St. Louis City & County, MO, 2017**



[1]Significantly different from non-Hispanic black, $p \leq 0.05$.
[a]Data on Hispanic not reported by gender due to insufficient sample.

NH: non-Hispanic
Other/mixed: not shown

FIGURE 4 **Added-sugar intake per day in a month from sugar-sweetened beverages and in total among adults aged 18-64, by gender and education, St. Louis City & County, MO, 2017**



[1]Significantly different from some college, $p \leq 0.05$.
[2]Significantly different from college degree or more, $p \leq 0.05$.

HS: high school

Data and Methods

The data for this study were drawn from an online survey of St. Louis, MO adults aged 18-64 years administered by Qualtrics, Provo, UT, in June of 2017.[11] Data were collected on food and beverage consumption and on demographic and socioeconomic characteristics. Data were weighted to be representative of the demographic and socioeconomic composition of adults in St. Louis, MO.[12, 13] The final analytic sample consisted of 2,473 people. Consumption data on foods and beverages that contribute to sugar intake were collected using frequency measures based on the Dietary Screener Questionnaire (DSQ) in the NHANES 2009-2010.[14,15] Eight of the items included in the DSQ assessed added sugars. Three items in the DSQ were used to estimate added-sugar intake from SSBs: 1) soda; 2) fruit, sports, and energy drinks combined category referred to as "sugar-sweetened drinks"; and 3) teas and coffees sweetened with sugar. The remaining five DSQ items used in the added-sugar assessment included: frozen desserts; chocolate and candy; doughnuts; cookies, cake, pie, and brownies; and cereal. The DSQ frequency responses were converted to estimates of added-sugar intake in teaspoons using a regression-based scoring algorithm with sex- and age-specific portion size information developed by the National Cancer Institute.[16] Estimates for the weighted mean added-sugar intake are reported for the full sample and by gender, and also by age, race/ethnicity, and education for the full sample and separately for male and female samples. Data on Hispanic not reported by gender due to insufficient sample size.[17] The estimates of added-sugar intake (total and from SSBs) by gender, and by age, race/ethnicity, and education within the male and female samples were tested using t-tests (for means) to determine statistically significant ($p \leq 0.05$) differences.

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SUGGESTED CITATION

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Summary

On average, total added-sugar intake among adults aged 18-64 in St. Louis, MO, is 20.3 teaspoons per day of which 9.8 teaspoons, or 48.2%, comes from SSBs. Although males consume more total added-sugar and added-sugar from SSBs, added-sugar from SSBs makes up roughly the same proportion of total sugar intake for both males and females (48.3% for males and 48.1% for females). For both males and females, younger adults have higher added-sugar intake from SSBs than older adults. Non-Hispanic black adults consume more added-sugar from SSBs than Hispanic and non-Hispanic white adults. For males, added-sugar intake from SSBs is significantly higher in non-Hispanic black adults and individuals with a high school education or less as compared to non-Hispanic white adults and higher educated individuals, respectively. For females, added-sugar intake from SSBs is higher for non-Hispanic black adults compared to non-Hispanic white adults and it is lower at each successive level of education. These differences in intake of added-sugar from SSBs may contribute to disparities in obesity and related health outcomes. Overall, based on a 2000 calorie per day diet, estimated total added-sugar intake in teaspoons among St. Louis, MO, adults aged 18-64 is about 1.6 times the recommended limit that not more than 10% of calories come from all sugars.[1] Further, added-sugar intake of 9.8 teaspoons per day from SSBs makes up 78% of the recommended daily limit from all sugars (i.e., 12.5 tsp based on the 10% max of a 2000 calorie daily diet), which also exceeds other recommended limits of 5 and 9 teaspoons per day from added sugars for females and males, respectively.[10]

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