Sugar Scorecards World Action on Salt, Sugar and Health

November 2021



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Introduction

Our Sugar Reduction Scorecards provide an at-a-glance indication of a country's sugar reduction progress in terms of health status and policy. Included is data on key health issues associated with high sugar consumption, as well as policy actions being undertaken or planned to reduce population sugar intake. As of November 2021, scorecards have been created for twelve countries, two from each World Health Organisation (WHO) region, but the intent is to add to this over time.



WASSH's mission is to improve the health of populations throughout the world by achieving reductions in salt, sugar and calorie intake. WASSH provide's resources and expert advice to enable the development and implementation of salt, sugar and calorie reduction programmes worldwide.

WASSH is a global network of more than 600 expert members in 100 countries.

Thank you to Aaron Buckley (buckstudio.co.uk) for all scorecard design

Reference Table

| CRITERIA | DESCRIPTION | CATEGORIS | ATION | | |
|--|--|--------------------|---------|-----------------------------------|--------------------------------------|
| Proportion of energy from added sugars (%) | Adult daily intake of added sugars as a proportion of total energy intake (%) | >101 | 10-5 | | <5 |
| Adult obesity prevalence (%) | Adult obesity prevalence (BMI>30kg/m²) (%) | >132 | 6-13 | | <6 |
| Childhood obesity prevalence (%) | Childhood obesity prevalence (BMI>30kg/m²) (%) | >183 | 9-18 | | <9 |
| Adults with diagnosed type 2 diabetes (%) | Adults with diagnosed type 2 diabetes (%) | >8.54 | 4-8.5 | | <4 |
| Prevalence of dental caries in children (%) | Prevalence of dental caries (tooth decay) in permanent teeth in children (%) | >545 | 27-54 | | <27 |
| Sugary drinks tax | Existence of health-related tax on sugar-sweetened beverages. | No | Planned | | Yes |
| Sugar reformulation targets | Existence of target levels for free or added sugar in foods and beverages aimed at promoting reformulation. | No targets | Planned | Voluntary | Mandatory |
| Front-of-pack nutrition labelling system (FOPL) | Existence of an interpretive front-of-pack nutrition labelling system, such as warning labels, Nutri-Score, or UK-style 'traffic light' labelling. | No FOPL | Planned | Voluntary FOPL | Mandatory FOPL |
| Marketing restrictions | Existence of strategies to combat the marketing (advertising or sales promotions) of foods that are high in sugar. | No restrictions | Planned | Voluntary restrictions | Legislated restrictions |
| Public awareness campaigns | Existence of education and communication strategies to increase awareness of health risks and dietary sources of sugar. | No campaign | Planned | Previous campaign | Active campaign |
| Public procurement guidelines | Existence of sugar-related nutrition standards for foods served and sold by government agencies, for example in schools, hospitals, public sector workplaces. | No measures | Planned | Local or voluntary measures | National or mandatory measures |
| Independent scrutiny | One or more non-governmental organisations (NGOs), advocacy groups or consumer organisations that hold policy makers and the food industry accountable for reducing population sugar intake and fulfilling commitments to sugar reduction programmes. | No | Planned | | Yes |
| Knowledge, Attitudes, and Behaviours research | Research to determine consumer knowledge, attitude and behaviour (KAB) in relation to sugar consumption, including in relation particular sugar reduction policies | No | Planned | | Yes |

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¹ Categorisation based on US added sugar intake recommendations. This is an interim measure due to current lack of global data on free sugar intake, meaning that the World Health Organization (WHO) free sugar intake recommendations could not been used. As more countries start to measure free sugar intake, this will be updated. U.S. Department of Agriculture. (2020). Dietary Guidelines for Americans 2020–2025. https://www.dietaryguidelines.gov/sites/default/files/2020-

12/Dietary_Guidelines_for_Americans_2020-2025.pdf#page=31

² Catagorisation based on the global adult obesity prevalence, which was 13% in 2016. World Health Organization. (2021). Obesity and overweight.

https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

³ Catagorisation based on the global childhood obesity prevalence, which was 18% in 2016. World Health Organization. (2021). Obesity and overweight.

https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight

⁴ Catagorisation based on the global proportion of adults with diagnosed type 2 diabetes, which was 8.5% in 2014 World Health Organization. (2016). Global Report on Diabetes. https://apps.who.int/iris/bitstream/handle/10665/204871/9789241565257_eng.pdf

⁵ Catagorisation based on the global prevalence of dental caries in permanent teeth in children, which is estimated at 53.8%. Kazeminia, M., Abdi, A., Shohaimi, S., Jalali, R., Vaisi-Raygani, A., Salari, N., & Mohammadi, M. (2020). Dental caries in primary and permanent teeth in children's worldwide, 1995 to 2019: A systematic review and metaanalysis. Head & Face Medicine, 16(1), 22. https://doi.org/10.1186/s13005-020-00237-z

Country-specific notes and references

| Notes | Reference | Criteria | South Africa |
|-------|-----------|---|--------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 9.5 - 11.3 |
| 2 | (2) | Adult obesity prevalence (%) | 26.2 |
| 3 | (2) | Childhood obesity prevalence (%) | 5.9 |
| 4 | (3) | Adults with diagnosed type 2 diabetes (%) | 12.7 |
| 5 | (4) | Prevalence of dental caries in children (%) | 36.9 |
| 6 | (5) | Sugary drinks tax | Yes |
| 7 | n/a | Sugar reformulation targets | No targets |
| 8 | (6) | Front-of-pack nutrition labelling system (FOPL) | Planned |
| 9 | (7) | Marketing restrictions | Voluntary |
| 10 | (8) | Public awareness campaigns | Previous campaign |
| 11 | (9) | | Local or voluntary |
| | | Public procurement guidelines | measures |
| 12 | (10) | Independent scrutiny | Yes |
| 13 | n/a | Knowledge, Attitudes, and Behaviours research | No |

Notes

1. Data collected in 2010 from a sample of 1233 adults. 10.5% for men living in rural settings, 9.5% for men living in urban settings, 11.3% for women living in rural settings, 11.2% for women living in urban settings

2. Data collected 2016, sample of 7767 aged 15+ years

3. Data collected 2012, national sample of children aged 2 – 14 years. Extended international (IOTF) body mass index cut-offs used

- 4. 2019 data, age-adjusted comparative prevalence of diabetes, adults aged 20 79 years
- 5. Data collected 1999 2002, children aged 12 years old

6. Tax implemented in April 2018: ZAR 0.021 per g sugar (\$0.0013) on sugary drinks and concentrates (products with 4g per 100mL or less excluded); dairy drinks and fruit and vegetable juices excluded

- 7. No evidence found of sugar reformulation targets
- 8. –
- 9. –

10. Media campaign was focused on sugar-sweetened beverages

11. HealthyFood program provides a cash-back rebate of up to 25% for healthy food purchases in over 400 supermarkets across South Africa

- 12. –
- 13. No nationally representative survey identified

- Vorster HH, Kruger A, Wentzel-Viljoen E, Kruger HS, Margetts BM. Added sugar intake in South Africa: findings from the Adult Prospective Urban and Rural Epidemiology cohort study. Am J Clin Nutr. 2014 Jun 1;99(6):1479–86.
- World Obesity Federation. South Africa Obesity prevalence [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 27]. Available from: https://data.worldobesity.org/country/south-africa-197/#data_prevalence
- International Diabetes Federation. South Africa diabetes report 2010 2045 [Internet]. [cited 2021 Oct 27]. Available from: https://diabetesatlas.org/data/
- van Wyk P, Louw A, Plessis J. Caries status and treatment needs in South Africa: report of the 1999-2002 National Children's Oral Health Survey. SADJ J South Afr Dent Assoc Tydskr Van Suid-Afr Tandheelkd Ver. 2004 Aug 1;59:238, 240–2.

