POLICY PAPER: EXPLORING OPTIONS FOR IMPROVING THE COMPOSITION OF THE FOOD SUPPLY

Contents

Executive summary

In August 2019, the Australia and New Zealand Ministerial Forum on Food Regulation (the Forum) agreed to a suite of activities to contribute to achieving the objective of Priority two of the Food Regulation System- *supporting public health objectives to reduce chronic disease related to overweight and obesity.*

As part of the suite of activities to support achieving the objective of Priority 2, the Forum agreed for the Food Regulation Standing Committee (FRSC) to explore options for setting compositional limits for certain foods and beverages[1]. Compositional limits are one approach to improving the composition of the food supply, in addition to non-regulatory approaches such as voluntary reformulation.

The work on improving food composition complements other activities occurring within Priority 2 of the Food Regulation System. For example, supporting consumers to make informed healthy choices through food labelling and interpretive front-of-pack labelling such as the Health Star Rating (HSR) system.

Context and understanding the issue

Dietary Guidelines in Australia[2] and New Zealand[3] provide food-based recommendations for healthy dietary patterns, meeting nutrient requirements, reducing the risk of diet-related chronic conditions, and maintaining a healthy body weight. According to Dietary Guidelines, Australians and New Zealanders should limit consumption of foods containing saturated (and trans) fats, added sugars and salt (sodium).

On average, Australians and New Zealanders are not following this dietary advice with poor dietary patterns and overweight and obesity common in both countries, contributing to non-communicable diseases and poor health outcomes.

The importance of improving dietary intakes and reducing the burden of diet-related non-communicable disease is globally recognised, including by the World Health Organization (WHO) and Food and Agriculture Organization (FAO). Encouraging reformulation (i.e. changing the composition) of foods to reduce the content of saturated fats, trans fats, free/added sugars and salt/sodium is identified by the WHO as a key action to improve nutrition and reduce diet-related risk factors. The WHO also identifies other actions to improve the food environment such as nutrition labelling, interpretive front-of-pack labelling, dietary education and restricting advertising of unhealthy foods and drinks to children.

Improving the composition of the food supply to reduce nutrients of concern can support public health outcomes and offer advantages over other public health approaches. For example, it is cost effective and can support sustained public health benefits. If widely adopted, this approach can also support equity as the benefits of improved food composition can be accessed by all consumers, not just those who respond to behaviour change interventions (lower educated or disadvantaged groups are less likely to respond), or

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[1] In this paper, compositional limits refers to mandatory limits on the presence of a nutrient in a particular food or food category. This differs from voluntary reformulation where the food industry may voluntarily change the composition of particular foods to improve its nutrition profile with or without Government leadership.

[2] Australian National Health and Medical Research Council (NHMRC) (2013) *Australian Dietary Guidelines.* Available at: https://eatforhealth.govcms.gov.au/sites/default/files/content/n55_australian_dietary_guidelines.pdf

[3] New Zealand Ministry of Health (2015) *Eating and Activity Guidelines for New Zealand adults*. Available at: https://www.health.govt.nz/publication/eating-and-activity-guidelines-new-zealand-adults

consumers who have the skills to identify healthier products and can afford to purchase them (noting the HSR system is also intended to support consumers to identify healthier products).

Current approaches for improving the composition of the food supply

This Policy Paper explores actions in place internationally to improve the composition of the food supply. Mandatory compositional limits are in place in some countries, particularly for sodium/salt and trans fats. Non-regulatory actions are also underway in some countries to encourage the food industry to voluntarily reduce particular nutrients in their products. Sodium, sugar and saturated fat are targets of these voluntary actions. Some of these voluntary programs have been successful in reducing selected risk nutrients in the food supply, however, success was influenced by the design and political support for the voluntary programs.

There are also activities in place in Australia and New Zealand to improve the composition of the food supply. Through the Australian Healthy Food Partnership and the New Zealand Heart Foundation Reformulation Program work is underway to encourage the industry to voluntarily reformulate certain food products to reduce the levels of sugars, saturated fats and sodium. The Australian Healthy Food Partnership work is in its early stages, however sodium reformulation has previously been achieved through voluntary programs such as the Australian Food and Health Dialogue. The 2018 New Zealand Food Industry taskforce report and the New Zealand Government response to this report identified food reformulation as a priority area for further work. The Taskforce has since been disbanded but members have reported voluntarily working to deliver on the Taskforce's recommendations. However, voluntary reformulation activities can have limitations such as lack of consequences if reformulation targets are not achieved.

In relation to sugars, there is work underway by Food Standards Australia New Zealand (FSANZ) to consider changing the way added sugars are declared on a food label. If this work results in a change to sugars labelling it is possible that this may drive the food industry to reduce the added sugar content of their products in order to make more favourable added sugar declarations. However, in a recent Policy Guideline consultation some food industry members reported that food labelling is not necessarily a driver for them to reformulate their products.

Food and nutrient intakes in Australia and New Zealand, identification of where reformulation actions are already occurring, and consideration of potential gaps for activities to improve food composition.

This Policy Paper reports that, on average, Australians and New Zealanders are exceeding recommended limits for intakes of sugars, saturated fats and sodium. In Australia, some population groups, particularly the more vulnerable groups such as low those from socio-economic background, are also exceeding recommended limits for consumption of trans fat (comparable data for New Zealand are not available). The Policy paper identifies major sources of saturated fats, trans fats, sodium and sugars in Australian and New Zealanders' diets and then assesses whether actions to improve food composition is occurring in those food categories.

This Policy Paper identifies gaps in current voluntary actions in Australia and New Zealand to improve the composition of the food supply:

- There are no organised voluntary reformulation activities underway in the fast food/quick service sector despite (pre COVID-19) trends for increasing expenditure in Australian and New Zealand on foods at restaurants and ready-to-eat items. Some products in these outlets have significantly high levels of risk nutrients, and there is considerable variability

in levels of risk nutrients within product categories. Industry-led action to improve food composition in this sector is limited.

- There have been long running industry-led voluntary reformulation efforts to reduce the level of trans fats in the food supply. This has largely been successful, however, vulnerable population groups in Australia continue to exceed recommended limits for intake of trans fats.
- There are voluntary efforts in place to reduce the sugar content of beverages such as soft drinks. However, industry is largely focussed on reducing average sugar content across the wider beverage category by producing more non-sugar beverages (e.g. water or artificially sweetened diet drinks) rather than reducing the sugar content of traditional 'full sugar' products. Despite reductions in consumption of sugary drinks, traditional 'full sugar' products are still more popular than diet drinks. International examples demonstrate that the sugar content of 'full sugar' beverages can be lower.
- Meat-alternatives are a food category that is growing in popularity. Sodium levels in some of these products are high and there is large variation in sodium content across the category. Limited industry led reformulation has been observed.

Recommendations and next steps

In light of the above, the Policy Paper recommends:

- Time be allowed for the food industry to demonstrate achievements against voluntary reformulation targets for sodium, saturated fat and sugar (in foods) before regulatory options are pursued. It is recommended that progress against reformulation targets be assessed in 2 years to determine whether industry is on track to achieve the targets, or whether there are particular product categories where the industry's response is insufficient or ineffective.
- Additional voluntary reformulation targets be established for the quick service/fast food sector (sodium, saturated fat and sugar as appropriate), and for meat alternatives (sodium). If voluntary reformulation is not effective then further regulatory options could be considered.
- Given the outlined shortfalls in voluntary reformulation efforts for trans fats and sugary drinks, additional options should be explored to improve the composition of the food supply for these nutrients/food categories by progressing work through Food Regulation Policy Framework. These would be progressed as two separate pieces of work and used as a case study for informing the development of a systems approach which takes a strategic view on policies and procedures in relation to food composition in Australia and New Zealand, and the regulatory and non-regulatory options available to improve composition when voluntary measures do not sufficiently support public health outcomes.

POLICY PAPER: EXPLORING OPTIONS FOR IMPROVING THE COMPOSITION OF THE FOOD SUPPLY

Introduction

In August 2019, the Australia and New Zealand Ministerial Forum on Food Regulation (the Forum) agreed to a suite of activities to contribute to achieving the objective of Priority two of the Food Regulation System- *supporting public health objectives to reduce chronic disease related to overweight and obesity.*

Priority 2 of the Food Regulation System recognises overweight and obesity is a major health concern for Australia and New Zealand and a key risk factor for diet-related chronic disease.

As part of the suite of activities to support achieving the objective of Priority 2, the Forum agreed for the Food Regulation Standing Committee (FRSC) to explore options for setting compositional limits for certain foods and beverages[4]. Compositional limits are one approach to improving the composition of the food supply, in addition to non-regulatory approaches such as voluntary reformulation.

This work on food composition complements other activities occurring within Priority 2 of the Food Regulation System such as labelling to support consumers to make informed healthy choices through the Health Star Rating (HSR) system and through reviewing labelling of added sugars. It is recognised that labelling may also drive improvements in food composition as industry seeks to achieve a better HSR rating or more favourable declarations in the Nutrition Information Panel.

Purpose

Exploring options for improving the nutrient content of processed foods supports the objective of Priority 2, and the reduction of diet-related chronic disease more generally.

Healthier food composition is one lever, amongst multiple interacting factors, that can help improve population health outcomes by reducing the prevalence of overweight and obesity and diet-related chronic conditions.

While there are already voluntary actions underway to improve the composition of the food supply, this paper assesses the voluntary actions and seeks to identify food categories and/or nutrients where population health would benefit if additional actions were taken.

This paper is presented in four parts; Part 1 provides context and information to understand current patterns in Australia and New Zealand. Part 2 explores actions in Australia, New Zealand, and internationally to improve nutrient intakes through modifying the nutrient composition of the food supply. Part 3 considers intakes of key nutrients in Australia and New Zealand and identifies foods or food categories which are major contributors of those nutrients. Considering this information, and the current actions underway, the potential for additional options for improving the composition of the food supply are then explored. The paper concludes in Part 4 by making recommendations about next steps for work across the food system.

[4] In this paper, compositional limits refers to mandatory limits on the presence of a nutrient in a particular food or food category. This differs from voluntary reformulation where the food industry may voluntarily change the composition of particular foods to improve its nutrition profile with or without Government leadership.

Part 1: Context and understanding the issue

Evidence-based recommendations for healthy dietary patterns

Dietary Guidelines in Australia[5] and New Zealand[6] provide food-based recommendations for healthy dietary patterns, meeting nutrient requirements, reducing the risk of diet-related chronic conditions, and maintaining a healthy body weight. The Dietary Guidelines take into account the Nutrient Reference Values for Australia and New Zealand[7] which recommend amounts of essential nutrients to avoid nutritional deficiencies, and also provide recommended intakes of macronutrients and micronutrients to lower chronic disease risk.

According to Dietary Guidelines, Australians and New Zealanders should limit consumption of foods containing saturated (and trans) fats, added sugars and salt (sodium). However, many Australians and New Zealanders do not follow this advice and exceed the recommended intakes of saturated fats[8,9], added sugars[10,11] and sodium[12,13]. Consumption of too many energy dense-nutrient poor foods[14] provides unnecessary dietary energy and displaces more nutritious foods from the diet.

A review of the 2013 Australian Dietary Guidelines was announced in July 2020. This work is in its early stages and updated guidelines are expected in 2024. The 2013 Australian Dietary Guidelines remain applicable until the review is complete. The 2015 Eating and Activity Guidelines for New Zealand adults is currently being updated to include advice for

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[5] Australian National Health and Medical Research Council (NHMRC) (2013) *Australian Dietary Guidelines.* Available at: https://eatforhealth.govcms.gov.au/sites/default/files/content/n55_australian_dietary_guidelines.pdf

[6] New Zealand Ministry of Health (2015) *Eating and Activity Guidelines for New Zealand adults*. Available at: https://www.health.govt.nz/publication/eating-and-activity-guidelines-new-zealand-adults

[7] Australian National Health and Medical Research Council (NHMRC) and New Zealand Ministry of Health, (2006) *Nutrient Reference Values.* Available at: https://www.nrv.gov.au/home

[8] University of Otago and Ministry of Health (2011) A Focus on Nutrition: Key findings of the 2008/09 New Zealand Adult Nutrition Survey. Wellington: Ministry of Health.

[9] Australian Bureau of Statistics (ABS) (2016) *4364.0.55.007 - Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12*. Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007~2011-12~Main%20Features~Fat~707

[10] Australian Bureau of Statistics (ABS) (2016) *4364.0.55.011 - Australian Health Survey: Consumption of added sugars, 2011-12.* Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4364.0.55.011main+features12011-12

[11] Kibblewhile R. *et al*. (2017) 'Estimating Free and Added Sugar Intakes in New Zealand', *Nutrients.* 9(12): 1292

[12] Australian Bureau of Statistics (ABS) (2016) *4364.0.55.007 - Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12*. Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007~2011-12~Main%20Features~Sodium~715

[13] McLean RM, *et al.* (2018). 'Spot urine and 24-h diet recall estimates of dietary sodium intake from the 2008/09 New Zealand Adult Nutrition Survey: a comparison'. *European Journal of Clinical Nutrition*, 72:1120-1127.

[14] Australian Bureau of Statistics (ABS) (2016) *4364.0.55.007 - Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12.* Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007~2011-12~Main%20Features~Sodium~715

pregnant and breastfeeding women. However, advice for the general adult population will remain unchanged.

Prevalence and burden of overweight and obesity and poor diets

Overweight and obesity (measured by high body mass index) is a public health priority for Australia and New Zealand. Overweight and obesity is a major risk factor for cardiovascular disease, type-2 diabetes, some musculoskeletal conditions and some cancers[15].

The prevalence of overweight and obesity in Australia and New Zealand is high. In Australia in 2017-18, 67.0% of the adult population was overweight or obese, up from 63% in 2014-15 and 56% in 1995. In 2018/2019 65% of New Zealand adults (aged 15 years and above) were classified as overweight or obese[16]. Around one in three New Zealand adults were obese (30.9%)[17]. New Zealand's adult overweight and obesity rate increased rapidly from the late 1980s[18], but has not changed significantly since 2011-12.

