

Preventing NCDs Using Pricing Policies

Table A.1. Select examples of unhealthy beverage and food taxes (collected from distributors, manufacturers, or importers) and findings to date

Examples of sites with excise taxes	Brief description of tax	Price change	Volume sales or purchases change of taxed products	Intake change of taxed products	Other changes	Revenue use	Other gaps in knowledge
Berkeley, CA (since March 2015)	1 cent/oz excise tax ^a on SSBs	↑ ^{b-d}	↓ ^b	↔ ^b ↓ ^{e,f}	↔ Un/employment	Determined by committee/ advisory board ^g	Small geographical area (partially addressed by SSB taxes implemented in neighboring localities); relatively low baseline levels of SSB consumption
Oakland, CA (since July 2017)	1 cent/oz excise tax on SSBs	↑ ^{h,i} ↔ ⁱ	↔ ^h	↔ ^h	↓ Price promotions ^j	Determined by committee/ advisory board ^g	
Seattle, WA (since Jan 2018)	1.75 cent/oz excise tax on SSBs	↑ ^k	↓ ^k	TBD	TBD	Determined by Community Advisory Board 2020: \$3 million for fruit & vegetable vouchers; \$6 million for COVID-19 grocery vouchers ^l	Some indication of cross-border shopping
Philadelphia, PA (since Jan 2017)	1.5 cent/oz excise tax on both SSBs and artificially sweetened beverages	↑ ^m	↓ ^{m,n}	↓/↔ ⁿ ↓/↔ ^{o,p}	↔ Employment ^{q,r}	Office of Education (early childhood education slots) and general budget ^s	Some indication of cross-border shopping
Mexico (since Jan 2014)	1 peso/liter excise tax on SSBs	↑ ^t	↓ ^{u-x}	↓ ^y	↔ un/employment ^z ↓ (modeled) NCDs, mortality and healthcare costs ^{aa,bb}	General budget	Manufacturer response in terms of reformulations
	8% excise tax on non-essential foods with >275 kcals/100 g		↑ ^{cc}		↔ Un/employment ^z	General budget	Manufacturer response in terms of reformulations
United Kingdom (since April 2018)	18 pence/liter for low sugar (5–8 g sugar); 24 pence/liter for high sugar (>8 g sugar) among SSBs; excise tax	↑ ^{dd}	↓	TBD	↔ Sugar ^{ee} ↓ Sugar content ↓ High sugar product availability ↓ Product size (store brands) ^{dd} ↔ Stock market value ^{ff}	General budget	Impact of reformulations with artificial sweeteners unknown
South Africa (since April 2018)	0.021 ZAR/gram of sugar in 100 mL of ready-to-drink SSBs above 4 g sugar excise tax	↑ ^{gg}	↓ ^{hh}	↓ ⁱⁱ	↓ Sugar and calories ^{hh,ii}	General budget (small % given to Dept. of Health)	Impact of reformulations with artificial sweeteners unknown

(continued)

Table A.1. Select examples of unhealthy beverage and food taxes (collected from distributors, manufacturers, or importers) and findings to date *(continued)*

Examples of sites with excise taxes	Brief description of tax	Price change	Volume sales or purchases change of taxed products	Intake change of taxed products	Other changes	Revenue use	Other gaps in knowledge
Saudi Arabia (since June 2017)	50% excise tax on carbonated beverages	↑ ^{jj}	↓ ^{jj}			General budget ^{kk}	
India (since July 2017)	40% sales tax ^{ll} on aerated drinks and lemonades collected at point of sale to consumers		↔ ^{mm}			General budget	
Hungary (since September 2011)	Excise taxes for different unhealthy beverages and foods: <ul style="list-style-type: none"> • Soft drinks: 7 forints/liter, concentrated syrups: 200 forints/liter, and pre-packaged sugar-sweetened products: 130 forints/kg • Products with >1 g salt/100 g, condiments with >5 g salt/100 g, flavorings with >15 g salt/100 g: 100 forints/kg 		↓ ⁿⁿ	↓ ^{oo}	↓ Sugar content, ↓ Sodium content ^{oo}	Increased wages of healthcare workers ^{oo}	Impact of reformulations with artificial sweeteners unknown

Notes: ↓ = decrease; ↔ = no effect; ↑ = increase; SSB = sugar-sweetened beverage; TBD = to be determined from ongoing research studies.

