

Health impacts of sweet beverage taxes

Real-world evidence



OUTCOMES:

- Body weight/
Body Mass Index
- Asthma
- Dental caries
- Perinatal health

Nutrition transitions and the associated rise in the rates of overweight/obesity and other diet-related diseases like type 2 diabetes have developed over decades. As such, we can expect that population-level dietary improvements in response to policy implementation will take several years to positively impact rates of obesity and other diet-related diseases.

Moreover, no single policy is a magic bullet. Simultaneous adoption of multiple, mutually-reinforcing policies will be needed to move the needle on diet-related disease rates (including supply-side interventions). Very few countries to date have adopted multi-policy packages, and they have only done so relatively recently. For example, Chile began implementing Phase 1 of its combined front-of-package labeling, marketing, and school food policies in 2016.

Evaluations have thus far focused on shorter-term outcomes like changes in purchases or sales of unhealthy products as a proxy of what people are consuming. Enough is known about the causal pathway of obesity to be confident that positive dietary shifts will have some impact on body weight. A large and growing body of evidence consistently demonstrates that sweetened beverage taxes and front-of-package labeling — the two most widely adopted and evaluated policies — are contributing to positive shifts in what people are purchasing. This is a necessary step for reducing rates of overweight/obesity and other diet-related diseases.

Evidence of sweetened beverage taxes' positive health impacts is now starting to emerge. Of all our priority policies, sweetened beverage taxes have been most widely implemented and for longer periods of time; moreover, many places have only adopted these taxes (without other complementary policies), making its association with health outcomes more straightforward than in cases where multiple policies are simultaneously adopted.

To date, 14 studies evaluating sweetened beverage taxes from different countries and across different populations have been published. In most cases, these find positive health impacts, including on weight/body mass index (BMI), dental caries, perinatal outcomes, and even childhood asthma. (See [bibliography below](#).) In some studies, impacts were not found for the overall population but were found for more vulnerable groups (e.g., lower-income). In some studies with positive overall impacts, the effects were even larger for some vulnerable populations. Taken together, these findings have potentially important implications for improving health equity. Gaps remain in research evaluating impacts on other diet-related diseases such as type 2 diabetes and cardiovascular disease, which are expected to take more time to improve after changes in consumption.

Bibliography of studies to date:

OUTCOME:

Body weight or Body Mass Index

Positive impacts:

City-level sugar-sweetened beverage taxes and youth Body Mass Index percentile. Jul. 31, 2024, [JAMA](#)

This cohort study found that 4–6 years after implementation of SSB excise taxes, youth living in cities with taxes (Albany, Berkeley, Oakland, and San Francisco) had significantly lower BMI percentiles compared to youth living in control cities without taxes. Significant associations were noted for children under age 12, males, white and Asian youth, and youth with obesity, and were particularly high in Berkeley and San Francisco.

Sweetened beverage tax implementation and change in Body Mass Index among children in Seattle. May 29, 2024, [JAMA](#)

In this cohort study, the [Seattle tax](#) was associated with a larger decrease in BMI_{p95} for children living in Seattle compared with children living in a comparison area with no tax, two years after implementation.

Soda taxes, consumption, and health outcomes for high school students. Jan. 2024, [Economics Letters](#)

Using data from the Youth Risk Behavioral Surveillance System (YRBS) survey, researchers found BMI reductions of 1.3% among high school students roughly four years after implementation of SSB taxes in Philadelphia, Oakland, and San Francisco, with larger effects for females and non-white respondents.

Do sugar-sweetened beverage taxes improve public health for high school aged adolescents? Jan. 2023, [Health Economics](#)

Sweetened beverage taxes in three US cities (Philadelphia, San Francisco, and Oakland) were associated with decreased average BMI among high school students, with evidence suggesting improvements were concentrated among female and non-white students.

Associations between trajectories of obesity prevalence in English primary school children and the UK Soft Drinks Industry Levy: an interrupted time series analysis of surveillance data. Jan. 2023, [PLOS Med](#)

Nineteen months after the UK Soft Drinks Industry Levy was implemented, there was an 8% relative reduction in obesity among girls aged 10/11 years — equivalent to prevention of 5,234 cases of obesity per year in this group. Reductions were greatest in girls whose school was in the 40% most deprived areas. No associations were found between the Soft Drinks Industry Levy and changes in obesity for boys aged 10/11 years or younger children aged 4/5 years.