The prevalence of obesity among adults differs by ethnicity. In 2018/19 in New Zealand 66.5% of Pacific and 48.2% of Māori adults were obese, compared to 13.8% of Asian and 29.1% of European/Other adults. Likewise, in Australia, Indigenous adults were more likely to be overweight or obese. This was especially apparent in obesity rates (43% compared with 27% for non-Indigenous adults in 2011-13)[19]. Australians living in inner regional and outer regional areas and remote parts of Australia were also more likely to be overweight or obese than those living in major cities[20].

In both Australia and New Zealand adults living in the most socioeconomically deprived areas are more likely to be overweight or obese compared to adults living in the least deprived areas.

Excess weight is also a problem for children. In 2018/19, 31% of New Zealand children were classified as overweight or obese[12]. In 2017/18, 24.9% of Australian children aged 5-17 years old were classified as overweight or obese[21].

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[15] Australian Institute of Health and Welfare (AIHW) (2020), *Overweight and Obesity.* Available at: https://www.aihw.gov.au/reports-data/behaviours-risk-factors/overweight-obesity/overview

[16] New Zealand Ministry of Health (2019), *New Zealand Health Survey Annual Data Explorer.* Available at: https://minhealthnz.shinyapps.io/nz-health-survey-2018-19-annual-data-explorer/_w_39c3fd25/#!/explore-indicators

[17] Ministry of Health (2019), *Obesity statistics*. Available at: https://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/obesity-statistics

[18] OECD (2020. Overweight or obese population. Doi: ft10.1787/86583552-en

[19] Australian Institute of Health and Welfare (AIHW) (2016) *Australia's health 2016*. Australia's health series no. 15. Cat. no. AUS 199. Available at: https://www.aihw.gov.au/getmedia/384eafec-fa90-412d-8c98-b279fddc7911/ah16-4-4-overweight-obesity.pdf.aspx

[20] Australian Bureau of Statistics (ABS) (2018) 4364.0.55.001 - National Health Survey: First Results, 2017-18. Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.001~2017-18~Main%20Features~More%20than%20two%20thirds%20of%20Australians%20now%20overweight%20or%20obese%20(Media%20Release)~215

[21] Australian Bureau of Statistics (ABS) (2018) *4364.0.55.001 - National Health Survey: First Results, 2017-18.* Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.001~2017-18~Main%20Features~Children's%20risk%20factors~120

In 2017[22], high body mass was the second leading risk factor for disease burden in Australia after smoking. High body mass index was the third leading risk factor for disease burden in New Zealand, after smoking and dietary risks. High body mass index accounted for 8.7% and 8.2% of total burden of disease in Australia and New Zealand respectively, and was attributed to close to 20,000 deaths in Australia, and 3,600 deaths in New Zealand.

Poor diet is also a public health priority in Australia and New Zealand, and is associated with increased risk of chronic conditions including cardiovascular disease, diabetes and some cancers. Dietary risks[23] were the third leading risk factor for total burden of disease in Australia in 2017, accounting for 7.2% of disease burden and over 25,000 deaths. In New Zealand, dietary risks accounted 8.6% of the total burden of disease and over 5,800 deaths.

Dietary risks were predominantly attributed to burden of disease associated with cardiovascular disease; in Australia, 41.4% of the disease burden from cardiovascular disease was attributed to dietary risks and, 45% for New Zealand. Dietary risks were also attributed to diabetes, and kidney disease (24.7% risk factor attribution for Australia and 27.2% for New Zealand) and cancers (6.1% risk factor attribution for Australia 7.5% for New Zealand).

Approaches for improving population dietary patterns and nutrient intakes

The above information highlights the importance of addressing overweight and obesity, and poor dietary patterns to improve population health outcomes in Australia and New Zealand and reduce premature morbidity and mortality.

The importance of improving dietary intakes and reducing the burden of diet-related non-communicable disease is globally recognised, including by the World Health Organization (WHO) and Food and Agriculture Organization (FAO) Second International Conference on Nutrition (ICN2) organised in 2014. The ICN2 called for action to address all forms of malnutrition, including undernutrition, overweight/obesity and diet-related non-communicable diseases. This objective was also adopted through the United Nations Sustainable Development Goals (SDGs) in 2015.

The WHO[24] recently published a compendium of nutrition interventions to support countries to develop multi-sectorial action plans to improve nutrition and reduce diet-related risk factors. As part of this document, the WHO identified the need to create healthy food environments that enable people to adopt and maintain healthy dietary practices. Encouraging reformulation (i.e. changing the composition) of foods to reduce the content of saturated fats, trans fats, free/added sugars and salt/sodium is identified by the WHO as one of the key actions for implementation. Other key activities to create healthy food environments identified by the WHO include providing education on healthy diets, restricting marketing of unhealthy foods and drinks to children, and supporting point of sale information through nutrition labelling with the addition of front-of-pack labelling to facilitate consumer understanding. These activities are occurring in Australia and New Zealand, for example

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[22]Institute of Health Metrics and Evaluation (IHME) (2020), *Global Burden of Disease 2017*. Available at: http://ihmeuw.org/52z8

[23] Highlighted dietary risks include diets low in fruits, vegetables, legumes, whole grains, nuts and seeds, fibre, seafood omega 3 fatty acids, and polyunsaturated fatty acids and diets high in processed meat, sugar sweetened beverages, trans fatty acids, and sodium.

[24] World Health Organization (WHO) (2019) *Essential Nutrition Actions: Mainstreaming nutrition through the life-course*. Available at: https://apps.who.int/iris/bitstream/handle/10665/326261/9789241515856-eng.pdf

through nutrition labelling in the Australia and New Zealand Food Standards Code and through the HSR interpretive front-of-pack labelling system.

Improving the nutrient composition of processed foods has health benefits for everyone and the evidence indicates that progressive, incremental changes to food composition is the best approach, to allow for consumer taste preferences to adapt[25].

Evidence indicates that reformulation is cost-effective compared to other approaches for improving population dietary patterns and addressing overweight and obesity. An economic analysis of approaches for addressing obesity undertaken by the McKinsey Global Institute[26] identified that reformulation is one of the most cost-effective approaches to addressing obesity, ranked only second to portion control in the cost-effectiveness of interventions assessed.

The potential benefits of food reformulation are also recognised more locally. A 2019 report[27] prepared for Queensland Health on population-level strategies to support healthy weight found that mandatory limits on nutrients of concern (e.g. saturated fat, trans fats, sodium, added sugars) in foods and targeted food categories (including packaged foods and out-of-home meals) are likely to have a favourable effect on the population's dietary intake, prove cost-effective, and reduce inequalities related to obesity.

In 2015 the Burden of Disease Epidemiology, Equity and Cost-effectiveness Programme (BODE^3) modelled and compared the impact of eight sodium reduction interventions in New Zealand. Of the most feasible interventions, they estimated the largest health gains were obtained from a mandatory 25% reduction in sodium levels in all processed food (other interventions included media campaigns, dietary counselling and labelling)[28].

Rationale for improving the composition of the food supply compared to other approaches to improving population dietary patterns

Improving population dietary patterns and reducing risk factors for diet-related non-communicable conditions requires a multi-faceted approach, engaging actors within and outside the health sector, and using a range of complementary actions[29].

While other actions to improve dietary patterns in Australia and New Zealand are underway, improving the healthfulness of the food supply through changing food composition offers particular advantages. For example, compositional changes can support sustained public health benefits without requiring consumers to change their behaviour. Behaviour change

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[25] National Heart Foundation of Australia (2012) *Effectiveness of food reformulation as a strategy to improve population health*. Available at: https://www.heartfoundation.org.au/getmedia/2bcb1637-1a86-48fc-bb6c-b243c4746272/RapidReview_FoodReformulation.pdf

[26] McKinsey Global Institute (2014) *Overcoming obesity : An initial economic analysis Discussion paper*, *McKinsey Global Institute*. Available at: https://www.mckinsey.com/~/media/mckinsey/business functions/economic studies temp/our insights/how the world could better fight obesity/mgi_overcoming_obesity_full_report.ashx

[27] Sacks, G. *et al.* (2019) *Population-level strategies to support healthy weight: A rapid review brokered by the Sax Institute for Queensland Health*. Available at: https://www.saxinstitute.org.au/wp-content/uploads/19.11_Evidence-Check_Population-level-strategies-to-support-healthy-weight.pdf.

[28] Nghiem, N. *et al* (2015) 'Health and economic impacts of eight different dietary salt reduction interventions'. *PLoS ONE* 10(4):e0123915 doi: 10.1371/journal.pone.0123915.

[29] World Health Organization (WHO) 2019, *Essential Nutrition Actions: Mainstreaming nutrition through the life-course*. Available at: https://apps.who.int/iris/bitstream/handle/10665/326261/9789241515856-eng.pdf

interventions may not be equally effective across all population groups, particularly lower educated or disadvantaged groups[30], and there is limited literature on the effectiveness of interventions that promote long-term maintenance of dietary behaviour change[31]. A Cochrane systematic review on reducing dietary salt intake for the prevention of cardiovascular disease made similar conclusions, reporting that dietary advice to individuals about limiting salt intake was only moderately effective and that population level strategies which do not require individual behaviour change offer greater potential[32].

Improving food composition can also potentially offer an equitable approach where the benefits of a healthier food supply can be accessed by a large number of consumers[33]. There is currently variability in the nutritional composition of similar food items[34,35,36] and consumers are required to read and interpret food/nutrition label information to identify healthier products (if it is a packaged food that displays a label). Reading and interpreting food labels involves a level of skill, motivation and knowledge[37,38] which is not available to everyone. Not all consumers use food/nutrition label information (or use it correctly)[39,40] when selecting foods to purchase or consume, and older consumers, or those with lower levels of education and income, have the greatest difficulty interpreting nutrition labels[41]. Improving the composition of the food supply has the potential to overcome this barrier (in

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[30] Baum, F. and Fisher, M. (2014) 'Why behavioural health promotion endures despite its failure to reduce health inequities', *Sociology of Health and Illness*, 36(2), pp. 213–225. doi: 10.1111/1467-9566.12112.

[31] Browne, S. *et al*. (2018). 'Effectiveness of interventions aimed at improving dietary behaviours among people at higher risk of or with chronic non-communicable diseases: an overview of systematic reviews, '*European Journal of Clinic Nutrition,* 73, pp. 9-23.

[32] Adler, A.*et al.* (2014) 'Reduced dietary salt for the prevention of cardiovascular disease'. *The Cochrane database of systematic reviews*. Available at: https://doi.org/10.1002/14651858.CD009217.pub3

[33] World Health Organization (WHO) (2009). *Interventions on diet and physical activity: what works? Summary report.* Geneva: WHO, 2009.

[34] The George Institute for Global Health (2019) *Salt levels in meat alternatives in Australia (2010-2019).* Available at: https://www.georgeinstitute.org/sites/default/files/meat_alternatives_key_findings_report.pdf

[35] George Institute for Global Health (2017) *Key findings report: Changes in sodium levels of bread products in Australia (2010-2017)*. Available at: https://www.georgeinstitute.org.au/sites/default/files/salt-in-bread-key-findings-report-2017.pdf

[36] Grafenauer S, & Curtain F. (2018), 'An Audit of Australian Bread with a Focus on Loaf Breads and Whole Grain'. *Nutrients*. 10(8):1106.

[37] Soederberg Miller, L. M. and Cassady, D. L. (2013) 'Making Healthy Food Choices Using Nutrition Facts Panels: The', *Appetite*, 59(1), pp. 129–139. doi: 10.1016/j.appet.2012.04.009.

[38] Soederberg Miller, L. M. and Cassady, D. L. (2015) 'Food Label Knowledge. A systematic review', *Appetite*, 92(1), pp. 207–216. doi: 10.1016/j.appet.2015.05.029.

[39] Food Standards Australia New Zealand (FSANZ) (2017) 'Consumer Label Survey 2015 Food Labelling Use and Understanding in Australia and New Zealand'. Available at: https://www.foodstandards.gov.au/publications/Documents/Consumer%20label%20survey%202015/consumerlabelsurvey2015.pdf

[40] National Heart Foundation of Australia (2018) *Report on the monitoring of the implementation of the Health Star Rating system: Key findings for Area of Enquiry 2 – Consumer awareness and ability to use the Health Star Rating system correctly.* Available at: http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/474CBBEC911CFF01CA25803A007E7B2B/$File/HSR-Area-of-Enquiry-2-Wave-5-July-2018.pdf

[41] Cowburn, G. and Stockley, L. (2005) 'Consumer understanding and use of nutrition labelling: a systematic review', *Public Health Nutrition*, 8(1), pp. 21–28. doi: 10.1079/phn2004666.

addition to the implementation of the HSR front-of pack system which is designed to support consumers to easily identify healthier food options within product categories. However, the HSR system is currently voluntary and not adopted consistently across product categories). People with lower education and income could also receive relatively greater benefit from these actions as they are more likely to be overweight or obese[42,43] and/or be affected by chronic disease[44].

However, if reformulation is not widely adopted across a food category, or reformulated products are more expensive, then the potential equity related benefits are diminished. Consumers would still be required to compare and interpret labels to identify and select a healthier option and the potential benefits of reformulation would be limited to consumers who have the resources to purchase the healthier option.

The potential equity related benefits of improving the composition of the food supply may also be diminished if food categories in which compositional limits or reformulation targets are implemented are not consumed widely across the population, including amongst vulnerable groups.

These considerations highlight the importance of consistent and widely adopted approaches to improving the composition of the food supply, including in food categories consumed by vulnerable sectors of the population.

[42] New Zealand Ministry of Health 2019. *Annual Update of Key Results 2018/19: New Zealand Health Survey* Available at: http://www.health.govt.nz/publication/annual-update-key-results-2015-16-new-zealand-health-survey.

[43] Australian Bureau of Statistics (ABS), 2019. *4364.0.55.001 National Health Survey: First Results, 2017-18*. Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.001~2017-18~Main%20Features~Overweight%20and%20obesity~90

[44] Australian Institute of Health and Welfare (2019) *Indicators of socioeconomic inequalities in cardiovascular disease, diabetes and chronic kidney disease*. Cat. no. CDK 12. Canberra: AIHW

Part 2: Current approaches for improving the composition of the food supply

This section discusses current approaches to improving the composition of the food supply in Australia, New Zealand and internationally through two approaches: mandatory compositional limits, and voluntary reformulation activities.

Compositional limits

Compositional limits are mandatory prescribed limits on the amount of a nutrient in a particular food or beverage.