- 5. Stacey N, Edoka I, Hofman K, Swart EC, Popkin B, Ng SW. Changes in beverage purchases following the announcement and implementation of South Africa's Health Promotion Levy: an observational study. Lancet Planet Health. 2021 Apr 1;5(4):e200–8.
- Jones A, Neal B, Reeve B, Mhurchu CN, Thow AM. Front-of-pack nutrition labelling to promote healthier diets: current practice and opportunities to strengthen regulation worldwide. BMJ Glob Health. 2019 Dec 1;4(6):e001882.
- 7. Yamoah DA, De Man J, Onagbiye SO, Mchiza ZJ. Exposure of Children to Unhealthy Food and Beverage Advertisements in South Africa. Int J Environ Res Public Health. 2021 Apr 7;18(8):3856.
- 8. Murukutla N, Cotter T, Wang S, Cullinan K, Gaston F, Kotov A, et al. Results of a Mass Media Campaign in South Africa to Promote a Sugary Drinks Tax. Nutrients. 2020 Jun 23;12(6):1878.
- 9. Sturm R, An R, Segal D, Patel D. A Cash-Back Rebate Program for Healthy Food Purchases in South Africa: Results from Scanner Data. Am J Prev Med. 2013 Jun;44(6):567–72.
- 10. HEALA Healthy Living Alliance [Internet]. [cited 2021 Oct 27]. Available from: https://heala.org/

| Notes | Reference | Criteria | Mauritius |
|-------|-------------|---|-----------------------|
| 1 | n/a | Proportion of energy from added sugars (%) | n/a |
| 2 | (1) | Adult obesity prevalence (%) | 19.1 |
| 3 | (1) | Childhood obesity prevalence (%) | 9.1 |
| 4 | (2) | Adults with diagnosed type 2 diabetes (%) | 22.0 |
| 5 | (3) | Prevalence of dental caries in children (%) | n/a |
| 6 | (4) (5) (6) | Sugary drinks tax | Yes |
| 7 | (7) | Sugar reformulation targets | No targets |
| 8 | (8) | Front-of-pack nutrition labelling system (FOPL) | No FOPL |
| 9 | (9) | Marketing restrictions | Voluntary restriction |
| 10 | (10) | Public awareness campaigns | Planned |
| 11 | (10) | Public procurement guidelines | Planned measures |
| 12 | n/a | Independent scrutiny | No |
| 13 | (11) | Knowledge, Attitudes, and Behaviours research | No |

- 1. No data found regarding added sugar consumption as a proportion of energy intake
- 2. The Mauritius Non Communicable Diseases Survey 2015, sample of 3829 adults (aged 18+ years)
- 3. Self-reported data from sample of 3012 children aged 13 17 years old as part of the Global School-based Student Health Survey (GSHS)
- 4. Percentage of population aged 20 to 79 years old with diabetes, data from 2019
- 5. No data identified for prevalence of dental caries in permanent teeth in children. Reference is for a study conducted 2007-2008, finding that 86.9% of children had DMFT score >3. Sample of 46 Mauritian children aged 11 years and younger visiting private dental clinics
- 6. MUR 0.03 per g sugar (\$0.00075) on sodas, syrups, and fruity drinks with added sugar. Implemented in 2013, updated 2016
- 7. Only initiative related specifically to sugar is the SSB tax, no targets exist to promote reformulation of food products to reduce their sugar content
- 8. Only voluntary back-of-pack labelling
- 9. –
- 10. –
- 11. –
- 12. No organisations identified
- 13. Only identified study relates to Mauritian consumers' attitudes toward nutritional labels

- World Obesity Federation. Mauritius [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 25]. Available from: https://data.worldobesity.org/country/mauritius-137/#data_prevalence
- International Diabetes Federation. Mauritius diabetes report 2010 2045 [Internet]. [cited 2021 Oct 25]. Available from: https://diabetesatlas.org/data/
- 3. Pugo Gunsam P, Banka S. Oral health status and behaviour of Mauritians visiting private dental clinics. Health Educ. 2011 Jan 1;111(1):34–48.
- 4. Mauritius Revenue Authority. Excise Tax on Sugar Content of Sugar Sweetened Non-Alcoholic Beverages [Internet]. [cited 2021 Oct 25]. Available from: https://www.mra.mu/index.php/customs1/more-topics/excise-tax-on-sugar-content-of-sugarsweetened-non-alcoholic-beverages
- Global Food Research Program, University of North Carolina. Sugary drinks taxes around the world [Internet]. 2021. Available from: https://globalfoodresearchprogram.org/wpcontent/uploads/2021/04/SSB_sugary_drink_taxes_maps.pdf
- Beebeejaun A. A Critical Analysis of Fiscal Measures on Unhealthy Foods in Mauritius. Afr J Leg Stud. 2019 Dec 19;12(2):163–82.
- Musango L, Timol M, Burhoo P, Shaikh F, Donnen P, Kirigia JM. Assessing health system challenges and opportunities for better noncommunicable disease outcomes: the case of Mauritius. BMC Health Serv Res. 2020 Mar 6;20(1):184.
- 8. Mandle J, Tugendhaft A, Michalow J, Hofman K. Nutrition labelling: a review of research on consumer and industry response in the global South.
- 9. Independent Broadcasting Authority (Mauritius). Code of Advertising Practice [Internet]. 2011. Available from: https://www.iba.mu/documents/Advert_final_Layout_1.pdf
- Ministry of Health and Quality of Life (Mauritius). National Plan of Action for Nutrition 2016 2020 [Internet]. 2016. Available from: https://extranet.who.int/ncdccs/Data/MUS_B14_NPAN%202016-2020%5b1%5d.pdf
- 11. Cannoosamy K, Pugo-Gunsam P, Jeewon R. Consumer Knowledge and Attitudes Toward Nutritional Labels. J Nutr Educ Behav. 2014 Sep 1;46(5):334–40.

| Notes | Reference | Criteria | Chile |
|-------|------------------|---|------------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 13.2 |
| 2 | (2) | Adult obesity prevalence (%) | 34.4 |
| 3 | (3) | Childhood obesity prevalence (%) | 14.0 |
| 4 | (2) | Adults with diagnosed type 2 diabetes (%) | 12.3 |
| 5 | (4) | Prevalence of dental caries in children (%) | 52.7 |
| 6 | (5) | Sugary drinks tax | Yes |
| 7 | n/a | Sugar reformulation targets | No targets |
| 8 | (6) | Front-of-pack nutrition labelling system (FOPL) | Mandatory |
| 9 | (7) (8) (9) (10) | Marketing restrictions | Legislated restriction |
| 10 | (7) | Public awareness campaigns | No campaign |
| 11 | (7) (11) | | National or mandatory |
| | | Public procurement guidelines | measures |
| 12 | n/a | Independent scrutiny | No |
| 13 | (12) | Knowledge, Attitudes, and Behaviours research | Yes |

Thank you to Camila Corvalan MPH MD PhD at the Institute of Nutrition and Food Technology, University of Chile for your valuable input.

Notes

- 1. Data collected in 2010, sample of 4920 individuals aged 2 years and over
- 2. Chile National Health Survey 2016-2017
- 3. Self-reported data collected in 2013, sample of 2049 children aged 13 17 years old

- 4. 'Suspected Diabetes Mellitus' is defined as fasting blood glucose with results greater than or equal to 126mg. Self-reported data collected 2016-2017
- 5. Prevalence in 4 year olds

6. Sugar-sweetened beverage tax amended in 2014: 18% tax on sugary drinks with more than 6.25 g sugar/100 mL; exempts 100% fruit juice and dairy-based drinks; 10% tax on drinks with less than 6.25 g sugar/100 mL

- 7. No sugar reduction targets
- 8. Food labelling and advertising law implemented in 2016
- 9. Regulated foods (based on nutrient profiling) cannot be promoted to children <14 years.
- 10. No formalised public awareness campaign identified

11. Regulated foods are banned from kiosks, cafeterias, and feeding programme at schools and nurseries

- 12. No specific civil society organisations for sugar reduction
- 13. Cross-sectional study in 468 parents/tutors in Santiago

