



Study Predicts Tax on Calories in Sugar-Sweetened Beverages Would Reduce Consumption of Beverage Calories

Calorie-based tax imposes less cost to consumers than volume-based ounce tax.

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Princeton, N.J.—A .04 cent per-calorie tax on sugar-sweetened beverages would reduce consumption by 5,800 calories per person annually and could do so at a lower cost to consumers than an ounce-based tax, according to a study published online by the *American Journal of Agricultural Economics*.

Based on sales data from supermarkets across four New York state regions, a .04 cent per-calorie tax on sugar-sweetened beverages is predicted to reduce the consumption of beverage calories by 9.3 percent versus a reduction of 8.6 percent from a half-cent per-ounce tax. Applying this percentage to beverages purchased from a variety of retail outlets, including supermarkets, convenience stores, corner stores, big-box stores, restaurants, etc., and assuming consumer purchasing behavior remains consistent across all venues, a 0.04 cent per-calorie tax would reduce total per person consumption by about 5,800 calories annually, while a half-cent per-ounce tax would achieve less of a reduction.

Compared with a hypothetical ounce-based tax that also achieves a 5,800 calorie reduction, the 0.04 cent tax is estimated to save consumers \$736 million per year nationwide. This estimation does not take into account the possible response from the beverage and grocery retail industries that could offset potential consumer savings.

A calorie-based sugar-sweetened beverage tax changes the relative price of all sugar-sweetened beverages, allowing consumers to choose from a wide selection of products at a variety of price points. When a .04 cent per-calorie tax is applied, consumers are likely to substitute for a lower-calorie beverage; however, when a comparable half-cent per-ounce tax is applied, consumers are likely to substitute for a less expensive, but potentially equal- or higher-calorie beverage.

This is the first major study to model three factors simultaneously: taxing sugar-sweetened beverages per calorie, accounting for consumers' substitution across beverages, and examining the financial impact on consumers. The study did not model whether the beverage and grocery retail industries would absorb some or all of the tax or whether potential extra costs could be folded into the retail price and passed on to consumers. The Robert Wood Johnson Foundation funded the study through its *Healthy Eating Research* national program.

"Our research shows that a calorie-based sugar-sweetened beverage tax may be more cost-effective for consumers than an ounce-based tax," said Chen Zhen, research economist at Research Triangle Institute and lead author of the study. "This is attributed to the fact that a tax on caloric content can achieve a reduction in calories consumed from sugar-sweetened beverages at less of a cost to the consumer than a volume-based tax."

Sugar-sweetened beverages, such as soda, energy drinks, sports drinks, and sweetened coffees and teas, add large numbers of calories to the diets of children and adults and are associated with an increased risk of chronic diseases, including type 2 diabetes, heart disease and obesity. Sugar-sweetened beverage taxes—whether they are calorie- or volume-based—have been proposed as a way to influence consumers' behavior to help prevent obesity, improve health, and provide funds for health-promotion efforts.

This latest study shows that a variety of pricing strategies can be used to incentivize healthier choices by consumers. Previous research showed that a 20 percent (within the range of one to two cents per ounce) increase in the price of sugar-sweetened beverages is estimated to reduce consumption by 24 percent.

Healthy Eating Research is a national program of the Robert Wood Johnson Foundation. The program supports research on environmental and policy strategies with strong potential to promote healthy eating among children to prevent obesity, especially among lower-income and racial and ethnic populations at highest risk for obesity. For more information, visit www.healthyeatingresearch.org.

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