Compared to voluntary reformulation targets, a key benefit of mandatory compositional limits is they can establish a level playing field for industry (including for domestic and imported products). Not all food manufacturers participate in voluntary food reformulation activities, and the absence of a level playing field has been identified as a barrier to voluntary reformulation[45]. With voluntary reformulation activities some products on the market will continue to not meet voluntary reformulation targets.

Mandatory compositional limits can better support equity as they can ensure consistent adoption of nutrient targets and the benefits of improved food composition can be accessed by all consumers, not just those who have the skills and knowledge to read food labels and funds available to purchase healthier reformulated products.

Mandatory compositional limits introduce a regulatory burden on the food industry and may be a barrier to trade. However, the trade impacts of mandatory compositional limits are reduced if compositional limits are focussed on products which are largely produced domestically.

Compositional limits in Australia and New Zealand

The Australia New Zealand Food Standards Code (the Code) currently includes compositional limits for certain foods. With the exception of foods for infants, these limits are largely for definitional purposes rather than public health nutrition purposes. Foods which do not meet the specified compositional criteria can still be sold with a different name or representation (provided that other relevant criteria in the Code are met).

Examples of compositional limits in the Code are outlined in the table below.

Table 1: Examples of compositional limits in the Code

Food	**Compositional criteria**
Ice-cream	Must contain no less than 10 g/kg of milk fat and 168 g/L food solids
Cream	Must contain no less than 350 g/kg of milk fat.
Sausage	Must contain no less than 500 g/kg of fat free meat flesh; and have a proportion of fat that is no more than 500 g/kg of the fat free meat flesh content.

[45] Van Gunst, A., Roodenburg, A. J. C. and Steenhuis, I. H. M. (2018) 'Reformulation as an integrated approach of four disciplines: A qualitative study with food companies', *Foods*, 7(4). doi: 10.3390/foods7040064.

Food	Compositional criteria
Formulated caffeinated beverage	Must contain no less than 145 mg/L and no more than 320 mg/L of caffeine in total, from any source; and may contain a listed substance.
Honey	Must contain no less than 60% reducing sugars and no more than 21% moisture.
Foods for infants	Standard 2.9.2-3 includes compositional requirements for sodium for various foods such as rusks (no more than 350 mg/100g), biscuits (no more than 300mg/100g), and other cereal-based foods (no more than 100mg/100g). This standard also includes compositional limits for iron content of cereal-based foods and a limit on sugars content for certain beverages.

Compositional limits internationally

Internationally, mandatory compositional limits have been applied predominantly in relation to trans fats and salt. Details on these compositional limits are provided at Appendix 1 and a summary is provided below.

This is an evolving area. While foods for infants is outside the scope of this paper, there is work to consider compositional limits for infant foods internationally. For example the WHO Regional Office for Europe released a discussion paper in 2019 outlining the first steps in developing a nutrient profile model to drive changes to product composition and labelling in commercially available complementary foods for infants and young children. This included recommendations for compositional limits for ingredients including sugars, salt and industrially produced trans fatty acids as well as for broader labelling[46].

Saturated fats

Mandatory compositional limits for saturated fats have not been identified.

Trans fats

The WHO reports that 58 countries have introduced laws to eliminate trans fat from the food supply. As a result of these measures, 3.2 billion people globally are protected from the harmful effects of trans fats[47]. Details on the policies for around half of these countries are provided at Appendix 1. Depending on the approach taken, compositional limits or bans for

[46] WHO Regional Office for Europe (2019). *Ending inappropriate promotion of commercially available complementary foods for infants and young children between 6 and 36 months in Europe: A discussion paper outlining the first steps in developing a nutrient profile model to drive changes to product composition and labelling and promotion practices in the WHO European Region.* Available at: from: http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/publications/2019/ending-inappropriate-promotion-of-commercially-available-complementary-foods-for-infants-and-young-children-between-6-and-36-months-in-europe-2019

[47] World Health Organization (WHO) (2020). *More than 3 billion people protected from harmful trans fat in their food.* Available at: https://www.who.int/news-room/detail/09-09-2020-more-than-3-billion-people-protected-from-harmful-trans-fat-in-their-food

trans fats apply to oils and fats, and also products containing oils and fats[48]. Elimination of trans fats in the food supply is one of the 'best buys' for prevention of non-communicable diseases recommended by the WHO[49]. The WHO has established the 'REPLACE' program to support member states to eliminate industrially-produced trans fats from the global food supply by 2023[50]. The program provides technical information and resources to facilitate implementation of this work. The 'REPLACE' program also monitors and reports country's efforts in eliminating industrially produced trans fats.

Evaluations of work in Denmark to ban the sale of products containing trans-fats report that trans-fat were reduced to non-significant levels in the food supply and contributed to decreased cardiovascular mortality rates[51,52,53]. Similar estimates have been reported for New York State where restrictions on use of ingredients containing trans fats in fast-food outlets were associated with a 4.5% reduction in cardiovascular disease mortality or thirteen fewer cardiovascular disease deaths per 100,000 persons per year[54].

Sodium/Salt

A note on terminology: this report uses the terms 'salt' and 'sodium'. The term 'salt' refers to sodium chloride, whereas 'sodium' refers to sodium specifically.

In this report, the term 'salt' is used when compositional limits or reformulation targets specifically focus on 'salt', otherwise the term 'sodium' is used.

Mandatory compositional limits for salt/sodium have been identified for ten countries, mostly targeted at breads. Breads are a major source of sodium in the diet[55].

[48] World Cancer Research Fund (WCRF) (n.d). *Nourishing and Moving Policy Database.* Available at https://policydatabase.wcrf.org/

[49] World Health Organization (WHO) 2017 *Tackling NCDs, Best buys.* Available at: https://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf;jsessionid=7BD836E477124A3F951AAA316956F5F1?sequence=1

[50] World Health Organization (WHO) 2020 *Replace: Trans fat free by 20203.* Available at: https://www.who.int/teams/nutrition-and-food-safety/replace-transfat

[51] Vidgen, H., Monsef, E. and Davidson, K. (2018) *Rapid Review: Food Regulatory Approaches to Address Childhood Obesity*. Available at: https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/8C77229FB54166D5CA25835B007B2516/$File/FRSC-Rapid-Review-childhood-obesity-QUT-8-March-2018.pdf

[52] Restrepo, B. J. and Rieger, M. (2016) 'Denmark's Policy on Artificial Trans Fat and Cardiovascular Disease', *American Journal of Preventive Medicine*, 50(1), pp. 69–76.

[53] Hyseni, L. *et al.* (2017) 'The effects of policy actions to improve population dietary patterns and prevent diet-related non-communicable diseases: Scoping review', *European Journal of Clinical Nutrition*. Nature Publishing Group, 71(6), pp. 694–711. doi: 10.1038/ejcn.2016.234.

[54] Restrepo, B. J. and Rieger, M. (2016) 'Trans fat and cardiovascular disease mortality: Evidence from bans in restaurants in New York', *Journal of Health Economics*. Elsevier B.V., 45, pp. 176–196. doi: 10.1016/j.jhealeco.2015.09.005.

[55] World Health Organization (WHO) (2020), *Salt reduction.* Available at: https://www.who.int/news-room/fact-sheets/detail/salt-reduction

Evaluations of these limits tend to focus on industry compliance[56,57], rather than public health impacts. However, modelling studies suggest mandatory compositional limits for salt may reduce cardiovascular mortality and be more effective than health promotion messages, front-of-pack labelling or voluntary reformulation[58].

Sugars

Compositional limits for a food's sugar content have not been identified, however, Saudi Arabia recently proposed to introduce limits on added sugars in soft drinks and foods for special dietary uses. This proposal was considered by the World Trade Organization (WTO) Committee on Technical Barriers to Trade and, after regarding comments from WTO members, was subsequently withdrawn by Saudi Arabia[59].

Positive nutrients

Compositional limits for positive nutrients (such as fibre, wholegrains, fruit and vegetables) in foods have not been identified.

Voluntary reformulation

Voluntary reformulation involves the food and drink industry voluntarily reformulating products to improve their nutrient profile. This may occur with or without Government partnership and engagement.

Voluntary reformulation relies on the goodwill and co-operation of the food industry and there is limited leverage available to Governments to encourage the food industry to reformulate their foods. There is no incentive for industry to participate in voluntary reformulation and there may be limited accountability if voluntary targets are not achieved. However, certain program design elements can assist in improving the effectiveness of voluntary reformulation programs. These include a high degree of Government oversight and corporate accountability, concrete timelines and targets for reformulation, regular monitoring of progress, transparency, incentives for compliance, and consequences for non-compliance[60].

As voluntary reformulation is not legislated, the regulatory and administrative burden of voluntary reformulation activities is less than establishing mandatory compositional limits and there are no impacts on trade. As voluntary reformulation does not involve regulatory change (which can be a long and complex process), it can also be more flexible and may be better suited to supporting gradual and incremental changes in food composition compared to mandatory compositional limits. Gradual and incremental reformulation has been shown to

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[56] Food and Agriculture Organization of the United Nations (FAO) (2017) *Trade Policy Technical Notes: Ex-post evidence on the effectiveness of policies targeted at promoting healthier diets.* Available at: http://www.fao.org/3/a-i8191e.pdf

[57] Allemandi, L. *et al.* (2019) 'Monitoring sodium content in processed foods in Argentina 2017–2018: Compliance with national legislation and regional targets', *Nutrients*, 11(1474). doi: doi:10.3390/nu11071474.

[58] Collins, M. *et al.* (2014) 'An economic evaluation of salt reduction policies to reduce coronary heart disease in England: A policy modeling study', *Value in Health*. Elsevier, 17(5), pp. 517–524. doi: 10.1016/j.jval.2014.03.1722.

[59] World Trade Organization (WTO) Committee on Technical Barriers to Trade (2019) *Notification- Kingdom of Saudi Arabia- Added sugar upper limit in some food products.* Available at: https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/G/TBTN19/SAU1108A3C1.pdf&Open=True

[60] Kaldor, J. C. (2018) 'Food Reformulation for NCD-Prevention: Regulatory Options and Potential Barriers', *QUT Law Review*, 18(1), p. 76. doi: 10.5204/qutlr.v18i1.729.

be important to support consumers to adjust to changes in food composition[61]. Voluntary reformulation may also be more likely to achieve greater possibilities for change in individual products, rather than products having to meet a specific mandated level that is a "one size fits all" approach for the whole category, so therefore the lowest common denominator.

Voluntary reformulation activities align with the Forum's approach for supporting healthier food choices, such as through the voluntary HSR system. Voluntary reformulation activities in Australia, New Zealand, and internationally are explored below.

Voluntary reformulation initiatives in Australia

Australian Healthy Food Partnership

The Healthy Food Partnership is an Australian Government initiative which provides a mechanism for government, the public health sector and the food industry to cooperatively tackle obesity, encourage healthy eating and empower food manufacturers to make positive changes.

The Reformulation Working Group under the Healthy Food Partnership has considered draft voluntary targets for sodium, sugar and saturated fat, taking into account stakeholder feedback from a public consultation process held in 2018.

The process for identifying food categories for establishing targets involved identifying processed foods and beverages that contribute to ≥1% total population intake, considering whether the mean, median and maximum levels the nutrient in the selected food category warrants reformulation, and determining whether evidence suggests reformulation is feasible for that nutrient and food category.

Wave 1 reformulation targets were endorsed in February 2020 by the Partnership Executive Committee for breads (sodium), cheese (sodium), crumbed and battered proteins (sodium) gravies and sauces (sodium), pizza (sodium and saturated fat), processed meats (sodium), frankfurters and saveloys (sodium and saturated fat), sausages (sodium and saturated fat), savoury biscuits (sodium), savoury pastries (sodium and saturated fat), savoury snacks (sodium), soups (sodium) and sweet bakery (sodium).

A brief comparison of the Wave 1 sodium reformulation targets against international voluntary targets and mandatory limits is provided at Appendix 2. The Australian Healthy Food Partnership targets are mostly in line with, or below, targets/limits in countries such as the United Kingdom, Brazil, Argentina, Canada and outlined by the World Health Organization's Pan America Health Organisation (PAHO). In some categories the targets set internationally (mostly in the United Kingdom) are lower than the Australian targets. For example, only the United Kingdom has a lower target for sodium in breads at 350mg/100g compared to the Australian target of 380mg/100g, with the other international examples having higher sodium levels, up to 600mg/100g. All international sodium limits/targets for Frankfurter and saveloys were lower than the Healthy Food Partnership targets, however, Healthy Food Partnership targets for sausages were lower than limits/targets set internationally. A comparison between the Australian targets for saturated fat reformulation and international examples was not possible as saturated fat reformulation is limited internationally.

[61] National Heart Foundation of Australia (2012) *Effectiveness of food reformulation as a strategy to improve population health*. Available at: https://www.heartfoundation.org.au/getmedia/2bcb1637-1a86-48fc-bb6c-b243c4746272/RapidReview_FoodReformulation.pdf

The implementation of Wave 1 targets is in its early stages and therefore the levels of sodium and saturated fat in targeted food categories has not yet been reduced. Each target has an implementation period of four years, with reports on progress due at year two and after year four. Targets will apply to 80% of the product category and businesses are required to show effort towards reformulating the remaining 20% of products. The exact approach for applying the targets to 80% of products is being explored and will be confirmed later in 2020. The consequences if targets are not achieved within the four year period, or not on track for achievement in the two year period, are yet to be considered. It is also yet to be determined whether reformulation targets would be lowered if voluntary targets are met, which is an important element of effective reformulation programs, and allows consumers' taste preferences to gradually adjust to accept foods with less sugar or sodium.

A second wave of targets is currently under consideration for foods such as breakfast cereals (sugar and sodium), ready meals (sodium), beverages (sugar), muesli and snack bars (sugar) and sweetened yoghurts (sugar) and are anticipated to be considered by the Executive Committee later in 2020.

The Healthy Food Partnership follows the Food and Health Dialogue, a voluntary reformulation program led by the Australian Government. Between 2009 and 2015 the Food and Health Dialogue achieved significant reductions in the average sodium content of a number of food categories, including savoury pies and pastries, soups, breads, breakfast cereals and processed meats[62]. It is not known whether the reductions in sodium content of foods resulted in reduced sodium consumption on a national level. The timing of national nutrition surveys in Australia (1995 and 2011-12) does not enable this analysis.