- Cediel G, Reyes M, Louzada ML da C, Steele EM, Monteiro CA, Corvalán C, et al. Ultra-processed foods and added sugars in the Chilean diet (2010). Public Health Nutr. 2018 Jan;21(1):125–33.
- Department of Epidemiology, Ministry of Health (Chile). Chile National Health Survey 2016-2017 [Internet]. Available from: https://www.minsal.cl/wp-content/uploads/2017/11/ENS-2016-17_PRIMEROS-RESULTADOS.pdf
- World Obesity Federation. Chile Obesity Prevalence [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 25]. Available from: https://data.worldobesity.org/country/chile-41/#data prevalence
- Hoffmeister L, Moya P, Vidal C, Benadof D. Factors associated with early childhood caries in Chile. Gac Sanit. 2016 Feb;30(1):59–62.
- Caro JC, Corvalán C, Reyes M, Silva A, Popkin B, Taillie LS. Chile's 2014 sugar-sweetened beverage tax and changes in prices and purchases of sugar-sweetened beverages: An observational study in an urban environment. PLOS Med. 2018 Jul 3;15(7):e1002597.
- 6. Reyes M, Garmendia ML, Olivares S, Aqueveque C, Zacarías I, Corvalán C. Development of the Chilean front-of-package food warning label. BMC Public Health. 2019 Jul 8;19(1):906.
- Corvalán C, Reyes M, Garmendia ML, Uauy R. Structural responses to the obesity and noncommunicable diseases epidemic: Update on the Chilean law of food labelling and advertising. Obes Rev. 2019;20(3):367–74.
- Correa T, Reyes M, Taillie LS, Corvalán C, Dillman Carpentier FR. Food Advertising on Television Before and After a National Unhealthy Food Marketing Regulation in Chile, 2016–2017. Am J Public Health. 2020 Jul 1;110(7):1054–9.
- Carpentier FRD, Correa T, Reyes M, Taillie LS. Evaluating the impact of Chile's marketing regulation of unhealthy foods and beverages: pre-school and adolescent children's changes in exposure to food advertising on television. Public Health Nutr. 2020 Mar;23(4):747–55.
- Mediano Stoltze F, Reyes M, Smith TL, Correa T, Corvalán C, Carpentier FRD. Prevalence of Child-Directed Marketing on Breakfast Cereal Packages before and after Chile's Food Marketing Law: A Pre- and Post-Quantitative Content Analysis. Int J Environ Res Public Health. 2019 Nov 15;16(22):E4501.
- Massri C, Sutherland S, Källestål C, Peña S. Impact of the Food-Labeling and Advertising Law Banning Competitive Food and Beverages in Chilean Public Schools, 2014–2016. Am J Public Health. 2019 Sep 1;109(9):1249–54.
- Quintiliano Scarpelli Dourado D, Gomes Ramires T, Araneda Flores JA, Pinheiro Fernandes AC.
 Impact of front-of-pack labeling on food purchase pattern in Chile. Nutr Hosp [Internet]. 2021 [cited 2021 Oct 25]; Available from: https://www.nutricionhospitalaria.org/articles/03311/show

| Notes | Reference | Criteria | USA |
|-------|-----------|---|--------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 13.8 |
| 2 | (2) | Adult obesity prevalence (%) | 42.4 |
| 3 | (3) | Childhood obesity prevalence (%) | 19.3 |
| 4 | (4) | Adults with diagnosed type 2 diabetes (%) | 8.6 |
| 5 | (5) | Prevalence of dental caries in children (%) | 45.8 |
| 6 | (6) | Sugary drinks tax | Yes |
| 7 | (7) | Sugar reformulation targets | Voluntary |
| 8 | (8) (9) | Front-of-pack nutrition labelling system (FOPL) | Voluntary* |
| 9 | (10) (11) | Marketing restrictions | No restrictions |
| 10 | (12) (13) | Public awareness campaigns | Previous campaign |
| 11 | (14) (15) | | Local or voluntary |
| | | Public procurement guidelines | measures |
| 12 | (16) (17) | Independent scrutiny | Yes |
| 13 | (18) | Knowledge, Attitudes, and Behaviours research | Yes |

Thank you to Christine Johnson and Nicole Ide at Resolve to Save Lives for your valuable input.

Notes

1. National Health and Nutrition Examination Survey 2009–2010, 9317 participants aged 1+ years

2. National Health and Nutrition Examination Survey 2017-2018, age-adjusted prevalence of obesity in adults aged 20+ years

3. National Health and Nutrition Examination Survey 2017-2018, children and adolescents aged 2-19 years

4. National Health Interview Survey 2016, prevalence of diagnosed type 2 diabetes, 33,028 adults aged ≥18 years

5. National Health and Nutrition Examination Survey 2015–2016, prevalence of total caries (untreated and treated), children and adolescents aged 2–19 years

6. On a state/city basis in Philadelphia, Seattle, Albany/Berkeley/San Francisco/Oakland in California and Boulder Colorado

7. In February 2021 the National Salt and Sugar Reduction Initiative (NSSRI) released targets for sugar reduction across 15 categories of foods and beverages

8. *Not national. 6 different FOPL schemes in use across the USA. The Food Labelling Modernization Act, which will strengthen requirements related to nutrient information on food labels is in progress

9. -

10. Multiple campaigns in New York City (also adapted in other states and cities). The most recent campaign, launched in January 2019 compared sugary drinks to cigarettes. Previous campaign from 2017 "The Sour Side of Sweet" highlighted the health hazards of sugary drinks

11. Voluntary federal food service guidelines, various state level policies on public food procurement

12. Includes Center for Science in the Public Interest and Healthy Food America

13. Reference is an example of a state survey covering attitudes to sugary drinks and related policy interventions

- Steele EM, Baraldi LG, Louzada ML da C, Moubarac J-C, Mozaffarian D, Monteiro CA. Ultra-processed foods and added sugars in the US diet: evidence from a nationally representative cross-sectional study. BMJ Open. 2016 Jan 1;6(3):e009892.
- 2. Hales CM, Carroll MD, Fryar CD, Ogden CL. Prevalence of Obesity and Severe Obesity Among Adults: United States, 2017–2018. 2020;(360):8.
- 3. D. Fryar C, D. Carroll M, Afful J. Prevalence of Overweight, Obesity, and Severe Obesity Among Children and Adolescents Aged 2–19 Years: United States, 1963–1965 Through 2017–2018

[Internet]. 2021 [cited 2021 Oct 29]. Available from:

https://www.cdc.gov/nchs/data/hestat/obesity-child-17-18/obesity-child.htm

 Bullard K, Cowie C, Lessem S, Saydah S, Menke A, Geiss L, et al. Prevalence of Diagnosed Diabetes in Adults by Diabetes Type — United States, 2016. MMWR Morb Mortal Wkly Rep [Internet]. 2018 [cited 2021 Oct 29];67. Available from:

https://www.cdc.gov/mmwr/volumes/67/wr/mm6712a2.htm

- Fleming E, Afful J. Prevalence of Total and Untreated Dental Caries Among Youth: United States, 2015–2016 [Internet]. 2019 [cited 2021 Oct 29]. Available from: https://www.cdc.gov/nchs/products/databriefs/db307.htm
- Global Food Research Program University of North Carolina. Sugary drink taxes around the world [Internet]. 2021. Available from: https://www.globalfoodresearchprogram.org/wpcontent/uploads/2021/09/SugaryDrink_tax_maps_PPTs_2021_September.pdf
- City of New York. National Salt and Sugar Reduction Initiative (NSSRI) [Internet]. Available from: https://www1.nyc.gov/site/doh/health/health-topics/national-salt-sugar-reduction-initiative.page
- Pomeranz JL, Wilde P, Mozaffarian D, Micha R. Mandating Front-of-Package Food Labels in the U.S. What are the First Amendment Obstacles? Food Policy. 2019 Jul;86:101722.
- 9. US Government. Food Labeling Modernization Act of 2021 [Internet]. 2021. Available from: https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/ Food%20Labeling%20Modernization%20Act%20Bill%20Text.pdf
- Hazlegreaves S. Marketing unhealthy foods to kids [Internet]. Open Access Government. 2020 [cited 2021 Oct 29]. Available from: https://www.openaccessgovernment.org/marketing-unhealthy-foodsto-kids/92790/
- Healthy Food America. Limits on marketing to kids [Internet]. Healthy Food America. [cited 2021 Oct 29]. Available from: https://www.healthyfoodamerica.org/limits_on_marketing_to_kids
- City of New York. Campaign Comparing Sugary Drinks to Cigarettes NYC Health [Internet]. [cited 2021 Oct 29]. Available from: https://www1.nyc.gov/site/doh/about/press/pr2019/campaigncomparing-sugary-drinks-cigarettes.page
- City of New York. Health Department Launches "The Sour Side of Sweet" Media Campaign On the Health Hazards of Sugary Drinks [Internet]. [cited 2021 Oct 29]. Available from: https://www1.nyc.gov/site/doh/about/press/pr2017/pr065-17.page
- Food Service Guidelines Federal Workgroup. Food Service Guidelines for Federal Facilities [Internet].
 U.S. Department of Health and Human Services; 2017. Available from: https://linkscommunity.org/assets/PDFs/us-hhs-food-service-guidelines-for-federal-facilities-2017.pdf
- 15. Association of State Public Health Nutritionists. Food Service Guidelines [Internet]. ASPHN. [cited 2021 Oct 29]. Available from: https://asphn.org/food-service-guidelines/
- 16. About CSPI [Internet]. Center for Science in the Public Interest. 2015 [cited 2021 Oct 29]. Available from: https://cspinet.org/about
- 17. Healthy Food America. About Us [Internet]. Healthy Food America. [cited 2021 Oct 29]. Available from: https://www.healthyfoodamerica.org/about
- 18. Siena College Research Institute. New York State Department of Health, Division of Chronic Disease Prevention, Public Opinion Survey Report, 2016. 2016;67.

