Clinical Chemistry 64:1
42–43 (2018)

Opinions

Taxes on Sugar-Sweetened Beverages Reach a Turning Point

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If there is one widely consumed comestible whose nutritional benefits approach zero and whose damaging potential is well-documented *(1–3)*, it is the sugar-sweetened beverage (SSB)[2]. This category includes a litany of drinks, beginning with the traditional (cane sugar- or corn syrup-sweetened) soda, and it expands to feature sport drinks, sweetened teas, fruit punches and lemonades, and beverages bearing misleading names such as "Vitamin Water." What they have in common is few or no nutrients and an abundance of sugar. The documented harm of SSBs on human health, particularly among children and adolescents, ranges from dental caries to obesity, hyperactivity, and diabetes *(2–4)*. Yet their low price and nearly addictive nature, coupled with heavy, clever marketing campaigns, has made the consumption of these beverages ubiquitous.

Thus was born the notion of a tax on SSBs, which is being considered by more and more countries around the world that are confronting the global obesity epidemic as a fiscal measure to discourage consumption. The goal (either explicitly stated or otherwise) is twofold: one, by raising their prices, to lower their consumption, and two, by garnering tax revenue, potentially toward funding local public health and education efforts. In the US, even though most states already impose sales tax on SSBs, levying a higher tax of at least 10%–20% as suggested by experts *(5, 6)* is the subject of heated debate. Like other policy and regulatory efforts by public health officials to discourage the consumption of SSBs, tax proposals have routinely run into a wall of marketing to influence public opinion by beverage manufacturers who typically outspend public health campaigns by orders of magnitude. The beverage industry also deploys tactics such as forming or sponsoring seemingly grassroots "coalitions" with names such as *Americans Against Food Taxes* to influence public opinion *(7)*.

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Received June 13, 2017; accepted October 6, 2017.
Previously published online at DOI: 10.1373/clinchem.2017.272310

[2] Nonstandard abbreviation: SSB, sugar-sweetened beverage.

In 2012, Mexico instituted a nationwide peso-per-liter SSB (and junk food) tax. Within 2 years, soda consumption decreased by about 10% and both tax income and water consumption increased *(8)*. In the US, a number of state and municipal jurisdictions, including New York City (where the local government passed a tax, only to have it overridden by the state), tried and failed to pass taxes until, in 2014, Berkeley, CA, became the first city to pass a 1-cent-per-ounce tax. By February 2016, the tax resulted in a reduction in SSB sales by nearly 10% ($P <$ 0.001), accompanied by an increase in water sales of 15.6%, as well as higher sales of fruit, vegetables, teas, and milk *(9)*. In October 2016, the World Health Organization declared that "Fiscal policies that lead to at least a 20% increase in the retail price of sugary drinks would result in proportional reductions in consumption of such products." *(6)*.

Encouraged by these results, Philadelphia (PA), Boulder (CO), Cook County (IL), and several cities/counties in California (San Francisco, Richmond, Oakland, and Albany) voted "yes" on SSB taxes by the end of 2016. The anticipated tax revenue ranges from $200,000 per year in Albany, CA, to $224 million per year in Cook County, IL. A host of other cities, states, and jurisdictions are now actively considering them. Although most advocates agree on the 2-pronged benefits of the SSB tax—reducing SSB consumption and raising tax revenue for health promotion initiatives—many jurisdictions (e.g. Berkeley, CA, Cook County, IL) have simply steered the tax revenue into their general funds to lower the bar of passing the tax and/or to retain flexibility of spending. With the looming cuts on federal funds to states and localities, it will not be surprising if more states and cities consider similar proposals in the years to come. Globally, aside from Mexico, taxes on SSBs are in various stages of political processes in the UK, Spain, France, South Africa, Brazil, and numerous other nations.

The beverage industry fights against these taxes, of course, but their input can be discounted as partial. Two arguments are frequently put forward in these discussions. The beverage industry usually maintains that taxes on SSBs are regressive, which means they disproportionately affect low-income households. As is the case with corrective taxes such as those on cigarettes and alcohol, this is often true. But research has found that the regressivity (difference in tax burden between higher- and lower-income households) is of a small degree *(10, 11)*, partially because low-income consumers are more price-sensitive and typically purchase sugary drinks at a lower price. Further, many low-income households are bearing the greatest health and financial risks for diseases associated with SSB consumption. If the tax collected is directed to fund public programs and infrastructure that disproportionally benefit children and adults from resource-poor communities, the overall benefit can turn out to be progressive. The other argument is that by decreasing consumption of SSBs, taxes would cause production to fall and may cost jobs. This industry claim has not been grounded in evidence and the true effect may be proven to be the opposite *(12)*.