Australian industry initiatives

The food industry in Australia also undertakes its own initiatives to improve the composition of the foods it manufactures. For example, a survey[63] of nineteen of Australia's largest food and beverage companies identified that sixteen companies had reported some action or made some commitments to reformulate their products to reduce levels of nutrients of concern (as at 31 December 2017). Across the food companies assessed, the most common reformulation targets were for a reduction in sodium and saturated fat (8 out of 16 companies), trans fat (7 out of 16 companies), sugar and portion size of single-serve products (6 out of 19 companies).

The survey reported that Nestlé, Coca-Cola, Lion Dairy & Drinks, Mars and Unilever all made reformulation commitments to reduce nutrients of concern across their product portfolios. These companies had set specific, time-bound targets to reduce sodium, saturated fat and added sugars content (where relevant) in their products, and had actions underway to reduce portion size/energy content of single-serve products. Several of these companies also participate in the Australian Healthy Food Partnership.

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[62] National Heart Foundation of Australia (2016) *Report on the Evaluation of the nine Food Categories for which reformulation targets were set under the Food and Health Dialogue*. Available at: https://www1.health.gov.au/internet/main/publishing.nsf/Content/fhd

[63] Sacks, G. and Robinson, E for INFORMAS. (2018) *Inside our food and beverage manufacturers: assessment of company policies and commitments related to obesity prevention and nutrition, Australia 2018*. Available at: https://docs.wixstatic.com/ugd/2e3337_63e52a246da94400a9ad25820e77927b.pdf.

The same survey was undertaken amongst Australian quick-service restaurants[64] and supermarkets[65] where lower levels of commitment to reformulation were identified. Amongst quick-service restaurants, five out of eleven restaurants were identified as having taken some action to reformulate menu items to reduce levels of nutrients of concern (as at 31 December 2017). The most common areas for reformulation were sodium (five out of eleven companies), fat and sugar (five out of eleven companies), followed by trans fat (three out of eleven companies).

Two out of four major Australian supermarkets were identified as having made public commitments to reduce levels of nutrients of concern within own-brand products. However, none of the supermarkets surveyed had set time-bound targets for future product development and reformulation of existing products. There was also limited public information disclosure by supermarkets about progress in achieving reformulation targets or compliance with commitments.

Industry sector initiatives are also in place. For example, the Australian Beverage Council announced a pledge in 2018 to reduce the average sugar content of non-alcoholic beverages by 20% from 2015 to 2025[66]. The pledge aims to reduce the availability and promotion of sugary drinks to encourage reduced consumption of added sugars in the population. Pledge signatories can achieve this through a range of measures including reformulation, decreasing the amount of sugary drinks available, and increasing the availability of no or low sugar beverages.

In November 2019 the Australian Beverage Council announced that its four pledge signatories had achieved a 7% reduction in sugar content across their product range between 2015 and 2018[67]. The Australian Beverage Council has not reported how this reduction was achieved, i.e. whether signatories reformulated products to reduce sugar content of beverages, or whether there was an increased availability of low or no sugar options.

Voluntary reformulation initiatives in New Zealand

New Zealand Food Industry Taskforce

In 2018 leading New Zealand food and beverage industry members formed *the Food Industry Taskforce on Addressing Factors Contributing to Obesity* at the request of the Ministers of Health and Food Safety. A report prepared by the Taskforce identified practical actions that industry members could take to address obesity[68]. A key area for action identified in the

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[64] Sacks, G. and Robinson, E. (2018) *Inside our quick service restaurants: assessment of company policies and commitments related to obesity prevention and nutrition, Australia 2018*. Available at: https://docs.wixstatic.com/ugd/2e3337_0f6ae07395914c0f9671bf9d310f80ca.pdf.

[65] Sacks, G., Robinson, E. and Cameron, A. (2018) *Inside our supermarkets: assessment of company policies and commitments related to obesity prevention and nutrition*. Available at: https://aa4ed193-10bb-4e34-8c1c-65e97daef1a8.filesusr.com/ugd/2e3337_f3dc17c247b04421b3249283049 33e5d.pdf.

[66] Australian Beverages Council (2018) *Sugar reduction pledge.* Available at: https://www.australianbeverages.org/initiatives-advocacy-information/sugar-reduction-pledge/

[67] KPMG (2019) *Sugar Reduction Pledge, 2018 Aggregation Report.* Available at: https://www.australianbeverages.org/wp-content/uploads/2019/11/Sugar-reduction-pledge-Report-ABCL22102019.pdf

[68] Food Industry Taskforce on Addressing Factors Contributing to Obesity (2018) *Final report to ministers of health and food safety.* Available at: https://www.health.govt.nz/system/files/documents/pages/food-industry-taskforce-final-report.pdf

report was reformulation. The report also provides information about a survey undertaken by the Taskforce with the food and beverage industry about reformulation activities.

The Taskforce recommended that, where possible and appropriate for New Zealand, industry adopt voluntary nutrient reformulation targets being developed through the Australian Healthy Food Partnership. The Government response to this report encouraged industry to prioritise reformulation of food products to reduce the content of saturated fats, trans-fats, free sugars and salt/sodium. The Taskforce has since been disbanded but members have reported voluntarily working to deliver on the Taskforce's recommendations.

Prior to the formation of the Taskforce , many major New Zealand industry members including Sanitarium, Coca-Cola, Fonterra, Frucor Suntory, Nestlé, McDonalds, Foodstuffs and Countdown were signatories to the Healthy Kids Industry Pledge, which aimed to identify and contribute solutions that will reduce obesity among children in New Zealand. The Healthy Kids Industry Pledge was overseen by the New Zealand Ministry of Health.

Healthy Kids Industry Pledge signatories committed to considering reformulating their products, improving labelling, and supporting responsible marketing and advertising. They also agreed to publicly report on progress. Under this pledge, some members reformulated products to reduce sugar. The Healthy Kids Industry Pledge was discontinued following the formation of the Food Industry Taskforce.

New Zealand Heart Foundation reformulation program

The New Zealand Heart Foundation has been working with food manufacturers since 2007 to improve the composition of the food supply. This reformulation program (funded by the Ministry of Health) targets high volume and lower cost products, and the initial focus of this work was sodium reduction. As at August 2020 there are reformulation targets for 38 food categories/sub-categories. This includes thirty-five sodium reduction targets, ten total sugar reduction targets and three saturated fat reduction targets[69]. These targets and implementation timeframes are outlined in Appendix 3.

The targets are set in consultation with food industry with the goal being 80% of products by market share meet the targets within the timeframe. Targets for prioritised food categories/sub-categories are set on a rolling basis and reviewed every three to five years (informed by nutrient and sales datasets). Some targets have been lowered twice since they were originally set, for example, the sodium target for breads. In addition to absolute targets there is often an option of a percentage reduction for products that are significantly higher than the target.

This work operates 'behind the scenes' and there is limited public reporting on this program. The Heart Foundation provided some data on progress towards these targets, which is summarised in Appendix 3.

Historically the New Zealand Heart Foundation coordinated two groups with industry called the Chip and Pie Groups. These groups encouraged specific practices to reduce the saturated fat, trans fat and sodium content of their products via various cooking and preparation methods as well as improving ingoing ingredients. Funding for these two groups has ceased and they are no longer active[70]. However, the website for the Chip Group is still accessible

[69] Personal communication, Heart Foundation, August 2020

[70] Personal communication, Heart Foundation, August 2020

which includes the industry standards for a range of factors including serving size, oil type, basket drainage and salt addition.

New Zealand food industry initiatives

Many New Zealand food companies also operate their own internal food reformulation programs. For example, Coca-Cola Oceania has committed to voluntarily reduce the sugar across its drinks portfolio by 20% by 2025 (sales-weighted). A significant component of this includes new products with no or reduced sugar e.g. Coca-Cola Zero, Coca-Cola Diet, Coca-Cola no sugar, Coca-Cola stevia no sugar. The company is also reducing the sugar in some existing products. Another key sugary drink producer, Frucor Suntory, is reformulating products and introducing more low or no sugar options.

In addition, the New Zealand Food and Grocery Council *Healthier New Zealanders Initiative* aims to promote and support the work by members to deliver health and wellness across the New Zealand population. Many of the programs under this initiative are part of broader work in non-communicable disease prevention[71]and include the establishment of company nutrition policies and product formulation. For example, companies such as Nestlé and Heinz Watties have developed company nutrition policies regarding nutrients of concern. Heinz Watties policy includes offering low-sugar products[72]. Nestlé is aiming to improve the nutritional profile of its products and monitor the composition of their product range.[73]

A proposed sugar reduction pledge of 20% by 2025 by the New Zealand Beverage Council, which was foreshadowed in the Taskforce's report, is currently on hold.

In 2017 Auckland University researchers assessed public policies and commitments related to improving food environments of twenty-five prominent New Zealand food companies across the manufacturing, quick-service and supermarket sectors[74]. One of the six domains assessed was product formulation. Five companies did not have any commitment related to product formulation (two food manufacturers and three quick serve restaurants). Out of the seventeen manufacturers, thirteen had a target to reduce added sugar content, and nine aimed to reduce portion sizes. Nestlé was deemed the best performing company as they had a SMART target for each nutrient of concern. International approaches to improving the composition of the food supply

Voluntary reformulation initiatives internationally

Actions to encourage voluntary industry reformulation are also undertaken internationally. These actions predominantly focus on sodium/salt reformulation[75]. Selected examples of voluntary reformulation actions are outlined below.

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[71] New Zealand Food and Grocery Council (n.d.) *Company Nutrition Polices & Product Formulation. Available at: New Zealand Food & Grocery Council.* Available at: https://www.fgc.org.nz/company-nutrition-polices-product-formulation/

[72] Heinz Watties, 2020. *Nutrition, Health and Wellness Initiatives*. Available: http://www.heinzwatties.co.nz/Health-Wellness/Nutrition-Health-and-Wellness-Initiatives

[73] Nestle, n.d. *Nutrition*. Available at: https://www.nestle.co.nz/csv/nutrition

[74] University of Auckland (2018). Committing to Health: Food company policies for Healthier Food Environments NZ 2018. Available at: https://figshare.com/s/f29767b39641fffecd5f

[75] World Cancer Research Fund (WCRF), (n.d). *Nourishing and Moving Policy Database.* Available at https://policydatabase.wcrf.org/

Saturated fat

While not a frequent target for voluntary reformulation, saturated fat has been included in voluntary reformulation activities in some countries.

For example, since 2007, as part of the second phase of France's National Nutrition and Health Program, members of the food industry (e.g. producers, food industry companies, distributors and caterers) can voluntarily pledge to improve the nutritional profile of their foods. Industry commitments must meet certain criteria and cover the composition of the food product (e.g. reduced amounts of fat, saturated fat, sugar, salt; increased amounts of fibre) and/or a consumption intervention (e.g. action on portion sizes or marketing). A committee of public health experts review the proposed industry commitments to ensure they are significant. Achievements are monitored by the Government established French Food Quality Observatory.

In November 2010, the French Food Quality Observatory published estimates of the potential impacts of France's reformulation based on the first 15 signed reformulation commitments. It is estimated the impact could be 11,700 to 13,000 less tonnes of sugars, 3,500 to 4,200 less tons of fat tonnes; 2,150 less tonnes of saturated fat; 223 to 240 less tonnes of sodium; and twelve more tonnes of fibre in France's food supply[76].

The Netherlands also includes saturated fat reformulation in its voluntary food reformulation program, together with salt, and total energy content of food which commenced in 2014.

Saturated fat reformulation is also included in the United Kingdom's 'Public Health Responsibility Deal' where food industry can make voluntary commitments to reformulate products to reduce salt, saturated fats, trans fats and energy in foods. However, a 2015[77] evaluation of the Responsibility Deal identified that commitments to saturated fat reformulation were only made by seven organisations, compared to thirty-seven organisations that committed to salt reformulation. Reporting of progress against reformulation targets was poor, and the authors were unable to determine whether the Responsibility Deal achieved results in this area. This highlighted the need for transparency and accountability in voluntary reformulation actions and the authors of this evaluation recommended penalties for companies that do not report on progress against targets.

Trans fat

Voluntary reformulation to reduce trans fats in the food supply is in place in some countries. A systematic review[78] of policies to reduce dietary trans fat reported that multicomponent interventions including legislation were most effective. This review noted that some countries have introduced legislative actions to reduce or eliminate trans fats in the food supply, while other countries had taken voluntary approaches, which were less effective.

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[76] Chauliac, M. and Hercberg, S. (2012) 'Changing the Food Environment: The French Experience', *Advances in Nutrition*, 3, p. 605S–610S. doi: 10.3945/an.112.001941.

[77] Knai, C. *et al.* (2015) 'Has a public-private partnership resulted in action on healthier diets in England? An analysis of the Public Health Responsibility Deal food pledges', *Food Policy*, 54, pp. 1–10. doi: 10.1016/j.foodpol.2015.04.002.

[78] Hyseni, L. *et al.* (2017) 'Systematic review of dietary trans-fat reduction interventions', *Bulletin of the World Health Organization*, 95(12), pp. 821–830. doi: 10.2471/BLT.16.189795.

Sodium/Salt

An example of a country with a long-running voluntary salt reformulation program is the United Kingdom. Between 2003 and 2010 the United Kingdom Food Standards Agency undertook a multi-faceted strategy to reduce salt consumption in the population, including through public awareness campaigns, food labelling and agreements with industry to reformulate foods to reduce salt content. Voluntary reformulation targets for specific food categories were set independently by the Food Standards Agency and released in 2006, with Ministerial-level threats that targets would be mandated if sufficient compliance was not achieved by 2010 (this was subsequently revised to 2012). From 2011 this activity [79] was replaced with the 'Public Health Responsibility Deal' where food manufacturers and caterers could become signatories to voluntary pledges for actions such as using less salt, providing salt information on menus and reformulating to reduce salt content[80].