| Notes | Reference | Criteria | Thailand |
|-------|-----------|---|------------|
| 1 | (1) | Proportion of energy from added sugars (%) | n/a |
| 2 | (2) (3) | Adult obesity prevalence (%) | 11.6 |
| 3 | (2) (4) | Childhood obesity prevalence (%) | 7.3 |
| 4 | (5) | Adults with diagnosed type 2 diabetes (%) | 7.0 |
| 5 | (6) | Prevalence of dental caries in children (%) | 52 |
| 6 | (7) | Sugary drinks tax | Yes |
| 7 | n/a | Sugar reformulation targets | No targets |
| 8 | (8) | Front-of-pack nutrition labelling system (FOPL) | Voluntary |

| 9 | (9) | Marketing restrictions | Voluntary |
|----|------|---|--------------------|
| 10 | (10) | | Previous |
| | | Public awareness campaigns | campaign |
| 11 | (11) | | Local or voluntary |
| | | Public procurement guidelines | measures |
| 12 | (12) | Independent scrutiny | Yes |
| 13 | n/a | Knowledge, Attitudes, and Behaviours research | No |

- 1. Review article concludes that existing data regarding added sugar intake is inconsistent
- 2. Small, regional survey, sample of 627 aged 15+ years, data collected 2018

3. Regional survey, sample of 1749, aged 6 – 18 years, data collected 2016, WHO BMI cut-offs used

- 4. Age-adjusted comparative prevalence of diabetes, 2019 data, adults aged 20 79 years
- 5. 12-year-olds, adapted from 8th Thailand National Oral Health Survey in 2017
- 6. Implemented September 2017; tiered taxes on all drinks with >6 g sugar per 100mL, up to 5 baht/L (\$0.16) for drinks with >10g sugar per 100mL from 2023
- 7. No evidence found regarding sugar reformulation targets
- 8. Voluntary Healthier Choices logo launched in August 2016
- 9. Mixture of Government regulation and industry self-regulatory codes

10. 'Fatless Belly Thais' (FBT) aimed to raise public awareness of obesity and promote healthy diets (including reducing snack and SSB consumption)

- 11. The Healthy Food Menu Policy & the Childcare Centre Standard
- 12. Sweet Enough Network (SEN)
- 13. No studies identified

- 1. Kriengsinyos W, Chan P, Amarra MSV. Consumption and sources of added sugar in Thailand: a review. Asia Pac J Clin Nutr. 2018;27(2):262–83.
- 2. World Obesity Federation. Thailand Obesity prevalence [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 28]. Available from:
 - https://data.worldobesity.org/country/thailand-214/#data_prevalence
- Sakboonyarat B, Pornpongsawad C, Sangkool T, Phanmanas C, Kesonphaet N, Tangthongtawi N, et al. Trends, prevalence and associated factors of obesity among adults in a rural community in Thailand: serial cross-sectional surveys, 2012 and 2018. BMC Public Health. 2020 Jun 3;20(1):850.
- Nonboonyawat T, Pusanasuwannasri W, Chanrat N, Wongthanavimok N, Tubngern D, Panutrakul P, et al. Prevalence and associates of obesity and overweight among school-age children in a rural community of Thailand. Korean J Pediatr. 2019 May;62(5):179–86.
- International Diabetes Federation. Thailand diabetes report 2010 2045 [Internet]. [cited 2021 Oct 28]. Available from: https://diabetesatlas.org/data/
- 6. Sitthisettapong T, Tasanarong P, Phantumvanit P. Strategic Management of Early Childhood Caries in Thailand: A Critical Overview. Front Public Health. 2021;9:671.
- Phonsuk P, Vongmongkol V, Ponguttha S, Suphanchaimat R, Rojroongwasinkul N, Swinburn BA. Impacts of a sugar sweetened beverage tax on body mass index and obesity in Thailand: A modelling study. PLOS ONE. 2021 Apr 29;16(4):e0250841.
- World Cancer Research Fund International. NOURISHING Database: Clearly visible 'interpretative' labels and warning labels [Internet]. [cited 2021 Oct 25]. Available from: https://policydatabase.wcrf.org/level_one?page=nourishing-level-one#step2=0#step3=309
- Jaichuen N, Vongmongkol V, Suphanchaimat R, Sasiwatpaisit N, Tangcharoensathien V. Food Marketing in Facebook to Thai Children and Youth: An Assessment of the Efficacy of Thai Regulations. Int J Environ Res Public Health. 2019 Apr;16(7):1204.
- 10. Osornprasop S, Sirinya P, Sueppong G. Lessons Learned from Thailand's Obesity Prevention and Control Policies [Internet]. The World Bank; 2019. Available from:

https://documents1.worldbank.org/curated/en/397481548340562764/pdf/Lessons-Learned-from-Thailands-Obesity-Prevention-and-Control-Policies.pdf

- 11. World Cancer Research Fund International. NOURISHING Database: Standards in other specific locations (eg health facilities workplace) [Internet]. [cited 2021 Oct 25]. Available from: https://policydatabase.wcrf.org/level_one?page=nourishing-level-one#step2=1#step3=514
- 12. The World Bank. Lessons Learned from Thailand's Obesity Prevention and Control Policies [Internet]. 2019. Available from:

| Notes | Reference | Criteria | South Korea |
|-------|--------------|---|------------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 10.8 - 12.5 |
| 2 | (2) | Adult obesity prevalence (%) | 35.7 |
| 3 | (3) | Childhood obesity prevalence (%) | 15.0 |
| 4 | (4) | Adults with diagnosed type 2 diabetes (%) | 6.9 |
| 5 | (5) | Prevalence of dental caries in children (%) | 53.5 - 61.6 |
| 6 | (6) | Sugary drinks tax | Planned |
| 7 | (7) (8) | Sugar reformulation targets | Voluntary |
| 8 | (8) | Front-of-pack nutrition labelling system (FOPL) | Voluntary |
| 9 | (8) (9) (10) | Marketing restrictions | Legislated restriction |
| 10 | (7) | Public awareness campaigns | Active campaign |
| 11 | n/a | Public procurement guidelines | No measures |
| 12 | n/a | Independent scrutiny | No |
| 13 | (7) | Knowledge, Attitudes, and Behaviours research | Yes |

https://documents1.worldbank.org/curated/en/397481548340562764/pdf/Lessons-Learned-from-Thailands-Obesity-Prevention-and-Control-Policies.pdf

Notes

- 1. Data is pooled from five studies involving children and adolescents aged 9 14 years conducted 2002 to 2011
- 2. Data from 2018, adults ages 20 years and above

3. Data from 2007, children aged 6 – 18 years old, national sample of 80,460. See Reference for alternative BMI cut-offs used.