- a Excise taxes are levied on and collected from manufacturers/distributors/importers.
- b 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(4):e1002283. <https://doi.org/10.1371/journal.pmed.1002283>
- c Falbe J, Rojas N, Grummon AH, Madsen KA. Higher retail prices of sugar-sweetened beverages 3 months after implementation of an excise tax in Berkeley, California. *Am J Public Health* 2015;105(11):2194–201. <https://doi.org/10.2105/AJPH.2015.302881>
- d Cawley J, Frisvold DE. The pass-through of taxes on sugar-sweetened beverages to retail prices: the case of Berkeley, California. *J Policy Anal Manage* 2017;36(2):303–26. <https://doi.org/10.1002/pam.21960>
- e Falbe J, Thompson HR, Becker CM, Rojas N, McCulloch CE, Madsen KA. Impact of the Berkeley excise tax on sugar-sweetened beverage consumption. *Am J Public Health* 2016;106(10):1865–71. <https://doi.org/10.2105/AJPH.2016.303362>
- f Lee MM, Falbe J, Schillinger D, Basu S, McCulloch CE, Madsen KA. Sugar-sweetened beverage consumption 3 years after the Berkeley, California, sugar-sweetened beverage tax. *Am J Public Health* 2019;109(4):637–9. <https://doi.org/10.2105/AJPH.2019.304971>
- g Bennet S, Draper N, Farnsworth I, McBride F. The Bay Area sugar-sweetened beverage taxes: an evaluation of community investments. *Praxis Project and the Berkeley Food Institute*; 2019.
- h Cawley J, Frisvold D, Hill A, Jones D. Oakland's sugar-sweetened beverage tax: impacts on prices, purchases and consumption by adults and children. *Econ Hum Biol* 2020;37:100865. <https://doi.org/10.1016/j.ehb.2020.100865>
- i Marinello S, Pipito AA, Leider J, Pugach O, Powell LM. The impact of the Oakland sugar-sweetened beverage tax on bottled soda and fountain drink prices in fast-food restaurants. *Prev Med Rep* 2019;17:101034. <https://doi.org/10.1016/j.pmedr.2019.101034>
- j Zenk SN, Leider J, Pugach O, Pipito AA, Powell LM. Changes in beverage marketing at stores following the Oakland sugar-sweetened beverage tax. *Am J Prev Med* 2020;58(5):648–56. <https://doi.org/10.1016/j.amepre.2019.12.014>
- k Powell LM, Leider J. The impact of Seattle's Sweetened Beverage Tax on beverage prices and volume sold. *Econ Hum Biol* 2020;37:100856. <https://doi.org/10.1016/j.ehb.2020.100856>
- l Scruggs G. Seattle turns soda tax revenue into emergency grocery vouchers during pandemic. *Next City*. 2020 Mar;2020:30.
- m Roberto CA, Lawman HG, LeVasseur MT, Mitra N, Peterhans A, Herring B et al. Association of a beverage tax on sugar-sweetened and artificially sweetened beverages with changes in beverage prices and sales at chain retailers in a large urban setting. *JAMA* 2019;321(18):1799–810. <https://doi.org/10.1001/jama.2019.4249>
- n Cawley J, Frisvold D, Hill A, Jones D. The impact of the Philadelphia beverage tax on purchases and consumption by adults and children. *J Health Econ* 2019;67:102225. <https://doi.org/10.1016/j.jhealeco.2019.102225>
- o Zhong Y, Auchincloss AH, Lee BK, Kanter GP. The short-term impacts of the Philadelphia beverage tax on beverage consumption. *Am J Prev Med* 2018;55(1):26–34. <https://doi.org/10.1016/j.amepre.2018.02.017>
- p Zhong Y, Auchincloss AH, Lee BK, McKenna RM, Langellier BA. Sugar-sweetened and diet beverage consumption in Philadelphia one year after the beverage tax. *Int J Environ Res Public Health* 2020;17(4):1336. <https://doi.org/10.3390/ijerph17041336>
- q Office of the Mayor, Department of Revenue. Data Released Demonstrating Strong Employment in Sectors Affected by PBT. 2018 Apr 11 [cited 2018 Apr 20]. <https://beta.phila.gov/2018-04-11-data-released-demonstrating-strong-employment-in-sectors-affected-by-pbt/>
- r Lawman HG, Bleich SN, Yan J, LeVasseur MT, Mitra N, Roberto CA. Unemployment claims in Philadelphia one year after implementation of the sweetened beverage tax. *PLoS One* 2019;14(3):e0213218. <https://doi.org/10.1371/journal.pone.0213218>
- s Data Release: Beverage Tax Revenue and Expenditures. 2019. <https://controller.phila.gov/philadelphia-audits/data-release-beverage-tax/>