Combined with a public awareness campaign and voluntary labelling the United Kingdom's voluntary reformulation programs have resulted in significant improvements in the food supply and population sodium consumption[81]. Public Health England recently reported[82] the voluntary salt reformulation program contributed to reductions in population salt intake of 11% between 2005-06 and 2014. Key to success has been the gradual progressive reductions which reduced taste preferences. According to some researchers[83] population sodium intakes could have been reduced further and a 26,000 additional cases of cardiovascular disease and 3,800 additional cases of gastric cancer could have been avoided had the voluntary reformulation program not changed to the 'Public Health Responsibility Deal' in 2011. The researchers attributed the reduced potential health benefits to a lack of robust and independent target setting and monitoring and enforcement under the 'Public Health Responsibility Deal'. A separate evaluation[84] of the industry pledges under the Responsibility Deal suggested most industry pledges were actions already underway, and would have been implemented regardless of the pledge. It was recommended that the food industry be pushed beyond 'business as usual' reformulation to help improve population health outcomes.

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[80] Laverty, A. A. *et al.* (2019) 'Quantifying the impact of the Public Health Responsibility Deal on salt intake, cardiovascular disease and gastric cancer burdens: Interrupted time series and microsimulation study', *Journal of Epidemiology and Community Health*, 73(9), pp. 881–887. doi: 10.1136/jech-2018-211749.

[81] National Heart Foundation of Australia (2012) *Rapid review of the evidence. Effectiveness of food reformulation as a strategy to improve population health.* Available at: https://www.heartfoundation.org.au/getmedia/2bcb1637-1a86-48fc-bb6c-b243c4746272/RapidReview_FoodReformulation.pdf

[82] Public Health England (2017) *Salt targets 2017: Progress report, a report on the food industry's progress towards meeting the 2017 salt targets.* Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765571/Salt_targets_2017_progress_report.pdf

[83] Laverty, A. A. *et al.* (2019) 'Quantifying the impact of the Public Health Responsibility Deal on salt intake, cardiovascular disease and gastric cancer burdens: Interrupted time series and microsimulation study', *Journal of Epidemiology and Community Health*, 73(9), pp. 881–887. doi: 10.1136/jech-2018-211749.

[84] Knai, C. *et al.* (2015) 'Has a public-private partnership resulted in action on healthier diets in England? An analysis of the Public Health Responsibility Deal food pledges', *Food Policy*. 54, pp. 1–10. doi: 10.1016/j.foodpol.2015.04.002.

Other countries with voluntary sodium reformulation programs include the United States, Italy, Ireland, Hungary, Canada and Croatia[85].

Sugar

The United Kingdom is currently seeking to achieve a 20% sugar reduction by 2020 (against a 2015 baseline) across the top nine categories of food that contribute most to children's sugar intakes. The United Kingdom[86] is also working with the food industry to voluntarily reduce calorie content by 20% by 2024 (2017 baseline) in fifteen savoury food categories that make a major contribution to children's diets. For both targets, the industry can either reformulate, change in portion size, or encourage consumers to purchase lower sugar/calorie products.

A 2019 modelling study[87] predicted that if the United Kingdom sugar reduction targets were met (and the population did not change its diet), the resulting reduction in obesity could be 5.5% for 4-10 year olds, 2.2% for 11-18 year olds and 5.5% for 19-80 year olds. This analysis focussed on the potential impacts of the sugar reduction activities (reformulation, changes to portion size or shifting sales) and potential impacts of the Soft Drink Industry Levy were not considered. Impacts of the reformulation program on chronic disease prevalence over a ten year period amongst adults was estimated to be 155,000 fewer cases of diabetes, 3,500 fewer cases of cardiovascular disease and 5,800 fewer cases of colorectal cancer with a saving of £285.8 million to the health care system.

Success of the United Kingdom's voluntary sugar reduction program has varied depending on the food category and sector. The most recent evaluation reported an overall 2.9% reduction in average sugar content of products sold between 2015 and 2018 (weighted sales average in grams, per 100g grams) among retail and manufacturer branded products (referred to as the 'in-home sector'). When results are disaggregated according to product categories within the in-home sector, the extent of reformulation varied. For example, yoghurts and fromage fraise recorded a 10.3% reduction and breakfast cereals recorded a 8.5% sugar reduction between 2015 and 2018. Much smaller changes were reported for categories such as biscuits (0.6%), chocolate confectionary (0.3%), and ice cream, lollies and sorbets (0.3%). Despite the average sugar content of products reducing, total tonnes of sugar sold in foods included in the reformulation program from the in-home sector actually increased by 2.6% between 2015 and 2018 (excluding cakes and morning goods)[88].

Equivalent statistics for the United Kingdom's out-of-home sector were not available. However, the simple average total sugar per 100 grams in out-of-home sector products reduced by 4.9% between 2017 and 2018. Major sugar reductions (simple average) were recorded between 2017 and 2018 for yoghurts and fromage frais (23.5% average sugar reduction) and breakfast cereals (17.1% reduction), puddings (15.0%) and ice-cream, lollies and sorbets reduced by 12.9%. Chocolate confectionary sugar content increased by 3.6%.

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[85] World Cancer Research Fund (WCRF), (n.d). *Nourishing and Moving Policy Database.* Available at https://policydatabase.wcrf.org/

[86] Public Health England (2018) *Calorie reduction: The scope and ambition for action.* Available at: https://www.gov.uk/government/publications/calorie-reduction-the-scope-and-ambition-for-action

[87] Amies-Cull, B., Briggs, A. D. M. and Scarborough, P. (2019) 'Estimating the potential impact of the UK government's sugar reduction programme on child and adult health: Modelling study', *BMJ (Online)*, 365, pp. 1–8. doi: 10.1136/bmj.l1417.

[88] Public Health England (2019) *Sugar education: Report on progress between 2015 and 2018.* Available at: https://www.gov.uk/government/publications/sugar-reduction-progress-between-2015-and-2018

Positive nutrients

Government led voluntary reformulation efforts to increase positive nutrients in the food supply is not widely undertaken. However, individual food companies may reformulate to increase positive ingredients or nutrients such as fibre, wholegrains, fruit and vegetables.

One of the pledges under the United Kingdom Public Health Responsibility Deal which food companies could commit to was reformulating composite products (e.g. ready meals) to increase the fruit and vegetable content. However, an evaluation[89] of the Responsibility Deal identified only 5% of companies involved in the Responsibility Deal made this pledge. When evaluators asked companies for progress against pledges, data reporting was inconsistent or not available, and it is therefore not possible to determine the success of this measure. This highlights the importance of accurate and transparent reporting against voluntary targets.

Other activities that have contributed to food reformulation

While compositional limits and voluntary reformulation activities directly seek to improve food composition, there are other activities that have led to improved food composition. Some examples are discussed below.

Food labelling

In Australia and New Zealand, the Health Star Rating (HSR) front-of-pack system has led to some product reformulation. In New Zealand, there is evidence of positive product reformulation of HSR labelled products relative to non-HSR products with respect to sodium[90]. However, when weighted by food purchase data, this does not currently translate to overall improvements in the healthiness of food purchased by New Zealand households. For Australia, there is evidence that participation in the HSR program has been associated with product reformulation for saturated fat and total energy content[91].

There is also work underway by FSANZ to review labelling for added sugars. This work is in response to a request from the Forum in August 2019 where the Forum recognised that information about added sugars on food labels is limited and/or unclear which limits consumers' ability to make food choices consistent with dietary guidelines. FSANZ is currently working on a review to look at whether and how the Food Standards Code should be amended to help consumers make more informed choices about added sugars in foods. If the review finds there is a need to change the Code, a proposal will be prepared and included on FSANZ's work plan. If sugar labelling requirements change as a result of this work, then it is possible that this may result in changes to food composition as food companies may seek to reduce their product's added sugar content in response to consumer demand.

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[89] Knai, C. *et al.* (2015) 'Has a public-private partnership resulted in action on healthier diets in England? An analysis of the Public Health Responsibility Deal food pledges', *Food Policy*, 54, pp. 1–10. doi: 10.1016/j.foodpol.2015.04.002.

[90] National Institute for Health Innovation (2018) *The Health Star Rating (HSR) system in New Zealand 2014-2018: System Uptake and nutrient content of foods by HSR status*. Auckland: Auckland UniServices Ltd. Available at: https://www.mpi.govt.nz/dmsdocument/31635-the-health-star-rating-system-in-new-zealand-2014-2018

[91] National Heart Foundation of Australia (2019) *Report on the monitoring of the implementation of the Health Star Rating system in the first four years of implementation: June 2014 to June 2018*. Available at: http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/474CBBEC911CFF01CA25803A007E7B2B/$File/Report-on-the-Monitoring-of-the-Implementation-of-the-Health-Star-Rating-System-in-the-First-Four-Years-of-Implementation-June-2014-to-June-2018.pdf

However, in response to the consultation on the Policy Guideline on food labelling to support consumers to make informed healthy food choices, some food industry stakeholders raised concerns about linking food labelling to reformulation, and noted that labelling is not necessarily a driver for them to reformulate their products.

Taxes

While not the focus of this work, taxes on the sugar content of sugar-sweetened beverages are in place in a number of countries. Evidence indicates that the beverage industry has responded by reformulating beverages subject to the tax to reduce the sugar content and therefore minimise tax payable[92].

For example, the Soft Drink Industry Levy in the United Kingdom is aimed at producers and importers of added sugar soft drinks and achieved a 28.8% reduction in the average sugar content of drinks subject to the levy between 2015 and 2018[93]. This percentage is much greater than sugar reductions recorded for food categories included in the United Kingdom's sugar reduction program. Another evaluation of the Soft Drinks Industry Levy reported that between 2015 and 2019, the proportion of drinks with sugar content greater than 5 g per 100 mL fell from an expected level of 49% to 15%[94].

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[92] World Cancer Research Fund International (2018) *Building momentum: lessons on implementing a robust sugar sweetened beverage tax*. Available at: https://www.wcrf.org/sites/default/files/PPA-Building-Momentum-Report-WEB.pdf.

[93] Public Health England (2019) *Sugar education: Report on progress between 2015 and 2018.* Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/839756/Sugar_reduction_yr2_progress_report.pdf

[94] Scarborough, P. *et al.* (2020) '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 Medicine*, 17(2), p. e1003025. doi: https://doi.org/10.1371/journal.pmed.1003025.

Part 3: Food and nutrient intakes in Australia and New Zealand, identification of where reformulation actions are already occurring, and consideration of potential gaps for activities to improve food composition.

A note on the population data used in this report: The food and nutrient consumption data in this report focus on Australians aged 2 years and over and New Zealand adults. Infants' dietary patterns and nutrient consumption was not captured in these food and nutrient consumption data.

Infancy is a vulnerable time where poor dietary patterns can have life-long impacts. Healthy eating in infancy and early childhood is important to prevent nutrient deficiencies, provide nutrients required for healthy growth and development and to support development of healthy taste preferences and life-long health promoting eating behaviours.

A separate project is underway to consider actions to improve the dietary intakes of infants and young children. Improving food composition for foods promoted infants and young children will be considered through that process.

Saturated fats

Dietary advice in Australia and New Zealand recommends limiting consumption of foods containing saturated fats due to the role of saturated fat in raising blood LDL (bad) cholesterol and increased risk of cardiovascular disease. Replacing saturated fats with unsaturated fats or wholegrains is recommended for reducing cardiovascular disease risk[95]. Associations between saturated fat intake and an increased risk of type 2 diabetes have also been observed[96].

The NRVs for Australia and New Zealand recommend a maximum of 10% energy intake from saturated fatty acids and trans fatty acids combined[97] to lower non-communicable disease risk.

In Australia, in 2011-12 the average contribution of saturated and trans fats to total energy intake was 12.4% for Australians aged 2 years and over (11.8% from saturated fat and 0.6% from trans fat). Saturated fat intake amongst Aboriginal and Torres Strait Islander people was significantly higher than non-Indigenous people. For Aboriginal and Torres Strait Islander people[98], in 2012/13 an average of 13.1% of energy was provided by saturated and trans fats (12.5% from saturated fats and 0.7% from trans fats).

Main sources of saturated fat in Australian's diets were milk products and dishes (accounting 24.9% of all saturated fat consumed), cereal based products and dishes (a very broad category including pizzas, burgers, tacos, sandwiches, pasta dishes, cakes and muffins, sweet and

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[95] National Heart Foundation of Australia (2019) *Dietary Position Statement: Dietary Fat and Heart Healthy Eating.* Available at: https://www.heartfoundation.org.au/activities-finding-or-opinion/food-and-nutrition-position-statements

[96] Australian National Health and Medical Research Council (NHMRC) (2013) *Australian Dietary Guidelines.* Available at: https://eatforhealth.govcms.gov.au/sites/default/files/content/n55_australian_dietary_guidelines.pdf

[97] Australian National Health and Medical Research Council (NHMRC) and New Zealand Ministry of Health, (2006) *Nutrient Reference Values.* Available at: https://www.nrv.gov.au/home.

[98] Australian Bureau of Statistics (ABS), (2015) *4727.0.55.005 - Australian Aboriginal and Torres Strait Islander Health Survey: Nutrition Results - Food and Nutrients, 2012-13*. Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4727.0.55.005~2012-13~Main%20Features~Fat~24

savoury biscuits, and sweet and savoury pastries) (24.4% of saturated fat consumed) and meat, poultry and game products and dishes (18.1%). For Aboriginal and Torres Strait Islander people, main sources of saturated fat were the same but in a different order, with the top contributor being meat, poultry and game products and dishes (22.8%), then milk products and dishes (24.5%) and cereal based products and dishes (20.9%).

For New Zealand, the 2008-09 New Zealand Adult Nutrition Survey[99] found that the mean contribution of saturated fatty acids to daily energy intake was 13.1%. The main sources of saturated fat in the diet were:

- Butter and margarine (8.5%)
- Milk (7.6%),
- Bread-based dishes (includes sandwiches, filled rolls, hamburgers, hotdogs, pizza, nachos, doner kebabs, wontons, spring rolls, stuffing); cheese; and potatoes, kumara and taro (each category approximately 6%)
- Cakes and muffins; poultry; beef and veal; and dairy products (each approximately 5%).

Māori males and females consumed a higher mean percentage of energy from saturated fat (14.2%) than non-Māori males and females, after adjusting for age[100]. There were no significant differences in saturated fat intake between Pacific and non-Pacific male and females[101].

The disease burden associated with diets high in saturated fat was not reported by the Global Burden of Disease study.

Assessment

Based on the latest data available, consumers in Australia and New Zealand are exceeding the recommended limit for consumption of saturated fat.

