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Research Brief  
August 2015

# Is it Enough to Just Ban Soda From Schools to Reduce Consumption of Sugar-Sweetened Beverages?

## Introduction

The consumption of sodas and other sugar-sweetened beverages (SSB) has become a prominent public health concern because of the large volume of evidence linking it with obesity and other health problems. In response to these concerns, state and local policymakers in the U.S. have aggressively targeted adolescent soda consumption, often by banning the sale of soda in schools. Several studies have

reported that schools were less likely to sell soda if their state or school district had a policy banning soda sales in school.<sup>1,2,3,4</sup> Overall, the proportion of high school students in the United States who could purchase soda in school was cut in half in a five-year span, from 53.6 percent in 2006-2007 to 25.3 percent in 2010-2011.<sup>5</sup>

Trends in adolescent consumption of sugary sodas also reversed during this time, but evidence suggests that adolescents may be replacing soda with other SSBs. The decrease in soda consumption was balanced by a nearly equal increase in consumption of energy drinks and sports drinks. Adolescents often perceive these beverages as healthy alternatives to soda,<sup>6</sup> and beverage companies advertise them as such. However, sports drink consumption has been actively discouraged by the American Academy of Pediatrics (AAP) because of sports drinks' high calorie and sugar content.<sup>7</sup> Energy drink consumption has also been strongly discouraged by the AAP, American Medical Association<sup>8</sup> and International Society of Sports Nutrition<sup>9</sup> because energy drinks contain high amounts of caffeine and understudied additives such as taurine and guarana.

The Institute of Medicine (IOM) recommends that the selling and serving of all SSBs be banned in schools, but this degree of restriction is rare. In 2010-11, 47 percent of high school students were in a district that banned soda in vending machines, but only 6 percent were in a district that banned all SSBs in vending machines. In the same year, 87.8 percent of high school students nationwide reported having access to some type of SSB in school.<sup>10</sup> State laws that ban selling and serving of all SSBs in high schools are virtually nonexistent.<sup>11</sup>

This study was designed to analyze substitution patterns, particularly examining whether high school students in states that banned soda in school consumed more sports drinks, energy drinks, and other SSBs. The study linked student data from the National Youth Physical Activity and Nutrition Study (NYPANS), conducted by the Centers for Disease Control and Prevention (CDC) in spring 2010, with state laws regarding the sale of soda in school venues during the 2009-10 school year. NYPANS measured several items, including diet, physical activity, sedentary behaviors, height and weight in a nationally representative sample of 9th-12th grade students.

Students were asked to report the number of times they consumed several different beverages in the previous seven days, including consumption both in and out of school. Students also reported whether the school had "a vending machine that students can use to purchase soda or pop, sports drinks, or fruit drinks that are not 100% juice." Laws regarding the availability of soda in high school vending machines, school stores, and cafeterias (a la carte) in the 2009-2010 school year were obtained from the Westlaw and Lexis-Nexis legal research databases. The final study sample included 8,696 students in 27 states.

## Key Findings

Overall, students consumed soda an average of 5.4 times per week. Among the SSBs that were analyzed in this study, 'other SSBs' such as fruit drinks (with less than 100 percent fruit juice) were the most heavily consumed, followed by sports drinks.

- Students in states with no soda ban were more likely to report having access to SSB vending machines (84.0 percent), but such vending machines were still widely available in states with soda bans (68.9 percent).
- Non-soda SSB consumption tended to be higher if states banned soda in school but students still had access to vending machines that sold sweetened beverages, compared to when states did not ban soda and students had

access to such vending machines. For example, students who had access to vending machines in a state that banned soda consumed 1.25 times as many servings of sports drinks in the past 7 days; they also consumed more energy drinks, coffee/tea, and other SSBs. Similarly, students who attended a school with no vending machines in a state that allowed soda, consumed more diet soda, sports drinks, energy drinks, and sweetened coffee/tea.

- Non-Hispanic Blacks consumed 1.70 times as many energy drinks and 1.49 times as many sports drinks if they resided in a state that banned soda in schools but had in-school access to vending machines.

## Conclusions and Policy Implications

Policies have been very successful in removing soda from schools, as intended, but this study raises questions of how students may be compensating for such changes. This study found that students tended to consume more sports drinks, energy drinks, sweetened coffee/tea, and other SSBs if they resided in a state that only banned soda in schools. These trends were most apparent where the state banned soda at schools but students still had access to vending machines that sold sweetened beverages.

This study raises concerns about whether policymakers' focus on soda may have unintended negative consequences at the high school level, as laws that ban soda were associated with higher intake of other SSBs when vending machines were still available. The study suggests that state soda bans were, at best, not addressing the beverage consumption patterns of the adolescent populations in these states. Adolescents' overall SSB preferences have shifted in the United States, but high school SSB policies have not followed suit even though high school is a period when children tend to consume the most SSBs. Existing policies may need to be expanded to restrict the sale of all SSBs, in accordance with IOM recommendations, and ensure that students are able to access low-cost healthier alternatives in school.

This research summary is based on: Taber DR, Chriqui JF, Vuillaume R, Kelder SH, Chaloupka FJ. The association between state bans on soda only and adolescent substitution with other sugar-sweetened beverages: a cross-sectional study. *International Journal of Behavioral Nutrition and Physical Activity*. 2015.

This study was supported by the Robert Wood Johnson Foundation, through a grant to the Bridging the Gap program at the University of Illinois at Chicago, and by grant number 4R00HD073271-02 from the National Institute of Child Health and Human Development (PI: Daniel Taber). Publication costs for this article were funded by the Michael & Susan Dell Foundation through resources provided at the Michael & Susan Dell Center for Healthy Living, The University of Texas School of Public Health, Austin Regional Campus.

### Endnotes

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**Suggested Citation:** Taber DR, Chriqui JF, Vuillaume R, Kelder SH, Chaloupka FJ. *Is it Enough to Just Ban Soda From Schools to Reduce Consumption of Sugar-Sweetened Beverages?* A BTG Research Brief. Chicago, IL: Bridging the Gap Program, Health Policy Center, Institute for Health Research and Policy, University of Illinois at Chicago; 2015.

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