(table footnotes continued)

Table A.1. Select examples of unhealthy beverage and food taxes (collected from distributors, manufacturers, or importers) and findings to date *(footnotes continued)*

- ^t Colchero MA, Salgado JC, Unar-Munguía M, Molina M, Ng S, Rivera-Dommarco JA. Changes in prices after an excise tax to sweetened sugar beverages was implemented in Mexico: evidence from urban areas. *PLoS One* 2015;10(12):e0144408. <https://doi.org/10.1371/journal.pone.0144408>
- ^u Ng SW, Rivera JA, Popkin BM, Colchero MA. Did high sugar-sweetened beverage purchasers respond differently to the excise tax on sugar-sweetened beverages in Mexico? *Public Health Nutr* 2018 Dec;22(4):1–7.
- ^v Colchero MA, Guerrero-López CM, Molina M, Rivera JA. Beverages sales in Mexico before and after implementation of a sugar sweetened beverage tax. *PLoS One* 2016;11(9):e0163463. <https://doi.org/10.1371/journal.pone.0163463>
- ^w Colchero MA, Popkin BM, Rivera JA, Ng SW. Beverage purchases from stores in Mexico under the excise tax on sugar sweetened beverages: observational study. *BMJ* 2016;352:h6704. <https://doi.org/10.1136/bmj.h6704>
- ^x 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 (Millwood)* 2017;36(3):564–71. <https://doi.org/10.1377/hlthaff.2016.1231>
- ^y Sánchez-Romero LM, Canto-Osorio F, González-Morales R, Colchero MA, Ng SW, Ramírez-Palacios P et al. Association between tax on sugar sweetened beverages and soft drink consumption in adults in Mexico: open cohort longitudinal analysis of Health Workers Cohort Study. *BMJ* 2020;369:m1311. <https://doi.org/10.1136/bmj.m1311>
- ^z Guerrero-López CM, Molina M, Colchero MA. Employment changes associated with the introduction of taxes on sugar-sweetened beverages and nonessential energy-dense food in Mexico. *Prev Med* 2017;105(Supplement):S43–9. <https://doi.org/10.1016/j.ypmed.2017.09.001>
- ^{aa} Barrientos-Gutiérrez T, Zepeda-Tello R, Rodríguez ER, Colchero-Aragónés A, Rojas-Martínez R, Lazcano-Ponce E et al. Expected population weight and diabetes impact of the 1-peso-per-litre tax to sugar sweetened beverages in Mexico. *PLoS One* 2017;12(5):e0176336.
- ^{bb} Sánchez-Romero LM, Penko J, Coxson PG, Fernández A, Mason A, Moran AE et al. Projected impact of Mexico's sugar-sweetened beverage tax policy on diabetes and cardiovascular disease: a modeling study. *PLoS Med* 2016;13(11):e1002158. <https://doi.org/10.1371/journal.pmed.1002158>
- ^{cc} Batis C, Rivera JA, Popkin BM, Taillie LS. First-year evaluation of Mexico's tax on nonessential energy-dense foods: an observational study. *PLoS Med* 2016;13(7):e1002057. <https://doi.org/10.1371/journal.pmed.1002057>