One of the challenges associated with reformulation or compositional limits for saturated fats is that major sources of saturated fats in Australia and New Zealand are from foods which contain naturally occurring saturated fats, such as meat and dairy, which may be less suitable for reformulation. However, there is evidence that changing the diet of dairy cows can reduce the milk's saturated fat content and increase mono and poly unsaturated fats[102].

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[99] University of Otago and New Zealand Ministry of Health (2011) *A focus on nutrition: key findings from the 2008/09 NZ Adult Nutrition Survey.* Available at: http:/www.health.govt.nz/publication/focus-nutrition-key-findings-2008-09-nz-adult-nutrition-survey. Note this is adults for 15 years and over

[100] New Zealand Ministry of Health (2012), *A Focus on Māori Nutrition: Findings from the 2008/09 New Zealand Adult Nutrition Survey.* Wellington: Ministry of Health.

[101] Ministry of Health 2012. *A Focus on Pacific Nutrition: Findings from the 2008/09 New Zealand Adult Nutrition Survey*. Wellington: Ministry of Health.

[102] Hyseni, L. *et al.* (2017) 'The effects of policy actions to improve population dietary patterns and prevent diet-related non-communicable diseases: Scoping review', *European Journal of Clinical Nutrition*. Nature Publishing Group, 71(6), pp. 694–711. doi: 10.1038/ejcn.2016.234.

In relation to meats, Dietary Guidelines in Australia[103] recommend choosing lean meats, and the Eating and Activity Guidelines in New Zealand[104] recommend limiting red meat and removing fat from meat.

For dairy, the Australian Dietary Guidelines recommend mostly reduced fat milk, yoghurt and cheese to support the management of energy (kilojoule) intakes rather than specifically for the need to reduce saturated fat intakes. In New Zealand, the Eating and Activity Guidelines recommend consuming low and reduced fat milk and milk products in order to reduce both saturated fat and total energy intake. In both Australia and New Zealand, other dairy products such as cream, ice-cream and butter are not recommended for a healthy diet.

The importance of considering the food source of a nutrient, rather than the nutrient in isolation, is being increasingly recognised. In relation to dairy, there is evidence that dairy fat from cheese and yoghurt does not raise LDL (bad) cholesterol to the same extent as dairy fat from butter[105]. The Heart Foundation in Australia recently released advice recommending unflavoured milk, yoghurt and cheese as part of a heart healthy eating pattern for the general population. However, for people that need to reduce their blood cholesterol levels, reduced fat milk, yoghurt and cheese are recommended. Regardless of blood cholesterol status, dairy foods such as ice-cream, and butter are not recommended.

Cereal based products and dishes is a major contributor to saturated fat intakes in Australia. There is work underway to reduce major sources of saturated fat within this category through voluntary reformulation and Wave 1 reformulation targets for saturated fat were recently endorsed in the Australian Healthy Food Partnership for pizzas, certain processed meats and pastries. For other foods in this category which contribute to saturated fat intakes, such as cakes, muffins, and sweet biscuits, no targets could be established as these foods were not well suited to reformulation. However, work to reduce intakes is being progressed by reducing portion sizes and education. The New Zealand Heart Foundation have recently introduced saturated fat targets in the pie and pizza categories and are also looking to align targets with the Healthy Food Partnership.

The voluntary reformulation activities under the Partnership focus on products available at the supermarket, and a gap exists in relation to reformulation to reduce saturated fats in ready-to-eat products available through outlets such as bakeries and fast-food/quick-service outlets. Many of the foods sold through these outlets fall into the category of cereal based mixed dishes such as pastries, pies, burgers, pizzas etc which are a major source of saturated fat intake.

In 2015-16, eating out and fast-food accounted for one-third of Australian's food expenditure, up from 25% of food expenditure in 1988-89[106]. In 2015-2016, 28% of New Zealand Household's average food expenditure was spent on restaurants and ready to eat food, up

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[103] National Health and Medical Research Council (NHMRC) 2013, *Australian Dietary Guidelines*

[104] New Zealand Ministry of Health (2015), *Eating and Activity Guidelines for New Zealand Adults,* Wellington: Ministry of Health. Available at: https://www.health.govt.nz/publication/eating-and-activity-guidelines-new-zealand-adults

[105] National Heart Foundation of Australia (2019) *Dietary Position Statement: Dietary Fat and Heart Healthy Eating*. Available at: https://www.heartfoundation.org.au/activities-finding-or-opinion/food-and-nutrition-position-statements

[106] Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) (2018) *Food demand in Australia: trends and issues 2018*. Available at: http://data.daff.gov.au/data/warehouse/9aat/2018/fdati9aat20180822/FoodDemandInAustralia_20180822_v1.0.0.pdf

from 25% in 2012/2013[107]. There was a 25% increase in spending on restaurant meals and ready-to-eat food over this period, although, in part, this was due to increased restaurant prices.

In 2017-18, over 17 million (84.5%) Australians[108] and over 3.2 million (84.8%) New Zealanders[109] were buying or eating ready-to-eat meals and snacks from businesses such as major fast food outlets, independent takeaway shops, and convenience stores. In 2019, Australians averaged 65 takeaway food transactions per person, with an annual average spend of $880 per person. There were a total of 1.6 billion transactions for takeaway purchases in 2019[110], or 4.5 million per day. This equates to about half of Australian households having at least one person ordering takeaway food every day (note these figures include all types of takeaway purchases such as coffee, ice-creams, fish and chips, pizzas, sandwiches etc).

With the exception of mandatory menu board labelling for kilojoule content of foods in certain quick-service outlets in Australia, the fast-food/quick-service sector has not been the focus of public health nutrition or food regulatory actions. Robust data on the energy and nutrients provided from take away and fast-food items is not available, however, the increasing popularity of this sector warrants consideration of the healthfulness of foods sold in these outlets. The quick-service restaurant sector also does not have widespread commitment to product reformulation which further justifies the need to drive reformulation in this sector.

Conclusion

The major sources of saturated fats in the diets of Australians and New Zealanders are dairy and meat. Given the nature of these intrinsic saturated fats, it is recommended that dietary advice to consume lean (or fat trimmed) meat and low fat milk, yoghurt and cheese is promoted, rather than pursuing regulatory or non-regulatory options for improving the composition of these foods.

Food companies can promote their products as being low or reduced fat through the nutrition content claim permissions in the Australia and New Zealand Food Standards Code.

In relation to cereal products and dishes, voluntary actions to reduce saturated fat levels in pastries and pizzas are underway and it is recommended that time be allowed for the food industry to demonstrate achievements against voluntary reformulation targets before further options are pursued for saturated fat reformulation.

It is also recommended that voluntary reformulation targets be established for saturated fats by the Australian Healthy Food Partnership and in New Zealand for the quick-service/ready to eat industry. If industry engagement is lacking, or sufficient progress is not achieved against the voluntary reformulation targets, then further options such as compositional limits for saturated fats could also be pursued in these industry sectors. It is recommended that

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[107] Statistics New Zealand (2016) *Household expenditure Statistics- Year ended June 2016*. Available at: https://www.stats.govt.nz/assets/Uploads/Household-expenditure-statistics/Household-expenditure-statistics-year-ended-june-2016/household-expenditure-statistics-year-ended-june-2016.xlsx

[108] Roy Morgan (2018) *Press Release: McDonald's, KFC & Subway most visited Aussie restaurants.* Available at: http://www.roymorgan.com/findings/7599-australian-eating-habits-eating-in-out-march-2018-201805290253

[109] Roy Morgan (2018) *Press Release: McDonald's, KFC & Domino's Pizza most visited NZ restaurants.* Available at: http://www.roymorgan.com/findings/7613-new-zealand-eating-habits-eating-in-out-qsr-restaurants-march-2018-201805310031

[110] Future Food (2019) *Eating Out in Australia – Takeaway on Takeaways*. Available at: https://futurefood.com.au/blog/2019/06/eating-out-in-australia-takeaways-on-takeaways

progress against reformulation targets be assessed in 2 years to determine whether industry is on track to achieve the targets or whether there are particular product categories where the industry response is insufficient or ineffective.

Trans fats

Trans fats are produced through hydrogenation of unsaturated oils during manufacturing processes and also occur naturally in small amounts in some ruminant (animal) products. Trans fats are a concern as they elevate the body's levels of LDL (bad) cholesterol and reduce HDL (good) cholesterol. Trans fats have a more adverse effect on the risk of cardiovascular disease compared to saturated fats[111,112]and there are clear associations between intake of trans fats and cardiovascular mortality[113,114,115].To reduce heart disease risk, the WHO[116] recommends that no more than 1% of total energy intake should come from trans fats, and trans fats should be replaced with unsaturated fats.

Diets high in trans fats accounted for 0.2% of the burden of disease in Australia and 0.2% in New Zealand in 2017[117]. In terms of deaths, diets high in trans fats have been attributed to 0.5% of total deaths in Australia and 0.4% in New Zealand in 2017.

Non-regulatory efforts to work with food industry to expand voluntary efforts to reduce trans fat in the food supply were established in 2006. In 2009, FSANZ[118] assessed whether non-regulatory measures to reduce trans fats in the Australian and New Zealand food supply had been effective in reducing intakes of trans fats. FSANZ estimated more than 85% of New Zealanders and 90% of Australians had trans fat intakes below the WHO recommendation of 1% of total energy intake. The higher intakes for New Zealanders reflected both higher manufactured trans fatty acid intakes as well as higher intake of ruminant trans fatty acids. In both countries, for adults as well as children, ruminant trans fatty acids were the dominant source in the diet, representing 60 to 75% of total trans fatty acid intake.

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[111] World Health Organization (WHO) (2003) 'Diet, nutrition and the prevention of chronic diseases. Report of a Joint WHO/FAO Expert Consultation', *World Health Organization - Technical Report Series*, (916). doi: 10.1093/ajcn/60.4.644a.

[112] Australian National Health and Medical Research Council (NHMRC) and New Zealand Ministry of Health, (2006) *Nutrient Reference Values.* Available at: https://www.nrv.gov.au/home.

[113] Mozaffarian, D., Aro, A. and Willett, W. (2009). 'Health effects of trans-fatty acids: experimental and observational evidence'. *Eur J Clin Nutr* 63, S5–S21

[114] Clifton, P. and Keogh, J. (2017) 'Dietary fats and cardiovascular disease: an Evidence Check rapid review brokered by the Sax Institute for the National Heart Foundation of Australia'. Available at: https://www.saxinstitute.org.au/wp-content/uploads/Dietary-fats-CVD-FINAL.pdf.

[115] De Souza, R. J. *et al.* (2015) 'Intake of saturated and trans unsaturated fatty acids and risk of all cause mortality, cardiovascular disease, and type 2 diabetes: Systematic review and meta-analysis of observational studies', *BMJ (Online)*, 351, pp. 1–16. doi: 10.1136/bmj.h3978.

[116] World Health Organization (WHO) (2003) 'Diet, nutrition and the prevention of chronic diseases. Report of a Joint WHO/FAO Expert Consultation', *World Health Organization - Technical Report Series*, (916). doi: 10.1093/ajcn/60.4.644a.

[117] Institute of Health Metrics and Evaluation (IHME) (2020), *Global Burden of Disease 2017*. Available at: http://ihmeuw.org/52z8

[118] Food Standards Australia New Zealand (FSANZ) (2009), *Intakes of trans fatty acids in New Zealand and Australia. Review report – 2009 Assessment*. Available at: http://www.foodstandards.gov.au/publications/documents/TFAs_intakes_2009.pdf

FSANZ recommended continuing non-regulatory measures to reduce trans fats in the food supply. This recommendation was based on evidence of the effectiveness of non-regulatory approaches in leading to a decline in intakes of trans fats from manufactured sources in both Australia and New Zealand, and that mean consumption of trans fats in the Australian and New Zealand populations was within WHO recommendations. FSANZ also concluded that saturated fat intakes are the more important concern for risk of heart disease as the intake of saturated fat is higher than trans fats.

In New Zealand, the 2008-09 Adult Nutrition Survey did not measure intake of trans fats. From the 2009 FSANZ assessment (based on intake data from the 1997 Adult National Nutrition Survey and 2002 Children National Nutrition Survey) the mean manufactured trans fat intake was estimated at 0.6g/day or less for New Zealand. For New Zealand consumers whose total trans fat intake exceeds 1% of energy, pastry products and creamy style pasta dishes, as well as cheese, popcorn, doughnuts and take away style fish products, made a disproportionate contribution to trans fat intake.

In Australia, the 2011-12 National Nutrition and Physical Activity Survey reported that the average consumption of trans fats in Australia (population aged 2 years and over) was 0.6 % of energy intake, below the WHO recommended limit. Main sources of trans fat intake were cereal products and dishes (24.9%), meat, poultry and game products and dishes (23.2%), and milk products and dishes (24.2%), with the latter two categories likely to be predominantly ruminant trans fats[119].

Analysis of the 2011-12 Australian National Nutrition and Physical Activity Survey by the Sax Institute[120] reported 10% of Australians exceeded the WHO recommended trans fat limit. Modelling also identified inequalities in trans fat consumption with estimates that 14% of survey participants with the lowest level of income and 14% of participants with the lowest level of education would exceed the WHO recommended limit.

The Sax Institute reported that, based on FSANZ food composition data, 75% of products in Australia were below the 2% compositional limit that is commonly used internationally in relation to trans fats. Twenty-five percent of products exceeded the limit (noting that some of these products contained both manufactured and ruminant trans fats). When products likely to contain both ruminant and manufactured trans fats were excluded, 14% of products on the market exceeded the 2% limit. The Sax Institute also compared the trans fats levels in Australian foods (in 2013) to international food composition data and reported that trans fat levels in products such as pastries, popcorn and baked goods were higher in Australia compared to Canada or the United Kingdom (see Table 2 below). Note that Canada has since banned use of trans fats in the food supply, while the United Kingdom does not have compositional limits for trans fats.

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[119] Australian Bureau of Statistics (ABS) (2014) *4364.0.55.007 Australian Health Survey: Nutrition First Results- Food and Nutrients, 2011-12.* Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007~2011-12~Main%20Features~Macronutrients~703

[120] Wu, J. H. Y. *et al.* (2017) *Levels of trans fats in the food supply and population consumption in Australia: an Expert Commentary rapid review brokered by the Sax Institute for The National Heart Foundation of Australia*. Available at: https://www.heartfoundation.org.au/getmedia/e27233c8-73d5-4c37-9416-ad7592af593c/Expert-Commentary-Levels-of-trans-fats-in-the-food-supply-and-consumption-in-Australia.pdf.

