



Junk food and sugar-sweetened beverage taxes: Likely to produce numerous benefits in NZ

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Poor diet is a major risk factor for excess weight gain and obesity-related diseases, including cardiovascular diseases, type 2 diabetes mellitus, osteoarthritis, and multiple cancers. In this blog we summarise <u>our recent</u> <u>modelling work</u> that suggests that the implementation of taxes on unhealthy foods and beverages in Aotearoa New Zealand (NZ) will lead to health gains, health system cost-savings, and reductions in health inequalities.

Introduction

Poor diet (containing energy-dense foods with high levels of sugar and fat) is an important driver of the global obesity epidemic.[1-4] Moreover, both poor diet and obesity are major risk factors for noncommunicable diseases, including cardiovascular diseases, type 2 diabetes, musculoskeletal disorders (eg, osteoarthritis), and certain forms of cancer (eg, endometrial, breast, ovarian, prostate, liver, gallbladder, kidney, and colon).[1, 3, 5, 6] The global food system is also a driver of GHG emissions,[7] meaning changes in consumer

diets can contribute to reducing greenhouse gas (GHG) emissions – which in turn can mitigate the indirect effects of climate change back onto human health.[8, 9]

The World Health Organization (WHO) has specifically recommended taxation of unhealthy foods and beverages as a tool to address obesity and noncommunicable diseases in children and adults.[10, 11] To date, at least 40 different jurisdictions (including cities, states, and countries) have implemented taxes on sugar-sweetened beverages (SSB).[12-14] There are a number of different types of policies that have been implemented around the world to reduce SSB consumption, including excise taxes (eg, Mexico,[15, 16] the United Kingdom,[12, 13] Saudi Arabia,[17] etc.), import bans (eg, Tokelau [18]), and bans on unlimited refills (eg, France [19]).

A number of jurisdictions have also implemented taxes on junk food or other products. For example, in addition to an excise tax on SSB, Mexico has implemented an eight percent *ad valorem* tax on nonessential caloric-dense foods with energy density ≥275kcal/100g.[20-22] Denmark introduced a tax of 16 Danish Kroner per kilogram of saturated fat for products exceeding 2.3g saturated fat per 100g fat in October 2011.[12, 14, 23] Taxed products in Denmark included meat, dairy products, and animal fats, as well as vegetable oils and fats and items containing these products.[12, 23] However, the tax was abolished in 2013.[12, 14, 23]

Taxes on food and beverages will have different health impacts by context, due to the habits and culture around food and the array of food products available. There is also the question of how these different policies rank in terms of impact in any given country. In our recent study we compared the potential impacts of ten different real-world food and beverage taxes (Table 1) on health gains (in quality-adjusted life years (QALYs)), health system costs, and GHG emissions as if they had been implemented in NZ.

Table 1. Details of tax packages selected for inclusion

Jurisdiction	Type of tax(es)	Tax details ^{1,2}
American Samoa	excise tax and import tariff on SSB	\$0.56/L
Barbados	ad valorem tax on SSB	10%
Bermuda	ad valorem tax on SSB	50%
Denmark	(1) excise duty on saturated fat	\$3.08/kg saturated fat
	(2) excise duty on chocolate and	\$4.9/kg
	sweets	
Dominica	(1) excise tax on SSB	10%
	(2) excise tax on foods with high	10%
	sugar content	
Finland	excise duty on SSB	\$0.43/L for SSB and juices; \$0.21/L for artificial sweetener-
		based soft drinks and waters
	(2) excise duty on confectionary and	\$1.91/kg
	ice cream	
Gulf Cooperation	ad valorem excise tax on carbonated	50% for carbonated beverages;
Council ³	beverages and energy drinks	100% for energy drinks
Mexico	excise tax on SSB	10%
	(2) ad valorem tax on junk food	8%
Norway	(1) excise tax on SSB	\$0.47/L for prepared soda products; \$2.85/L for concentrates (syrups) with added sugar; \$0.24/L for juices and syrups based on fruits or vegetables without added sugar; \$1.43/L for concentrates without added sugar
	(2) excise tax on chocolate and sugar products	\$2.84/kg
Palau	import tax on SSB	\$0.37/L
¹ Tax rates shown are most recent rates for taxes that have changed over time		
² NZ Dollars 2011		
³ Gulf Cooperation Council members include Saudi Arabia, the United Arab Emirates (UAE), Bahrain, Qatar, Oman, and		
Kuwait		
SSB = sugar sweetened beverages		

NZD = New Zealand Dollar

What level of benefits does the new NZ modelling show?

Our recent modelling work indicated that the health gains ranged from 12.8 QALYs per 1000 population over the life course of the population alive in 2011 for the import tax on sugar sweetened beverages (SSB) in Palau to 150 per 1000 population for the excise duties on saturated fat, chocolate, and sweets in Denmark (Figure 1). Most of the estimated health impact of the real-world taxes was through reductions in body mass index (BMI), which accounted for approximately 80% or more of the total results. All of the modelled tax policies were cost-saving and would potentially result in higher health gains for Māori than for non-Māori. Therefore, this intervention could assist in reducing health inequalities in NZ if well-implemented. The modelled taxes resulted in small decreases in GHG emissions from baseline diets, ranging from -0.2% for the tax on SSB in Barbados to -2.8% for Denmark's tax package. Generally, the taxes that impacted the intake of many food groups (eg, excise duties on saturated fat, chocolate, and sweets in Denmark) or the SSB taxes with the highest rates (eg, Bermuda and Gulf Cooperation Council) were the most effective, while taxes that only targeted SSB at a lower rate were the least effective.