- ^{dd} Scarborough P, Adhikari V, Harrington RA, Elhussein A, Briggs A, Rayner M et al. Impact of the announcement and implementation of the UK Soft Drinks Industry Levy on sugar content, price, product size and number of available soft drinks in the UK, 2015–19: A controlled interrupted time series analysis. *PLoS Med* 2020;17(2):e1003025. <https://doi.org/10.1371/journal.pmed.1003025>
- ^{ee} Bandy LK, Scarborough P, Harrington RA, Rayner M, Jebb SA. Reductions in sugar sales from soft drinks in the UK from 2015 to 2018. *BMC Med* 2020;18(1):20. <https://doi.org/10.1186/s12916-019-1477-4>
- ^{ff} Law C, Cornelsen L, Adams J, Penney T, Rutter H, White M et al. An analysis of the stock market reaction to the announcements of the UK Soft Drinks Industry Levy. *Econ Hum Biol* 2020;38:100834. <https://doi.org/10.1016/j.ehb.2019.100834>
- ^{gg} Stacey N, Mudara C, Ng SW, van Walbeek C, Hofman K, Edoka I. Sugar-based beverage taxes and beverage prices: Evidence from South Africa's Health Promotion Levy. *Soc Sci Med* 2019;238:112465. <https://doi.org/10.1016/j.socscimed.2019.112465>
- ^{hh} Stacey N, Edoka I, Hofman K, Swart R, Popkin B, Ng SW. Changes in beverage purchases following the announcement and implementation of South Africa's Health Promotion Levy: an observational study. *Lancet Planetary Health* 5(4):E200–8. [https://doi.org/10.1016/S2542-5196\(20\)30304-1](https://doi.org/10.1016/S2542-5196(20)30304-1)
- ⁱⁱ Essman M, Taillie L, Ng S, Popkin B, Jenkins T, Swart R. Taxed and untaxed beverage consumption by young adults in Langa, South Africa before and one year after a national sugar-sweetened beverage tax. *PLoS Med* 2021;18(5):e1003574. <https://doi.org/10.1371/journal.pmed.1003574>
- ^{jj} Alsukait R, Wilde P, Bleich SN, Singh G, Folta SC. Evaluating Saudi Arabia's 50% carbonated drink excise tax: changes in prices and volume sales. *Econ Hum Biol* 2020;38:100868. <https://doi.org/10.1016/j.ehb.2020.100868>
- ^{kk} Alsukait R, Bleich S, Wilde P, Singh G, Folta S. Sugary drink excise tax policy process and implementation: case study from Saudi Arabia. *Food Policy* 2020;90:101789. <https://doi.org/10.1016/j.foodpol.2019.101789>
- ^{ll} Sales taxes are collected at point of sale from shoppers.
- ^{mmm} Law C, Brown KA, Green R, Venkateshmurthy NS, Mohan S, Scheelbeek PFD, et al. Changes in take-home aerated soft drink purchases in urban India after the implementation of Goods and Services Tax (GST): an interrupted time series analysis. *SSM Pop Health* 2021;14:100794. <https://doi.org/10.1016/j.ssmph.2021.100794>
- ⁿⁿ Bíró A. Did the junk food tax make the Hungarians eat healthier? *Food Policy* 2015;54:107–15.
- ^{oo} World Health Organization–Europe. Assessment of the impact of a public health product tax. Geneva (Switzerland): WHO; 2015.