Table 2: International comparison of trans fats in food [121]

Product type	**Australia 2013**	**Canada 2010**	**UK 2013**	**Netherlands 2011**	**Malaysia 2014**
	Trans fat level as a % of total fat (mean ± standard deviation (where available))				
Prepared pastry	6.3 ± 3.2	2.1 ± 8.1	na	na	na
Popcorn	6.8 ± 7.5	4.4 ± 11.8	na	na	na
Custard baked goods	4.4 ± 2.4	1.3 ± 1.4	na	na	na
Meat pies	4.4 ± 2.2	na	2.4	na	na
Sausage rolls	4.8 ± 3.0	2.5 ± 4.6	na	na	na
Croissants	4.8 ± 1.4	2.0 ± 1.2	na	na	na
Desserts	2.7 ± 1.7	1.8 ± 3.7	4.0	4.7	2.1
Margarine/spread	1.9 ± 0.7	2.7 ± 7.2	0.7	1.4	0.2

In 2017, FSANZ and the New Zealand Ministry for Primary Industries provided a report[122] to Forum Ministers about trans fat levels in imported oils. The report found that there has been a significant decline in the importation of vegetable fats and oils with the potential to contain trans fats into Australia and New Zealand. Also, levels of trans fats reported on product labels and industry specifications were consistent with previous (2006-2013) trans fats analysis. The report concluded that this evidence indicates that dietary intakes of trans fats have continued to reduce over time.

An analysis of the presence of trans fat containing ingredients in pre-packaged foods in Australia in 2018[123] reported that out of a total of 28,349 foods, 131 (0.5%) products contained specific ingredients indicative of manufactured trans fats. A further 1,626 (5.7%) products contained non-specific ingredients that may indicate the presence of manufactured trans fats. Bread and bakery products, cereal and grain products and confectionery were the top three food groups that contained specific ingredients indicative of manufactured trans fats. This analysis indicates that prevalence of trans fats in Australian foods is low, however,

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[121] Wu, J. H. Y. *et al.* (2017) *Levels of trans fats in the food supply and population consumption in Australia: an Expert Commentary rapid review brokered by the Sax Institute for The National Heart Foundation of Australia*. Available at: https://www.heartfoundation.org.au/getmedia/e27233c8-73d5-4c37-9416-ad7592af593c/Expert-Commentary-Levels-of-trans-fats-in-the-food-supply-and-consumption-in-Australia.pdf. (page 12)

[122] Food Standards Australia New Zealand (FSANZ) (2017) *Assessment of Trans Fatty Acids in Imported Oils.* Available at: https://www.foodstandards.gov.au/publications/Documents/Assessment%20of%20Trans%20Fatty%20Acids%20in%20Imported%20Oils.pdf

[123] Huang, L. *et al.* (2020) 'Presence of trans fatty acids containing ingredients in pre-packaged foods in Australia in 2018', *Australian and New Zealand Journal of Public Health*, pp. 1–2. doi: 10.1111/1753-6405.13014.

it is relevant to note that the analysis did not include unpackaged foods such as bakery products which can potentially contain trans fats.

Assessment

Consumption of trans fats has been directly linked to cardiovascular mortality and internationally, compositional limits or bans on use of trans fats have demonstrated benefits in population health outcomes in reducing cardiovascular disease mortality.

Denmark was the first country to introduce compositional limits for trans fats in 2004[124] and has since demonstrated significant reductions in cardiovascular mortality[125]. While Denmark initially achieved significant reductions in trans fats in the food supply through voluntary reformulation, compositional limits were introduced based on evidence that vulnerable population groups continued to consume high levels of trans fats. The voluntary reformulation actions had led to acceptance of trans fat reformulation, the technology needed to reformulate and industry buy-in and engagement which facilitated the introduction of mandatory compositional limits. The mandatory trans fat limit was selected above other interventions, as approaches such as labelling or health promotion campaigns were determined to be ineffective in addressing high trans fat consumption in vulnerable populations, and trans fat content of unpackaged food such as takeaway products[126].

In Australia and New Zealand, mean consumption of trans fats is within WHO advice, however, modelling evidence (based on 2011-12 data) indicates that in Australia (similar to Denmark) certain vulnerable population group may be exceeding the WHO recommendation.

The major sources of trans fats in Australia and New Zealand are ruminant sources[127]. Ruminant sources of trans fats are not able to be reduced by changes in industry practices, other than through the availability of reduced fat dairy products, trimming of beef and lamb cuts, and less use of ruminant ingredients in mixed foods.

Recent (2017) monitoring of fats and oils imported into Australia and New Zealand reports there has been a significant decline in the importation of vegetable fats and oils with the potential to contain trans fats. The majority of the products in Australia that exceed the 2% trans fat international compositional limits consist of manufactured trans fats.

Research suggests that legislative actions to reduce trans fats in the food supply are more effective than voluntary measures[128] and bans on use of trans fats in the food supply are more

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[124] World Health Organization (WHO) (2019). *Countdown to 2023: WHO report on global trans-fat elimination 2019*. https://apps.who.int/iris/bitstream/handle/10665/331300/9789241516440-eng.pdf

[125] Restrepo BJ and Rieger M (2016), 'Denmark's Policy on artificial trans fat and cardiovascular disease', *American Journal of Preventive Medicine,* 50(1); 69-76.

[126] Kaldor, J. C. (2018) 'Food Reformulation for NCD-Prevention: Regulatory Options and Potential Barriers', *QUT Law Review*, 18(1), p. 76. doi: 10.5204/qutlr.v18i1.729.

[127] Food Standards Australia New Zealand (FSANZ) (2009) *Intakes of trans fatty acids in New Zealand and Australia. Review report – 2009 Assessment*. Available at: http://www.foodstandards.gov.au/publications/documents/TFAs_intakes_2009.pdf

[128] World Health Organization (WHO) (2018), *Replace Trans Fat: Frequently Asked Questions.* Available at: https://www.who.int/docs/default-source/documents/replace-transfats/replace-trans-fat-faqs.pdf?Status=Temp&sfvrsn=956d171f_6

effective than mandatory or voluntary labelling[129]. Regulatory compositional changes for industrially produced trans fats has potential to support health outcomes particularly in groups with lower socio-economic status or lower education levels, which have both higher intakes of trans fats and bear a higher burden of cardiovascular disease[130]. These groups may be less receptive to public health campaigns[131], or have difficulty reading food labels[132]. (Note that trans fats are not required to be labelled in Australia and New Zealand and, even if labelling was required, it is unclear whether foods likely to contain industrially produced trans fats such as baked goods and fried foods would require such a label).

Voluntary targets to reduce trans fats in foods may be adopted disproportionately across the food supply[133], requiring consumers to have the appropriate nutrition knowledge, literacy and skills to actively select foods that have low or no trans fat. This may be challenging for consumers with lower education or socioeconomic status, who are estimated to have higher consumption of trans fats and would benefit most from measures to reduce trans fat in the food supply. Products that have been reformulated to reduce trans fats may also be more expensive[134] and therefore unattainable to consumers with limited food budgets.

Conclusion

Trans fats do not appear to be a concern for the majority of consumers in Australia and New Zealand and voluntary efforts to remove or reduce trans fats in the food supply have been largely successful. Despite this, there are equity concerns as evidence indicates vulnerable populations in Australia may still be exceeding recommended trans fat limits. While work to improve the composition of the food supply in relation to trans fats may only affect a small proportion of food products, it is proposed this issue be explored further through the Food Regulation Policy Framework to identify whether additional actions may better protect vulnerable population groups.

Sugars

A note on terminology: This section of the report uses the terms 'added' and 'free' sugars.

The term 'added sugars' is used in the Australian Dietary Guidelines and New Zealand Eating and Activity Guidelines, however, neither guideline provides a clear definition of 'added sugars' or a recommended limit on consumption the of added sugars.

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[129] Downs, S. M., Thow, A. M. and Leeder, S. R. (2013) 'The effectiveness of policies for reducing dietary trans fat: a systematic review of the evidence', *Bulletin of the World Health Organization*, 91, p. 262–269H. doi: 10.2471/BLT.12.111468.

[130] Australian Institute of Health and Welfare 2019. Indicators of socioeconomic inequalities in cardiovascular disease, diabetes and chronic kidney disease. Cat. no. CDK 12. Canberra: AIHW.

[131] King, E. L. *et al.* (2013) 'Evaluating the effectiveness of an Australian obesity mass-media campaign: How did the "Measure-Up" campaign measure up in New South Wales?', *Health Education Research*, 28(6), pp. 1029–1039. doi: 10.1093/her/cyt084.

[132] Soederberg Miller, L. M. and Cassady, D. L. (2015) 'Food Label Knowledge. A systematic review', *Appetite*, 92(1), pp. 207–216. doi: 10.1016/j.appet.2015.05.029.

[133] World Health Organization (WHO) (2018), *Replace Trans Fat: Frequently Asked Questions.* Available at: https://www.who.int/docs/default-source/documents/replace-transfats/replace-trans-fat-faqs.pdf?Status=Temp&sfvrsn=956d171f_6

[134] Downs, S. M., Thow, A. M. and Leeder, S. R. (2013) 'The effectiveness of policies for reducing dietary trans fat: a systematic review of the evidence', *Bulletin of the World Health Organization*, 91, p. 262–269H. doi: 10.2471/BLT.12.111468.

Dietary advice from the WHO uses and clearly defines the term, 'free sugars' and provides quantified recommendations on the limit for intake of free sugars to reduce the risk of unhealthy weight gain and dental caries. The WHO defines 'free sugars' as 'monosaccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer, and sugars naturally present in honey, syrups, fruit juices and fruit juice concentrates'.

In light of the above, the term 'free sugars' is used in this report when referring to intakes of sugars and comparing that against quantified recommendations.

Where this report uses the term 'total sugars' it is referring to a food's total sugars content, from both added and naturally occurring sources.

Dietary advice in Australia, New Zealand and internationally (including the WHO) recommend limiting the consumption of foods containing added/free sugars.

Foods high in added/free sugars may displace more nutritious foods in the diet[135,136,137] and contribute to dental caries, unhealthy weight gain and associated chronic conditions[138,139]. The association between consumption of added/free sugars and adverse health outcomes is largely through the sugars' contribution to excess energy intakes. Sugar sweetened beverages, in particular, have been positively associated with body weight or obesity[140].

In 2011-12 just over half (52%) of all Australians aged two years and over exceeded the WHO recommendation to limit energy from free sugars to less than 10% of dietary energy. Close to three-quarters of nine to thirteen year olds and fourteen to eighteen year olds usually derived 10% or more of their dietary energy intake from free sugars, with the top 10% of this age group usually consuming at least 23% of energy from free sugars – over twice the WHO recommended limit. The main contributors to free sugars consumption were beverages, led by soft drinks, sports and energy drinks (19%), fruit juice and fruit drinks (13%)[141]. For food sources of free sugars, the leading contributors were cakes, muffins, scones and cake-type desserts (8.7%), confectionary and cereal/nut/fruit/seed bars (8.7%), and sugar products and dishes (e.g. honey, syrups, jam, chocolate spreads and dishes other than confectionary where sugar is the major component, e.g. pavlova or meringue) (7.6%). In contrast to the trends observed for sugars from beverages, younger children and older adults consumed a higher proportion of free sugars from foods.

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[135] Mok, A. *et al.* (2018) 'Intake of free sugars and micronutrient dilution in Australian adults', *American Journal of Clinical Nutrition*, 107(1), pp. 94–104. doi: 10.1093/ajcn/nqx008.

[136] Louie, J. C. Y. and Tapsell, L. C. (2015) 'Intake of total and added sugars and nutrient dilution in Australian children and adolescents', *British Journal of Nutrition*, 114(11), pp. 1875–1886. doi: 10.1017/S0007114515003542.

[137] Wong, T. H. T. *et al.* (2019) *Intake of free sugar and micronutrient dilution in Australian children and adolescents*, *European Journal of Nutrition*. doi: 10.1007/s00394-018-1801-3.

[138] World Health Organization (WHO) (2015) 'Guideline: Sugars intake for adults and children', *World Health Organization*. doi: 10.1007/s10773-018-3697-3.

[139] Te Morenga, L. A. *et al.* (2014) 'Dietary sugars and cardiometabolic risk: Systematic review and meta-analyses of randomized controlled trials of the effects on blood pressure and lipids', *American Journal of Clinical Nutrition*, 100(1), pp. 65–79. doi: 10.3945/ajcn.113.081521.

[140] Luger, M. *et al.* (2018) 'Sugar-Sweetened Beverages and Weight Gain in Children and Adults: A Systematic Review from 2013 to 2015 and a Comparison with Previous Studies', *Obesity Facts*, 10(6), pp. 674–693. doi: 10.1159/000484566.

[141] Australian Bureau of Statistics (ABS) (2014), '*Australian Health Survey: Consumption of Added Sugars, 2011-12.* Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4364.0.55.011main+features12011-12

For the Aboriginal and Torres Strait Islander population, in 2012-13 the average consumption of free sugars was 75g per day. Aboriginal and Torres Strait Islander people consumed an average of 15g more free sugars on than non-Indigenous people. Free sugars contributed to 14% of daily energy intakes, which exceeds the WHO advice of no more than 10% of energy from free sugars. Beverages were the main contributor to intakes of free sugars, with beverages accounting for 67% of free sugar consumption amongst Aboriginal and Torres Strait Islander people, compared to 51% for non-indigenous people.

In the Australian population (aged two years and over) the median amount of sugar sweetened beverages consumed daily is the size of a regular can, however, the top 10% of consumers drink more than a litre of sugar sweetened beverages daily, with the top consuming males aged 19-30 years consuming 1.5 litres a day.

In New Zealand the 2008-09 Adult Nutrition Survey found that over half (58%) of New Zealand adults exceeded the WHO free sugars recommended limit, with the median intake being 11%[142] of energy coming from free sugars. New Zealand European females aged between 15-18 years old were most likely to exceed this recommendation, with 80% of this group exceeding this recommendation. The main contributors to free sugars consumption has not been reported in New Zealand. However, in 2008-09 it was estimated that New Zealand adults consumed on average 23 grams of sugar from sugar sweetened beverages each day, contributing to 16.7% of total sugar intake[143]. Both males and younger age groups tended to consume more sugar from these drinks, with the top 10% of male consumers in the fifteen to eighteen year old age group consuming 128 grams per day.