- 4. Data from 2019, adults aged 20 70 years
- 5. Data from 2012, children aged 12 to 16 years old. 53.5% for boys, 61.6% for girls
- 6. Reference is a news article
- 7. Industry-promoted plan to reduce sugar content of drinks by 5%–10% by 2020
- 8. Restrictions on the use of 'low' and 'no' sugar claims based on sugar content per 100g product
 9. -
- 10. Campaign started in 2016 for an initial 5-year period
- 11. No measures identified
- 12. None identified
- 13. –

- Ha K, Chung S, Joung H, Song Y. Dietary sugar intake and dietary behaviors in Korea: a pooled study of 2,599 children and adolescents aged 9-14 years. Nutr Res Pract. 2016 Oct;10(5):537–45.
- Nam GE, Kim Y-H, Han K, Jung J-H, Rhee E-J, Lee S-S, et al. Obesity Fact Sheet in Korea, 2019: Prevalence of Obesity and Abdominal Obesity from 2009 to 2018 and Social Factors. J Obes Metab Syndr. 2020 Jun 30;29(2):124–32.
- World Obesity Federation. South Korea Obesity prevalence [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 26]. Available from: https://data.worldobesity.org/country/south-korea-114/#data_prevalence

- International Diabetes Federation. Republic of Korea diabetes report 2010 2045 [Internet]. 2019 [cited 2021 Oct 26]. Available from: https://diabetesatlas.org/data/
- 5. Kim A-H, Shim Y-S, Kim J-B, An S-Y. Caries Prevalence in Korean Children and Adolescents from 2000 to 2012. J Clin Pediatr Dent. 2017;41(1):32–7.
- 6. Ji-u K. [Special] Will sugar tax successfully land in Korea? [Internet]. KBR. 2021 [cited 2021 Oct 26]. Available from: http://www.koreabiomed.com/news/articleView.html?idxno=10841
- Sun H. Efforts to reduce sugar intake: the case of Korea. Perspect Public Health. 2017 May 1;137(3):154–5.
- foodnavigator-asia.com. 'Clarity is key': Low and no sugar claims in the spotlight as South Korea tightens regulations [Internet]. foodnavigator-asia.com. [cited 2021 Oct 26]. Available from: https://www.foodnavigator-asia.com/Article/2019/12/09/Clarity-is-key-Low-and-no-sugar-claimsin-the-spotlight-as-South-Korea-tightens-regulations
- Cather A, MPH. Food Advertising Restrictions for Youth, South Korea [Internet]. NYC Food Policy Center (Hunter College). 2016 [cited 2021 Oct 26]. Available from: https://www.nycfoodpolicy.org/food-advertising-restrictions-youth-south-korea-urban-food-policysnapshot/
- 10. Kim S, Lee Y, Yoon J, Chung S-J, Lee S-K, Kim H. Restriction of television food advertising in South Korea: Impact on advertising of food companies. Health Promot Int. 2012 Jun 19;28.

| Notes | Reference | Criteria | UK |
|-------|----------------|---|------------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 7.0 |
| 2 | (2) | Adult obesity prevalence (%) | 28.0* |
| 3 | (2) (3) | Childhood obesity prevalence (%) | 21.0* |
| 4 | (4) | Adults with diagnosed type 2 diabetes (%) | 3.9 |
| 5 | (5) | Prevalence of dental caries in children (%) | 23 |
| 6 | (6) | Sugary drinks tax | Yes |
| 7 | (7) | Sugar reformulation targets | Voluntary |
| 8 | (8) | Front-of-pack nutrition labelling system (FOPL) | Voluntary |
| 9 | (9) | Marketing restrictions | Legislated restriction |
| 10 | (10) | Public awareness campaigns | Previous campaign |
| 11 | (11) (12) | | National or mandatory |
| | | Public procurement guidelines | measures |
| 12 | (13) (14) (15) | Independent scrutiny | Yes |
| 13 | (16) | Knowledge, Attitudes, and Behaviours research | Yes |

*Data is for England only.

- 1. Data collected 2014/15 2015/16, national sample of 1082 adults aged 19–64 years
- 2. Health Survey for England 2019 data, adults aged 16+ years
- 3. Data from National Child Measurement Programme 2019/20. Children aged 10 11 years
- 4. Age-adjusted comparative prevalence of diabetes, adults aged 20 79 years, 2019 data
- 5. Both permanent and deciduous teeth. National survey of 78,767 children aged 5 years

6. Tax implemented April 2018, 24p per litre of drink containing 8g sugar per 100mL, 18p per litre of drink containing 5–8 g sugar per 100mL

7. 20% sugar reduction target set in 2016 to be achieved by 2020, covering food categories that contribute most to children's sugar intake

8. –

9. Implemented July 2017, ban on the advertising of high fat, salt and sugar food and drink products in children's media

10. In 2016, Public Health England launched the Change4Life Sugar Smart Campaign, which aimed to raise awareness of sugar in foods and drinks and to encourage parents to reduce their children's intake

- 11. Official Government Buying Standards (GBS) for food and catering services and
- The Requirements for School Food Regulations 2014
- 12. Various including Sustain, Action on Sugar, Obesity Health Alliance

13. –

References

- Amoutzopoulos B, Steer T, Roberts C, Collins D, Page P. Free and Added Sugar Consumption and Adherence to Guidelines: The UK National Diet and Nutrition Survey (2014/15-2015/16). Nutrients. 2020 Feb 1;12(2):E393.
- Baker C. Obesity Statistics (UK). 2021 Oct 28 [cited 2021 Oct 28]; Available from: https://commonslibrary.parliament.uk/research-briefings/sn03336/
- National Child Measurement Programme. National Child Measurement Programme, England 2019/20 School Year [Internet]. NHS Digital. [cited 2021 Oct 28]. Available from: https://digital.nhs.uk/dataand-information/publications/statistical/national-child-measurement-programme/2019-20-schoolyear
- International Diabetes Federation. United Kingdom diabetes report 2010 2045 [Internet]. [cited 2021 Oct 28]. Available from: https://diabetesatlas.org/data/
- Public Health England. Oral health survey of 5-year-old children 2019 [Internet]. 2020 [cited 2021 Oct 28]. Available from: https://www.gov.uk/government/statistics/oral-health-survey-of-5-year-old-children-2019
- 6. 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 Feb 11;17(2):e1003025.
- 7. Public Health England. Sugar reduction: report on progress between 2015 and 2019. 2020; Available from:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/fil e/984282/Sugar_reduction_progress_report_2015_to_2019-1.pdf

- 8. Department of Health and Social Care (UK). Guide to creating a front of pack (FoP) nutrition label for pre-packed products sold through retail outlets. 2013;33.
- 9. Advertising Standards Authority. New rules ban the advertising of high fat, salt and sugar food and drink products in children's media [Internet]. 2016 [cited 2021 Oct 28]. Available from: https://www.asa.org.uk/news/new-rules-ban-the-advertising-of-high-fat-salt-and-sugar-food-anddrink-products-in-childrens-media.html
- 10. Bradley J, Gardner G, Rowland MK, Fay M, Mann K, Holmes R, et al. Impact of a health marketing campaign on sugars intake by children aged 5–11 years and parental views on reducing children's consumption. BMC Public Health. 2020 Mar 30;20(1):331.
- 11. Department for Environment, Food & Rural Affairs. Sustainable procurement: the GBS for food and catering services [Internet]. GOV.UK. 2014 [cited 2021 Oct 28]. Available from: https://www.gov.uk/government/publications/sustainable-procurement-the-gbs-for-food-and-catering-services
- HM Government. The Requirements for School Food Regulations 2014 [Internet]. Queen's Printer of Acts of Parliament; 2014 [cited 2021 Oct 28]. Available from: https://www.legislation.gov.uk/uksi/2014/1603/contents/made
- Sustain. Who we are | Sustain [Internet]. [cited 2021 Oct 28]. Available from: https://www.sustainweb.org/about/
- 14. Action on Sugar. About us Action on Sugar [Internet]. [cited 2021 Oct 28]. Available from: http://www.actiononsugar.org/about-us/
- 15. Obesity Health Alliance. About [Internet]. Obesity Health Alliance. [cited 2021 Oct 28]. Available from: http://obesityhealthalliance.org.uk/about-the-oha/
- Tang CS, Mars M, James J, de Graaf K, Appleton KM. Sweet Talk: A Qualitative Study Exploring Attitudes towards Sugar, Sweeteners and Sweet-Tasting Foods in the United Kingdom. Foods. 2021 Jun;10(6):1172.