Taxes on SSBs will likely remain in the public debate for the time being, and there are knowledge gaps to be filled, hence, continued evaluation and empirical research on the ground are imperative. More importantly, there are diverse policy and politics contexts of taxing unhealthy food and beverages across jurisdictions, reflecting diverse ideologies, policy rationales, and administrative practicality *(10)*. For instance, earmarking tax revenue for health programs frequently increases public support for the tax, but a fiscal policy mechanism has to exist to allow it and the allocation of collected funds requires follow-through. Moreover, most taxes to date (except for Philadelphia) have excluded diet drinks, but the question of diet drinks has been raised. While the safest, healthiest, least expensive beverage is unquestionably water, the evidence is scarce regarding the long-term health impact of diet beverages, as well as whether the exclusion of diet drinks potentially results in consumer confusion. Finally, alternative or complementary approaches such as tiered taxation based on sugar content and marketing restrictions under various political contexts are worth exploring, both from research and practice perspectives.

Author Contributions: *All authors confirmed they have contributed to the intellectual content of this paper and have met the following 3 requirements: (a) significant contributions to the conception and design, acquisition of data, or analysis and interpretation of data; (b) drafting or revising the article for intellectual content; and (c) final approval of the published article.*

Authors' Disclosures or Potential Conflicts of Interest: *No authors declared any potential conflicts of interest.*

References

1. Malik VS, Pan A, Willett WC, Hu FB. Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis. Am J Clin Nutr 2013;98:1084–102.
2. Gortmaker SL, Long MW, Wang YC. The negative impact of sugar-sweetened beverages on children's health: a research synthesis. http://healthyeatingresearch.org/research/the-negative-impact-of-sugar-sweetened-beverages-on-childrens-health-a-research-synthesis/. 2009 November. Report No.: 1037. (Accessed September 2017).
3. Imamura F, O'Connor L, Ye Z, Mursu J, Hayashino Y, Bhupathiraju SN, et al. Consumption of sugar sweetened beverages, artificially sweetened beverages, and fruit juice and incidence of type 2 diabetes: systematic review, meta-analysis, and estimation of population attributable fraction. BMJ 2015;351:h3576.
4. Avery A, Bostock L, McCullough F. A systematic review investigating interventions that can help reduce consumption of sugar-sweetened beverages in children leading to changes in body fatness. J Hum Nutr Diet 2015;28 Suppl 1:52–64.
5. Brownell KD, Farley T, Willett WC, Popkin BM, Chaloupka FJ, Thompson JW, et al. The public health and economic benefits of taxing sugar-sweetened beverages. N Engl J Med 2009;36:1599–605.
6. Fiscal policies for diet and the prevention of noncommunicable diseases. Technical Meeting Report. Geneva, Switzerland: World Health Organization, 2016 May 5–6, 2015. Report No.
7. Yanamadala S, Bragg MA, Roberto CA, Brownell KD. Food industry front groups and conflicts of interest: the case of Americans Against Food Taxes. Public Health Nutr 2012;15:1331–2.
8. Colchero MA, Rivera-Dommarco J, Popkin BM, Ng SW. In Mexico, evidence of sustained consumer response two years after implementing a sugar-sweetened beverage tax. Health Aff 2017;36:564–71.
9. Silver LD, Ng SW, Ryan-Ibarra S, Taillie LS, Induni M, Miles DR, et al. Changes in prices, sales, consumer spending, and beverage consumption one year after a tax on sugar-sweetened beverages in Berkeley, California, US: a before-and-after study. PLoS Med 2017;14: e1002283.
10. Hagenaars LL, Jeurissen PPT, Klazinga NS. The taxation of unhealthy energy-dense foods (EDFs) and sugar-sweetened beverages (SSBs): an overview of patterns observed in the policy content and policy context of 13 case studies. Health Policy 2017;121: 887–94.
11. Finkelstein EA, Zhen C, Nonnemaker J, Todd JE. Impact of targeted beverage taxes on higher- and lower-income households. Arch Int Med 2010;170: 2028–34.
12. Powell LM, Wada R, Persky JJ, Chaloupka FJ. Employment impact of sugar-sweetened beverage taxes. Am J Public Health 2014;104:672–7.