Figure 1. Health gains in QALYs per 1000 population for tax policies at a 3% discount rate with 95% uncertainty intervals in 2011.



Potential implications for research and NZ health agencies

These modelling results emphasise the potential health and economic benefits of real-world food and beverage taxes. However, implementation of food and beverage taxes requires consideration of factors beyond these simulation results, including social and political acceptability, environmental impacts, and the practicalities of tax administration. Furthermore, monitoring and evaluation of real-world tax policies is critical for the evaluation of effectiveness.

In summary, recent modelling showed that the implementation of real-world food and beverage taxes in NZ would likely result in health gains, cost-savings to the health system, and modest reductions in GHG emissions. Furthermore, such taxes could assist in reducing health inequalities in NZ if well-implemented. Food and beverage taxes should be considered by policy-makers in NZ as part of a national strategy to address poor diet and reduce obesity and related health conditions.

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References

- 1. Blüher M. Obesity: global epidemiology and pathogenesis. *Nat Rev Endocrinol* 2019;15(5):288-98. https://dx.doi.org/10.1038/s41574-019-0176-8.
- 2. Te Morenga L, Mallard S, Mann J. Dietary sugars and body weight: systematic review

and meta-analyses of randomised controlled trials and cohort studies. *BMJ* 2013;346(jan15 3):e7492-e. https://dx.doi.org/10.1136/bmj.e7492..

- 3. World Health Organization. Obesity and overweight: World Health Organization (WHO) 2020. https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight (accessed Sept 2021).
- 4. World Health Organization. Guideline: sugars intake for adults and children. Geneva: World Health Organization (WHO) 2015. https://apps.who.int/iris/handle/10665/149782 (accessed Sept 2021).
- 5. Ezzati M, Riboli E. Behavioral and Dietary Risk Factors for Noncommunicable Diseases. *N Engl J Med* 2013;369(10):954-64. https://dx.doi.org/10.1056/nejmra1203528.
- 6. Institute for Health Metrics and Evaluation. GBD Compare Data Visualization. Seattle, Washington: IHME, University of Washington; 2018. http://vizhub.healthdata.org/gbd-compare (accessed Sept 2021).
- Swinburn B. Power Dynamics in 21st-Century Food Systems. Nutrients 2019;11(10):2544. https://dx.doi.org/10.3390/nu11102544.
- 8. Corvalan C, Hales S, McMichael A, et al. Ecosystems and Human Well-Being: Health Synthesis: a report of the Millennium Ecosystem Assessment. France: World Health Organization (WHO); 2005. Contract No.: ISBN 92 4 156309 5
- IPCC. Climate Change 2014: Synthesis Report. Geneva, Switzerland: Intergovernmental Panel on Climate Change; 2014. Report No.: ISBN 978-92-9169-143-2. http://www.ipcc.ch/report/ar5/syr/ (accessed Sept 2021).
- World Health Organization. Taxes on sugary drinks: Why do it? Geneva: World Health Organization (WHO); 2017. https://apps.who.int/iris/bitstream/handle/10665/260253/WHO-NMH-PND-16.5Rev.1-en
- g.pdf?sequence=1&isAllowed=y (accessed Sept 2021).
 11. World Health Organization. Report of the Commission on Ending Childhood Obesity: Implementation Plan: Executive Summary. Geneva: World Health Organization (WHO); 2017.

https://apps.who.int/iris/bitstream/handle/10665/259349/WHO-NMH-PND-ECHO-17.1-e ng.pdf?sequence=1 (accessed Sept 2021).

- 12. World Cancer Research Fund International. NOURISHING framework: Use econmic tools to address food affordability and purchase incentives. 2018. https://www.wcrf.org/sites/default/files/Use-economic-tools.pdf (accessed Oct 2020).
- 13. Backholer K, Baker P. Sugar-Sweetened Beverage Taxes: the Potential for Cardiovascular Health. *Current Cardiovascular Risk Reports* 2018;12(12). https://dx.doi.org/10.1007/s12170-018-0593-6.
- 14. Smith E, Scarborough P, Rayner M, et al. Should we tax unhealthy food and drink? *Proceedings of the Nutrition Society* 2018;77(3):314-20. https://dx.doi.org/10.1017/S0029665117004165.
- Campos-Vázquez RM, Medina-Cortina EM. Pass-through and competition: the impact of soft drink taxes as seen through Mexican supermarkets. *Lat Am Econ Rev* 2019;28(1). https://dx.doi.org/10.1186/s40503-019-0065-5.
- Colchero MA, Salgado JC, Unar-Munguia M, et al. 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://dx.doi.org/10.1371/journal.pone.0144408.
- 17. Alsukait R, Wilde P, Bleich SN, et al. Evaluating Saudi Arabia's 50% carbonated drink excise tax: Changes in prices and volume sales. *Econ Hum Biol* 2020;38. https://dx.doi.org/10.1016/j.ehb.2020.100868.
- 18. Rush EC, Pearce L. Foods imported into the Tokelau Islands: 10th May 2008 to 1 April 2012. Auckland: AUT University; 2015.

https://openrepository.aut.ac.nz/handle/10292/5757 (accessed Sept 2021).

- Nau JY. Pour lutter contre l'obésité, la France fait une croix sur les fontaines de sodas [To fight against obesity, France bans use of soda fountain]. *Rev Med Suisse* 2015;11(477):1262-3.
- Taillie LS, Rivera JA, Popkin BM, et al. Do high vs. low purchasers respond differently to a nonessential energy-dense food tax? Two-year evaluation of Mexico's 8% nonessential food tax. *Prev Med* 2017;105:S37-S42. https://dx.doi.org/10.1016/j.ypmed.2017.07.009.

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