| Notes | Reference | Criteria | Norway |
|-------|-----------|---|------------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 7.3 |
| 2 | (2) | Adult obesity prevalence (%) | 14.1 |
| 3 | (3) | Childhood obesity prevalence (%) | 2.5 |
| 4 | (4) | Adults with diagnosed type 2 diabetes (%) | 5.3 |
| 5 | (5) | Prevalence of dental caries in children (%) | 39.1 |
| 6 | (6) | Sugary drinks tax | No |
| 7 | (7) | Sugar reformulation targets | Voluntary |
| 8 | (8) | Front-of-pack nutrition labelling system (FOPL) | Voluntary |
| 9 | (9) | Marketing restrictions | Voluntary restrictions |
| 10 | (10) | Public awareness campaigns | Previous campaign |
| 11 | (11) | | Local or voluntary |
| | | Public procurement guidelines | measures |
| 12 | (12) | Independent scrutiny | Yes |
| 13 | n/a | Knowledge, Attitudes, and Behaviours research | No |

- 1. Data collected 2010-2011, samples of 862 men and 925 women aged 18 70 years old.
- 2. Self-reported, adults aged 18+ years old, collected as part of Eurostat 2019

3. National sample of 1838 children aged 13 years old. BMI cut-offs are Extended International (IOTF) Body Mass Index Cut-Offs

- 4. 2019, age-adjusted comparative prevalence of diabetes for 20 79 year olds
- 5. 2020 data, 12 year olds, proportion with DMFT>0
- 6. Effective from July 2021, the previous excise duty on non-alcoholic beverages was abolished 7. –
- 8. Keyhole logo: a voluntary free-of-charge label that identifies healthier choices within 33 food groups (including bread, cheese, ready meals), based on nutritional criteria, including sugar content.

9. Food industry self-regulation restricting marketing of unhealthy foods and beverages to children < 13 years old

10. Campaigns included The Saturday All Week Campaign and Keyhole Logo communications campaigns

11. National Guideline for Food and Meals in Schools (published in 2015) includes guidance to limit sugar content of school food

12. –

13. No studies identified

References

 Totland TH, Melnæs BK, Lundberg-Hallén N, Helland-Kigen KM, Lund-Blix NA, Myhre JB, et al. Norkost 3 En landsomfattende kostholdsundersøkelse blant menn og kvinner i Norge i alderen 18-70 år, 2010-11 [Internet]. 2012. Available from: https://www.helsedirektoratet.no/rapporter/norkost-3en-landsomfattende-kostholdsundersokelse-blant-menn-og-kvinner-i-norge-i-alderen-18-70-ar-2010-

11/Norkost%203%20en%20landsomfattende%20kostholdsundersokelse%20blant%20menn%20og% 20kvinner%20i%20Norge%20i%20alderen-18-70%20%C3%A5r%202010-

11.pdf/_/attachment/inline/b7bafaab-6059-4450-8d76-

c3ed9f3eaf3f:be251cd1153cf1ae8e4c46eedddc13b36da3d11d/Norkost%203%20en%20landsomfatt ende%20kostholdsundersokelse%20blant%20menn%20og%20kvinner%20i%20Norge%20i%20alder en-18-70%20%C3%A5r%202010-11.pdf

 World Obesity Federation. Norway Obesity prevalence [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 27]. Available from: https://data.worldobesity.org/country/norway-163/#data_prevalence

- 3. Øvrebø B, Bergh IH, Stea TH, Bere E, Surén P, Magnus PM, et al. Overweight, obesity, and thinness among a nationally representative sample of Norwegian adolescents and changes from childhood: Associations with sex, region, and population density. PLOS ONE. 2021 Aug 3;16(8):e0255699.
- International Diabetes Federation. Norway diabetes report 2010 2045 [Internet]. [cited 2021 Oct 27]. Available from: https://diabetesatlas.org/data/
- Statistics Norway. 13033: Dental status among 5-, 12- og 18-year-olds, by age, contents, year and region. Statbank Norway [Internet]. SSB. [cited 2021 Oct 27]. Available from: https://www.ssb.no/en/system/
- Global Food Research Program University of North Carolina. Sugary drink taxes around the world [Internet]. 2021. Available from: https://www.globalfoodresearchprogram.org/wpcontent/uploads/2021/09/SugaryDrink_tax_maps_PPTs_2021_September.pdf
- World Health Organization, Regional Office for Europe. Incentives and disincentives for reducing sugar in manufactured foods An exploratory supply chain analysis [Internet]. 2017. Available from: https://www.euro.who.int/__data/assets/pdf_file/0004/355972/Sugarreport_WHO_107773_updated-and-revised-Dec-2017.pdf
- 8. European Commission. Report from the Commission to the European Parliament and the Council regarding the use of additional forms of expression and presentation of the nutrition declaration [Internet]. 2020. Available from: https://ec.europa.eu/food/system/files/2020-05/labelling-nutrition_fop-report-2020-207_en.pdf
- Øvrebø B, Helleve A. The Norwegian industry-led scheme restricting marketing of unhealthy food and beverages to children. Eur J Public Health [Internet]. 2020 Sep 1 [cited 2021 Oct 27];30(Supplement_5). Available from: https://doi.org/10.1093/eurpub/ckaa165.077
- 10. World Cancer Research Fund International. NOURISHING Database: Public awareness, mass media and informational campaigns and social marketing on healthy eating [Internet]. Available from: https://policydatabase.wcrf.org/level_one?page=nourishing-level-one#step2=7#step3=365
- 11. World Cancer Research Fund International. NOURISHING Database: Voluntary guidelines for food available in schools [Internet]. Available from:

https://policydatabase.wcrf.org/level_one?page=nourishing-level-one#step2=1#step3=351

12. Consumers International. Norwegian Consumer Council [Internet]. [cited 2021 Oct 27]. Available from: https://www.consumersinternational.org/members/members/norwegian-consumer-council/

| Notes | Reference | Criteria | Islamic Republic of Iran |
|-------|-----------|---|--------------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 9.0 |
| 2 | (2) | Adult obesity prevalence (%) | 22.7 |
| 3 | (3) | Childhood obesity prevalence (%) | 11.5 |
| 4 | (4) | Adults with diagnosed type 2 diabetes (%) | 9.6 |
| 5 | (5) | Prevalence of dental caries in children (%) | 72.8* |
| 6 | (6) | Sugary drinks tax | Yes |
| 7 | (7) | Sugar reformulation targets | No |
| 8 | (8) (9) | Front-of-pack nutrition labelling system (FOPL) | Mandatory |
| 9 | (7) | Marketing restrictions | Legislated restriction |
| 10 | (10) | Public awareness campaigns | Previous campaign |
| 11 | (7) (6) | | National or mandatory |
| | | Public procurement guidelines | measures |
| 12 | (8) | Independent scrutiny | No |
| 13 | (6) | Knowledge, Attitudes, and Behaviours research | No |

Notes

- 1. Data collected in 2013 (FAO Statistics, 2017)
- 2. Data collected in 2016, adults aged 18+ years, national sample of 31050
- 3. Children aged 10 12 years old, sample of 2506. BMI cut offs based on WHO 85th & 95th Centile. See Reference for additional notes including on BMI cut-offs

4. Age-adjusted comparative prevalence of diabetes, data collected 2019, adults aged 20 – 79 years old

5. * Total rate of dental caries (based on DMFT and dmft values), meta-analysis of studies published up to October 2018, children aged <18 years old, (95%CI, 69.2-76.4%)

- 6. –
- 7. –
- 8. –

9. All broadcast advertising of soft drinks prohibited since 2004; in 2014, further restrictions proposed on 24 more food items. Additional restrictions on radio and television advertising of foods high in salt, fat and sugar to children and adolescents (up to 19 years of age)