Continued ►



OUTCOME:
**Body weight
or Body
Mass Index**
(continued)

Mixed or no significant impacts:

Associations of the Philadelphia sweetened beverage tax with changes in adult body weight: an interrupted time series analysis.

Oct. 2024, [The Lancet Regional Health – Americas](#)

Three years after Philadelphia began taxing sweetened beverages, adults in a cross-sectional sample saw a statistically significant BMI decrease of -0.60 kg/m^2 from before the tax. A separate panel sample of adults saw a BMI decrease of -0.32 kg/m^2 over the three-year period, but this difference was not statistically significant. Despite this, consistent trends across study designs suggest a potential reduction in adult body weight and obesity prevalence following the tax.

The Philadelphia Beverage Tax and Pediatric Weight Outcomes.

Nov. 2024, [JAMA](#)

Two years after implementation of the Philadelphia beverage tax, there were no observed changes in youth zBMI or obesity prevalence. Some subgroup analyses revealed changes based on race, age, weight, and Medicaid status, but these differences were minor, inconsistent, and not clinically meaningful.

Changes in weight-related outcomes among adolescents following consumer price increases of taxed sugar-sweetened beverages.

Dec. 13, 2021, [JAMA Pediatrics](#)

Pass-through of Mexico's tax was associated with reduced obesity prevalence among adolescent girls, but not boys. A 10% increase in SSB prices was associated with a 3% relative decrease in prevalence of overweight or obesity among adolescent girls. Improved weight-related outcomes were small and largely observed in girls with higher weight and in cities where price increases were greater than 10% after the tax.

The effect of beverage taxes on youth consumption and body mass index: Evidence from Mauritius. March 2022, [Health Economics](#)

No significant association between the Mauritius sugar-sweetened beverage tax and change in BMI was observed among boys or girls.

OUTCOME:
Asthma

The UK Soft Drinks Industry Levy and childhood hospital admissions for asthma in England. June 10, 2024, [Nature Communications](#)

Twenty-two months after implementation, the UK Soft Drinks Industry Levy was associated with an overall 21% reduction in hospital admissions for asthma in children ages 5–18 years. Reductions were seen across all areas of deprivation and age groups. These findings suggest that implementation of a tax intended to reduce childhood obesity may have contributed a significant unexpected and additional public health benefit in the form of reduced hospital admissions for childhood asthma.



OUTCOME: Dental caries

Taxes to unhealthy food and beverages and oral health in Mexico: an observational study. April 2021, [Caries Research](#)

Implementation of Mexico's SSB tax was associated with a reduction in outpatient visits related to dental caries, lower probability of having experienced dental caries (for all age groups except children under 5 years old), and fewer teeth with caries. After the tax began, immediate reductions in the number of individuals having experienced dental caries and mean number of teeth with caries were also found.

Estimated impact of the UK Soft Drinks Industry Levy on childhood hospital admissions for carious tooth extractions: interrupted time series analysis. November 2023, [BMJ Nutrition, Prevention, and Health](#)

Dental extractions due to caries is the number one reason for children's elective hospital admissions in England. Nearly two years after the Soft Drinks Industry Levy came into force, incident rates of hospital admissions for carious tooth extractions fell 12% in children compared with a counterfactual scenario of no levy implementation.

Changes in dental outcomes after implementation of the Philadelphia beverage tax. February 2023, [American Journal of Preventive Medicine](#)

The Philadelphia beverage tax was not associated with reduced tooth decay in the general population, but it was associated with reduced tooth decay in adults and children on Medicaid, suggesting potential health benefits for low-income populations.

OUTCOME: Perinatal health

Sugar-sweetened beverage taxes and perinatal health: a quasi-experimental study. March 2023, [American Journal of Preventive Medicine](#)

A study of perinatal health following the implementation of five sub-national SSB taxes in the United States (in Berkeley, Philadelphia, Oakland, San Francisco, and Seattle) found that the taxes were associated with reduced risk of gestational diabetes, lower maternal weight-gain-for-gestational-age, and lower risk of infants born small for gestational age.

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