

Reducing Excess Calorie Consumption By Substituting Water For Sugar-Sweetened Beverages

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Replacing consumption of sugar-sweetened beverages (SSBs) with water could eliminate an average of 235 excess calories per day among children and adolescents, according to a study published in the April 2009 *Archives of Pediatrics & Adolescent Medicine*. The study's authors conclude that such a replacement would be a simple and effective way to reduce excess intake of calories causing childhood overweight and obesity, as well as address dental cavities and other health problems associated with added sugar. And they predict no detrimental effects on nutrition.

"The evidence is now clear that replacing these 'liquid calories' with calorie-free beverage alternatives both at home and in schools represents a key strategy to eliminate excess calories and prevent childhood obesity," said Y. Claire Wang, MD, ScD, assistant professor of Health Policy and Management at Columbia University Mailman School of Public Health and the study's lead author.

Dr. Wang and colleagues analyzed what children and teens reported they ate and drank on two different days, using nationally representative data from the 2003-2004 National Health and Nutrition Examination Survey. They then estimated the impact of substituting water for SSBs on the total energy intake of youths ages two to 19.

No data suggest that youths increase their consumption of other foods and beverages to compensate for drinking fewer SSBs, and so every can of soda or fruit drink that is replaced by water means a net reduction of calories. Almost 90 percent of U.S. children and adolescents currently consume SSBs on any given day, including soda, fruit drinks, punches, sports drinks and sweetened tea, and the calories contained in these drinks can represent more than 10 percent of their total daily intake. There is growing evidence that sugar-sweetened beverage consumption is an important contributor to rising youth obesity rates in the United States.

"This study shows the substantial impact that replacing sugar-sweetened beverages with water could have," said C. Tracy Orleans, senior scientist and distinguished fellow at the Robert Wood Johnson Foundation, which co-funded the study along with the Centers for Disease Control and Prevention. "Reversing the rise in childhood obesity requires finding approaches like this to close the gap between daily energy intake and daily energy expenditure. Changes such as this one can potentially add up to significant benefits for the population as a whole."

In contrast to the caloric reduction noted when replacing SSBs with water, the researchers found no difference when replacing SSBs with milk. But they emphasized the calcium, protein and other nutritional benefits that reduced-fat milk provides, in contrast to most SSBs. Though the findings suggest that reducing SSB consumption may prevent unhealthy weight gain, the researchers say that widespread recommendations to decrease SSB consumption are unlikely to lead to unnecessary or harmful weight loss in healthy-weight or underweight teens.

A 2008 study by the same team of researchers found that children consume SSBs in a variety of locations-homes, schools, fast-food establishments and other restaurants. Up to 70 percent of the consumption occurs in the home environment, whereas seven to 15 percent of consumption occurs in schools.

"Making children and teens more active is important," Dr. Wang noted, "However, simply eliminating the extra calories they don't need from these sugary drinks can tip the energy balance in a major way." A typical 15-year-old boy would need to jog for 30 minutes in order to burn off the calories contained in a 12-oz can of soda. The alternative drink best suited to reduce excess caloric consumption is water.

"These beverages are nothing more than different forms of sugar water, which kids don't need." said Steven Gortmaker, PhD, professor of the Practice of Health Sociology at the Harvard School of Public Health and the senior author on the study. "Unless they are running marathons, which we do not recommend for kids, water is the best choice for quenching their thirst. It is also low cost, especially when it comes from a clean tap source."

Notes:**About the Mailman School of Public Health**

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