- 10. Reference is a news article
- 11. Sales of certain HFSS food and drink products banned in schools
- 12. None identified
- 13. No studies identified

References

- 1. Al Jawaldeh A, Mallah C, Obeid O. Regional Policies on Sugar Intake Reduction at Population Levels to Address Obesity in the Eastern Mediterranean. 2018 May 31;2:1007.
- Djalalinia S, Saeedi Moghaddam S, Sheidaei A, Rezaei N, Naghibi Iravani SS, Modirian M, et al. Patterns of Obesity and Overweight in the Iranian Population: Findings of STEPs 2016. Front Endocrinol. 2020;11:42.
- 3. World Obesity Federation. Iran Obesity prevalence [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 27]. Available from: https://data.worldobesity.org/country/iran-97/#data prevalence
- International Diabetes Federation. Iran (Islamic Republic of) diabetes report 2010 2045 [Internet]. [cited 2021 Oct 27]. Available from: https://diabetesatlas.org/data/
- 5. Soltani MR, Sayadizadeh M, Raeisi Estabragh S, Ghannadan K, Malek-Mohammadi M. Dental Caries Status and its Related Factors in Iran: A Meta-Analysis. J Dent. 2020 Sep;21(3):158–76.
- Al-Jawaldeh A, Hammerich A, Doggui R, Engesveen K, Lang K, McColl K. Implementation of WHO Recommended Policies and Interventions on Healthy Diet in the Countries of the Eastern Mediterranean Region: From Policy to Action. Nutrients [Internet]. 2020 Nov 30 [cited 2021 Apr 28];12(12). Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7760940/
- World Health Organization, Regional Office for the Eastern Mediterranean. Proposed policy priorities for preventing obesity and diabetes in the Eastern Mediterranean Region [Internet]. 2017. Available from:

http://apps.who.int/iris/bitstream/handle/10665/259519/emropub_2017_20141.pdf?sequence=1

- Edalati S, Omidvar N, Roudsari A, Ghodsi D, Zargaraan A. Development and implementation of nutrition labelling in Iran: A retrospective policy analysis. Int J Health Plann Manage. 2019 Nov 10;35.
- Moslemi M, Kheirandish M, Mazaheri RNF, Hosseini H, Jannat B, Mofid V, et al. National food policies in the Islamic Republic of Iran aimed at control and prevention of noncommunicable diseases. East Mediterr Health J Rev Sante Mediterr Orient Al-Majallah Al-Sihhiyah Li-Sharq Al-Mutawassit. 2020 Dec 9;26(12):1556–64.
- 10. Al Jazeera Media Network. Iranians raise diabetes awareness [Internet]. 2009 [cited 2021 Oct 27]. Available from: https://www.aljazeera.com/news/2009/11/14/iranians-raise-diabetes-awareness

| Notes | Reference | Criteria | Kingdom of Bahrain |
|-------|-----------|---|--------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | n/a |
| 2 | (2) | Adult obesity prevalence (%) | 36.9 |
| 3 | (2) | Childhood obesity prevalence (%) | 17.9 |
| 4 | (3) | Adults with diagnosed type 2 diabetes (%) | 15.6 |
| 5 | (4) | Prevalence of dental caries in children (%) | 59.0 - 86.8 |
| 6 | (5) | Sugary drinks tax | Yes |

| 7 | (6) | Sugar reformulation targets | No targets |
|----|-----|---|------------------------|
| 8 | (6) | Front-of-pack nutrition labelling system (FOPL) | No FOPL |
| 9 | (7) | Marketing restrictions | Legislated restriction |
| 10 | (6) | Public awareness campaigns | No campaign |
| 11 | n/a | Public procurement guidelines | No measures |
| 12 | (6) | Independent scrutiny | No |
| 13 | (8) | Knowledge, Attitudes, and Behaviours research | No |

1. No data available

2. Data collected as part of National Health Survey 2018, national sample of 2948 adults aged 18+ years. Pregnant women and women less than two months postpartum excluded.

3. Data collected 2016 as part of Global School-based Student Health Survey (GSHS), sample of 7141 children and adolescents aged 13 – 17 years.

4. 2019 data, age-adjusted comparative prevalence of diabetes, adults aged 20 – 79 years.

5. Unpublished survey of government school students, dental caries prevalence: 86.8% in 6-year-olds, 56.4% in 12-year-olds, and 59% in 15-year-olds.

6. Implemented December 2017, 50% excise tax on aerated soft drinks, 100% excise tax on energy drinks.

- 7. None identified
- 8. –

9. Policy to reduce the impact of marketing of foods and beverages high in free sugars on children.

- 10. No campaigns identified
- 11. No measures identified
- 12. No organisations identified
- 13. No survey identified

References

- 1. Al Jawaldeh A, Mallah C, Obeid O. Regional Policies on Sugar Intake Reduction at Population Levels to Address Obesity in the Eastern Mediterranean. 2018 May 31;2:1007.
- 2. World Obesity Federation. Bahrain Obesity prevalence [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 26]. Available from:
 - https://data.worldobesity.org/country/bahrain-15/#data_prevalence
- International Diabetes Federation. Bahrain diabetes report 2010 2045 [Internet]. [cited 2021 Oct 26]. Available from: https://diabetesatlas.org/data/
- 4. Ministry of Health (Kingdom of Bahrain). First Gulf Countries Council Pathfinder Oral Health Survey— 2014–2015. Oral and Dental Health services. unpublished data.
- Global Food Research Program University of North Carolina. Sugary drink taxes around the world [Internet]. 2021. Available from: https://www.globalfoodresearchprogram.org/wpcontent/uploads/2021/09/SugaryDrink_tax_maps_PPTs_2021_September.pdf
- 6. World Health Organization, Regional Office for the Eastern Mediterranean. Proposed policy priorities for preventing obesity and diabetes in the Eastern Mediterranean Region [Internet]. 2017. Available from:

http://apps.who.int/iris/bitstream/handle/10665/259519/emropub_2017_20141.pdf?sequence=1

 World Health Organization. The Global Health Observatory. Existence of any policies on marketing of foods to children [Internet]. [cited 2021 Oct 26]. Available from: https://www.who.int/data/gho/data/indicators/indicator-details/GHO/existence-of-any-policies-onmarketing-of-foods-to-children

 Al-Jawaldeh A, Hammerich A, Doggui R, Engesveen K, Lang K, McColl K. Implementation of WHO Recommended Policies and Interventions on Healthy Diet in the Countries of the Eastern Mediterranean Region: From Policy to Action. Nutrients [Internet]. 2020 Nov 30 [cited 2021 Apr 28];12(12). Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7760940/

| Notes | Reference | Criteria | Australia |
|-------|-----------|---|------------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 9.4 |
| 2 | (2) | Adult obesity prevalence (%) | 31.3 |
| 3 | (3) | Childhood obesity prevalence (%) | 8.2 |
| 4 | (4) | Adults with diagnosed type 2 diabetes (%) | 5.3 |
| 5 | (5) | Prevalence of dental caries in children (%) | 24.0 |
| 6 | (6) | Sugary drinks tax | No |
| 7 | (7) | Sugar reformulation targets | Voluntary |
| 8 | (8) | Front-of-pack nutrition labelling system (FOPL) | Voluntary |
| 9 | (9) | Marketing restrictions | Voluntary restrictions |
| 10 | (10) | Public awareness campaigns | Previous campaign |
| | (11) | | National or mandatory |
| 11 | | Public procurement guidelines | measures |
| 12 | (12) | Independent scrutiny | Yes |
| 13 | (13) | Knowledge, Attitudes, and Behaviours research | Yes |

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Notes

1. Data collected 2011-12

2. Data collected as part of Australian National Health Survey 2017-18, sample of 21,000 adults aged 18+ years, approx. 32% of 2017 data based on self-reported height and weight

- 3. Data collected 2017–18, children and adolescents aged 2–17 years
- 4. Prevalence of self-reported type 2 diabetes, among persons aged 18 and over, 2017–18
- 5. National Child Oral Health Study 2012–14, children aged 6–14 years
- 6. –
- 7. Part of the Healthy Food Partnership
- 8. Voluntary Health Stars system
- 9. –

10. Rethink Sugary Drink (www.rethinksugarydrink.org.au) is the main campaign for sugar

11. Measures vary by state

12. Also see: Obesity Policy Coalition, GLOBE Obesity at Deakin University, Public Health Association, Sugar Free Smiles (dental), Sugar by Half

13. –

- 1. Food Standards Australia New Zealand. Sugar [Internet]. 2019 [cited 2021 Oct 20]. Available from: https://www.foodstandards.gov.au/consumer/nutrition/Pages/Sugar.aspx
- World Obesity Federation. Australia [Internet]. World Obesity Federation Global Obesity Observatory. [cited 2021 Oct 20]. Available from: https://data.worldobesity.org/country/australia-10/#data_prevalence
- Australian Institute of Health and Welfare. Childhood overweight and obesity—the impact of the home environment, Summary [Internet]. 2021 [cited 2021 Oct 25]. Available from: https://www.aihw.gov.au/reports/overweight-obesity/childhood-overweight-and-obesity-impactof-home/summary
- Australian Institute of Health and Welfare. Diabetes, Type 2 diabetes [Internet]. 2020 [cited 2021 Oct 25]. Available from: https://www.aihw.gov.au/reports/diabetes/diabetes/contents/how-many-australians-have-diabetes/type-2-diabetes
- 5. Australian Institute of Health and Welfare. Oral health and dental care in Australia, Healthy teeth [Internet]. 2021 [cited 2021 Oct 25]. Available from:

https://www.aihw.gov.au/reports/den/231/oral-health-and-dental-care-inaustralia/contents/healthy-teeth

- Global Food Research Program, University of North Carolina. Sugary drinks taxes around the world [Internet]. 2021. Available from: https://globalfoodresearchprogram.org/wpcontent/uploads/2021/04/SSB_sugary_drink_taxes_maps.pdf
- Australian Government Department of Health. Partnership Reformulation Program Summary of food categories and reformulation targets [Internet]. Australian Government Department of Health; 2021 [cited 2021 Oct 25]. Available from: https://www.health.gov.au/resources/publications/partnership-reformulation-program-summary-
- of-food-categories-and-reformulation-targets 8. Shahid M, Neal B, Jones A. Uptake of Australia's Health Star Rating System 2014–2019. Nutrients. 2020 Jun;12(6):1791.
- Australia's food marketing regulation [Internet]. Obesity Evidence Hub. [cited 2021 Oct 25]. Available from: https://www.obesityevidencehub.org.au/collections/prevention/australias-system-ofregulation
- 10. Overweight and obesity mass media education campaigns [Internet]. Obesity Evidence Hub. [cited 2021 Oct 25]. Available from:

https://www.obesityevidencehub.org.au/collections/environmental/mass-media-educationcampaigns

- 11. World Cancer Research Fund International. NOURISHING Database: Offer healthy food Standards in other specific locations (eg health facilities workplace) [Internet]. [cited 2021 Oct 25]. Available from: https://policydatabase.wcrf.org/level_one?page=nourishing-level-one#step2=1#step3=514
- The George Institute. Our strategy [Internet]. The George Institute for Global Health. [cited 2021 Oct 25]. Available from: https://www.georgeinstitute.org/our-strategy
- Miller C, Wakefield M, Braunack-Mayer A, Roder D, O'Dea K, Ettridge K, et al. Who drinks sugar sweetened beverages and juice? An Australian population study of behaviour, awareness and attitudes. BMC Obes. 2019 Jan 3;6(1):1.

| Notes | Reference | Criteria | Malaysia |
|-------|-------------|---|------------------------|
| 1 | (1) | Proportion of energy from added sugars (%) | 13.3 |
| 2 | (2) | Adult obesity prevalence (%) | 19.7 |
| 3 | (2) | Childhood obesity prevalence (%) | 14.8 |
| 4 | (3) | Adults with diagnosed type 2 diabetes (%) | 16.7 |
| 5 | (4) | Prevalence of dental caries in children (%) | 44.6* |
| 6 | (5) | Sugary drinks tax | Yes |
| 7 | (6) | Sugar reformulation targets | Planned |
| 8 | (7) (8) (6) | Front-of-pack nutrition labelling system (FOPL) | Voluntary |
| 9 | (9) (6) | Marketing restrictions | Voluntary restrictions |
| 10 | (5) | Public awareness campaigns | Previous campaign |
| 11 | n/a | Public procurement guidelines | No measures |
| 12 | (10) | Independent scrutiny | Yes |
| 13 | n/a | Knowledge, Attitudes, and Behaviours research | No |

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Notes

- 1. Estimated from FAO food balance sheet data (2009)
- 2. National sample of 9811 adults aged 18+ years
- 3. Children aged 5-17 years, cut-offs based on BMI-for-Age z-score
- 4. Age-adjusted comparative prevalence of diabetes, data from 2019, adults aged 20 79 years
- old

5. *Study includes deciduous and permanent teeth; sample of 312 children aged 7 to 11 years, data collected 2013; 95% CI: 42.2, 53.3

6. Excise duty introduced July 2019 at RM 0.40 per litre on carbonated, flavoured and other nonalcoholic drinks containing added sugar >5g/100 ml; and fruit juices and vegetable juices with sugar >12g/100ml

7. Government engagement with industry to encourage voluntary reformulation of their products, target of at least 5 reformulated products/year (includes sugar, salt, fibre). MyChoice Programme also has been launched, which encourages food and beverage companies in the out-of-home sector to reformulate their meals and drinks.

8. Healthier Choice Logo (packaged foods). Note also MyChoice Logo initiative for out-of-home settings. Mandatory labelling of total sugar is proposed as part of the National Plan of Action for Nutrition of Malaysia (NPANM) III 2016-2025

9. As part of the NPANM III plan is to turn voluntary guideline into a legislated restriction.

10. –

11. None identified

12. –

13. No representative studies identified

- 1. Amarra MSV, Khor GL, Chan P. Intake of added sugar in Malaysia: a review. Asia Pac J Clin Nutr. 2016;25(2):227–40.
- Institute for Public Health (Malaysia). Institute for Public Health National Health and Morbidity Survey (NHMS) 2019 [Internet]. 2019 [cited 2021 Oct 26]. Available from: http://iku.gov.my/nhms-2019
- International Diabetes Federation. Malaysia diabetes report 2010 2045 [Internet]. [cited 2021 Oct 26]. Available from: https://www.diabetesatlas.org/data/
- Nachatar Singh S. Factors associated with dental caries among selected urban school children in Kuala Lumpur, Malaysia. Arch Orofac Sci. 2015 Jun 8;10:24–33.
- 5. Ministry of Health (Malaysia). The Implementation of Taxation of Sugar-Sweetened Beverages (SSBs) in Malaysia [Internet]. [cited 2021 Oct 26]. Available from: https://nutrition.moh.gov.my/en/the-implemention-of-taxation-on-sugar-sweetened-beverages-ssbs-in-malaysia/
- Ministry of Health (Malaysia). National Plan of Action for Nutrition of Malaysia III 2016-2025 [Internet]. 2016. Available from: https://nutrition.moh.gov.my/wpcontent/uploads/2016/12/NPANM_III.pdf
- Nutrition Division Ministry of Health Malaysia. Guidelines on Healthier Choice Logo Malaysia [Internet]. 2017. Available from: https://nutrition.moh.gov.my/wp-
- content/uploads/2018/01/Guidelines%20on%20Healthier%20Choice%20Logo%20Malaysia.pdf
 8. Nutrition Society of Malaysia. Guidelines on MyChoice Logo Malaysia [Internet]. 2021. Available from: https://nutrition.moh.gov.my/wp-content/uploads/2021/04/Garis-panduan-MyChoice-1.pdf
- Ng S, Kelly B, Yeatman H, Swinburn B, Karupaiah T. Policy Inertia on Regulating Food Marketing to Children: A Case Study of Malaysia. Int J Environ Res Public Health. 2021 Jan;18(18):9607.
- Nutrition Society of Malaysia. About Nutrition Society Malaysia (NSM) [Internet]. [cited 2021 Oct 26]. Available from: https://nutriweb.org.my/index.php?about-nsm