In 2017, diets high in sweetened beverages accounted for 0.3% of total disease burden and 0.4% of total deaths in Australia, and 0.20% of disease burden and 0.3% of total deaths in New Zealand[144]. It is recognised that burden of disease associated with diets high in sweetened beverages is relatively low compared to the burden of disease associated with other dietary risks such as diets low in whole grains or diets high in sodium. However, it is important to note that this risk factor for disease burden is attributed to a single product category, whereas most other dietary risk factors are a nutrient (sodium, for example) that is distributed through a range of foods.

Assessment

Evidence from the United Kingdom's sugar reduction program indicates that sugar reformulation in both food and beverage categories is possible however the extent of the reformulation achieved varied by food category.

In both Australia and New Zealand beverages the main source of free/total sugars in the diet. Sugary drinks have also been positively associated with body weight or obesity[145]. Water is promoted as the preferred drink in dietary advice in both Australia and New Zealand.

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[142] Kibblewhite R. L. (2017) *Estimating free sugars intake in New Zealand [Thesis]*. Dunedin, New Zealand: University of Otago. Available at: https://ourarchive.otago.ac.nz/handle/10523/7204

[143] University of Otago (2015) *Beverages as Sources of Sugars in the New Zealand Diet, 2008/09 New Zealand Adult Nutrition Survey*, Technical report no. 2015.139.

[144] Institute of Health Metrics and Evaluation (IHME) (2020), *Global Burden of Disease 2017*. Available at: http://ihmeuw.org/52z8

[145] Malik, V. S. *et al.* (2013) 'Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis', *The American Journal of Clinical Nutrition*, 98, pp. 1084–1102. doi: 10.3945/ajcn.113.058362.1.

A 2015 survey by the charity Action on Sugar examined the sugar content of sugar-sweetened beverages across a number of countries. There was considerable variability in sugar content of soft drinks within and between countries; in some instances the same beverage product had a difference in sugar content of 20 grams or more depending on the country. In general, the sugar content of the Australian and New Zealand beverages surveyed was towards the middle of the range. The results of this survey are summarised in Table 3.

Table 3: Summary of 2015 international sugary drinks survey results

	Sugars (g) per 330 mL serving		
Drink	**Australia** **New Zealand**	**Highest**	**Lowest**
7 Up	37 Australia N/A New Zealand	39 Canada	35 USA
Coca Cola	35 Australia 35 New Zealand	39 Canada	32 Thailand
Fanta Orange	37 Australia 41 New Zealand	43 India	23 UK
Schweppes Tonic Water	N/A Australia 29 New Zealand	45 USA	16 Argentina
Sprite	33 Australia 33 New Zealand	47 Thailand	19 Austria

The survey suggests there is room for the industry to further reduce the sugar content of sugar-sweetened beverages in Australia and New Zealand. However, it is relevant to note that the survey by Action on Sugar was undertaken in 2015 and there is evidence that sugar content of some beverages in Australia and New Zealand has reduced since this time with part of the sugar content being replaced with intense sweeteners[146]. This reduces sugar intakes but may not shift the population's preference for a given level of sweetness. Reformulation in response to taxation or through voluntary industry initiatives may also have occurred internationally since 2015.

The *New Zealand Gs1 On Pack Label Database* provides label data on branded food products available in the New Zealand food supply. This database was used to examine the sugar content of the ready to drink flavoured drinks category. This includes sweetened carbonated and uncarbonated non-dairy beverages (both intense sweetened and sugar sweetened beverages, excludes fruit juices). Of the 690 flavoured non-dairy beverages available for sale in New Zealand in the last year, 554 products contained sugar (0.1 to 13.2 g of sugar per 100mL; median 7.8 grams per 100mL). The distribution of the sugar content of the beverages is outlined in Table 4. One quarter of the beverages that contained sugar had more than 10g

[146] For example, Fanta Orange now contains 26g of sugar per 330mL. Sprite in Australia now contains 16g of sugar per 330mL and 28g of sugar in New Zealand.

of sugar per 100mL. (Note Australia is currently developing a food label database which would enable similar analysis).

Table 4: Sugar content of sugar-sweetened beverages in New Zealand 2019-2020[147]

Sugar content per 100mL	Number of products
≤ 5g	184
5.1-10g	231
>10g	139

In New Zealand, researchers from the University of Auckland estimated a 26% reduction in annual household sugar purchases could be achieved if sugar content targets for selected food categories, commonly consumed by children, were introduced[148]. This included sugar content targets for 22 food groups contributing 2% or more two NZ children's total sugar content. Food categories with the smallest percentage of products meeting the sugar content targets were electrolyte drinks and flavoured dairy milk.

In Australia, there are industry initiatives to voluntarily reduce sugar content in beverages[149], however, the industry can do so by offering more low and no sugar options, rather than changing the formulation of the original 'full sugar' varieties. Behaviour change by consumers is still required to switch to a lower or no sugar variety of that beverage. Reformulation of 'full sugar' varieties has the potential support consumers who are not responsive to messages about behaviour change as reformulation would reduce the amount of sugars in the beverages they consume. Australian Bureau of Statistics data reveals that, while consumption of sugary beverages is decreasing[150], sugary beverages are still consumed more commonly than diet (low or no sugar) varieties (in 2017/18, 9.1% of Australians consumed sugary beverages daily, compared to 4.8% that consume diet beverages daily[151]).

Reformulation targets are under consideration through the Healthy Food Partnership for sugar in beverages such as soft drinks, fruit drinks, flavoured water, mineral water, soda water and ice-teas, and flavoured milks. The targets are expected to be finalised in late 2020.

Labelling changes may also encourage the beverage industry to reduce the sugar content of their products. Under the new calculator being introduced in the HSR front-of-pack labelling

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[147] New Zealand Gs1 On Pack Label Database (August 2020)

[148] Eyles, H. *et al* (2020) 'Reducing children's sugar intake through food reformulation: methods for estimating sugar reduction program targets using New Zealand as a case study'. *Am J Clin Nutr,* 11,3. Pp.622-634. doi: 10.1093/ajcn/nqz313.

[149] Australian Beverages Council (2018) *Sugar reduction pledge.* Available at: https://www.australianbeverages.org/initiatives-advocacy-information/sugar-reduction-pledge/

[150] Australian Bureau of Statistics (ABS) (2015) *Less Australians drinking sweetened drinks*. Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007~2011-12~Media%20Release~Less%20Australians%20drinking%20sweetened%20drinks%20(Media%20Release)~10001

[151] Australian Bureau of Statistics (ABS) (2018) *National Health Survey: First Results, 2017-18* Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.001~2017-18~Main%20Features~Sugar%20sweetened%20and%20diet%20drink%20consumption~110

system from 15 November 2020, sugar sweetened soft drinks will score between 0.5-1.5 stars (depending on the sugar content)[152].

In addition, FSANZ is looking at sugar labelling and how to give Australian and New Zealand consumers' better information about added sugar in food to help them make informed and healthier choices. The Forum requested FSANZ review nutrition labelling for added sugars and different labelling options, including potentially using pictorial approaches to convey the sugar content of sugary beverages due to the low uptake of the HSR star graphic in the beverage category.

It will be important to monitor the impacts of sugar reformulation activities, both in response to labelling or voluntary targets, to identify any unintended consequences. For example, a recent analysis of sugar reformulation occurring in the Canadian food supply between 2013 and 2017 identified that while the majority (76.6%) of foods and beverages did not reformulate to reduce sugar content, of the 12.4% of products that were reformulated to reduce sugar content the median energy level did not change as sugars were replaced with starches[153].

Conclusion

Water is promoted above other beverages in Australian and New Zealand dietary advice. There are established links between sugary beverages and overweight and obesity, and 'full sugar' beverages are more popular than diet/artificially sweetened beverages. The amount of sugar in sugary beverages varies considerably. While there are voluntary reformulation actions in the beverage category, the industry's voluntary reformulation activities have largely focussed on reducing sugar content across their portfolio by producing more bottled water or artificially sweetened drinks and not necessarily reformulating 'full sugar' products. It is recommended that further work to explore options to reduce sugars content of 'full sugar' beverages be considered further through the Food Regulation Policy Framework. This activity would complement voluntary actions underway and help to ensure that reformulation of sugary drinks that has been occurring internationally can be accessed by consumers in Australia and New Zealand.

In relation to sugars in foods, it is recommended that time be given to observe the impact of voluntary reformulation actions occurring in Australia, New Zealand and internationally before further options be pursued. However, this report has identified a gap in relation to voluntary reformulation of foods in the fast food/quick service sector and therefore consideration of potential voluntary sugar reformulation is warranted. There is also the need for greater promotion of the need to reduce consumption of foods and beverages containing added sugars to complement the current reformulation activities. However, this conclusion does not necessarily apply to consideration of the sugar content of foods and beverages promoted to infants and young children, which is being considered through a separate process.

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[152] MPconsulting (2019) *Health Star Rating System Five Year Review Report*. Available at: http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/D1562AA78A574853CA2581BD00828751/$File/Health-Star-Rating-System-Five-Year-Review-Report.pdf

[153] Bernstein, J. T. *et al.* (2020) 'Reformulation of sugar contents in Canadian prepackaged foods and beverages between 2013 and 2017 and resultant changes in nutritional composition of products with sugar reductions', *Public Health Nutrition*, 1968. doi: 10.1017/S1368980020001159.

Sodium/salt

Reducing salt intakes through food reformulation is also one of the 'best buys' for the prevention of non-communicable diseases recommended by the WHO[154]. Under the WHO *Global Action Plan for the Prevention and Control of Non-Communicable diseases 2013-2020*[155] member states endorsed a voluntary global target for a 30% relative reduction in mean population intake of salt/sodium.

Limiting salt/sodium intakes is recommended due to the well-recognised association between increased sodium intakes and elevated blood pressure. A diet high in sodium is the leading dietary risk factor for death and disease burden globally[156]. In Australia, a diet high in sodium was the sixth leading dietary risk factor for burden of disease, accounting for 0.7% of the total disease burden and 1.6% of total deaths in 2017. This was higher for New Zealand with a diet high in sodium the third leading risk factor for burden of disease, accounting for 1.5% of disease burden and 3.5% of deaths in the same year[157].

Sodium is predominantly found in salt, however, certain food additives also contain sodium and it can occur naturally in foods.

In Australia in 2011-12, the average daily amount of sodium consumed from food (i.e. excluding salt added by the consumer) for Australians aged 19 years and over was 2,430 mg (equivalent to around one teaspoon of table salt)[158]. This exceeds the 2017 NHMRC Suggested Dietary Target (SDT) of 2,000 mg and is likely to be an underestimate given that 64% of Australians reported they add salt very often or occasionally either during meal preparation or at the table[159]. In Australia, one-quarter (24%) of sodium came from cereal-based products and dishes (mainly from the mixed dishes where cereal is the major ingredient), 19% came from cereal and cereal products (mainly bread, 13%) and 19% from meat and poultry (mainly processed meat and mixed dishes)[160].

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[154] World Health Organization (WHO) (2017) *Tackling NCDs, Best buys*. Available at: https://apps.who.int/iris/bitstream/handle/10665/259232/WHO-NMH-NVI-17.9-eng.pdf;jsessionid=7BD836E477124A3F951AAA316956F5F1?sequence=1

[155] World Health Organization (WHO) (2013) *Global Action Plan for the Prevention and Control of Non-Communicable Diseases 2013-2020.* Available at: https://apps.who.int/iris/bitstream/handle/10665/94384/9789241506236_eng.pdf;jsessionid=E2419EF9D3852759369AFEADDB3F56D7?sequence=1

[156] GBD Diet Collaborators (2019) 'Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017', *The Lancet*, 393(10184), pp. 1958–1972. doi: 10.1016/S0140-6736(19)30041-8.

[157] Institute of Health Metrics and Evaluation (IHME) (2020), *Global Burden of Disease 2017*. Available at https://vizhub.healthdata.org/gbd-compare/

[158] Australian Bureau of Statistics (ABS) (2014) *4364.0.55.007- Australian Health Survey: Nutrition First Results- Foods and Nutrients, 2011-12* (Table 1.1). Available at: https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4364.0.55.0072011-12?OpenDocument

[159] Australian Bureau of Statistics (ABS) (2014) *4364.0.55.007- Australian Health Survey: Nutrition First Results- Foods and Nutrients, 2011-12.* Available at: https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4364.0.55.007~2011-12~Main%20Features~Sodium~715

[160] Australian Bureau of Statistics (ABS) (2014) *4364.0.55.007- Australian Health Survey: Nutrition First Results- Foods and Nutrients, 2011-12* (Table 10.67). Available at: https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/4364.0.55.0072011-12?OpenDocument

In New Zealand in 2008-09 the estimated mean usual daily sodium intake from 24-hour recall data (excluding salt added at the table) for adults aged 15 years and above was 2,564 mg[161]. This also exceed the 2017 SDT for sodium of 2,000 mg. The leading sources of sodium in the New Zealand diet identified in the 1997 National Nutrition Survey, were bread (25.7%), processed meats (10.3%), sauces (6.7%), potatoes and kumara (6.7%) breakfast cereals (5.8%)[162]. Sodium intakes in New Zealand may have decreased since this time with analysis comparing the changes in sodium content of New Zealand processed foods from 2000-2013 reporting modest progress with sodium reduction in some food categories[163]. Across nine key food groups the mean sodium content of all foods was 436 mg per 100g in 2003 and 433 mg per 100 g, with no significant difference in matched products over time. In seven of the nine food groups assessed reductions in mean sodium content were evident, although small sample sizes prevented significance testing. The largest reductions in sodium (for matched products) were observed for breakfast cereals (28%), canned spaghetti (15%) and bread 14%).

In 2016 researchers estimated reductions in the sodium content of packaged foods and other dietary sources required to meet the WHO sodium target of reducing mean population intake of salt by 30% by 2025 in New Zealand[164]. By linking household purchasing data with branded food product data, researchers estimated that a 36% reduction in the sodium content of packaged foods in conjunction with a 40% reduction in discretionary salt use and reductions in the sodium content of foods consumed outside the home would reduce New Zealand's salt intake by 35%. Key food categories identified for sodium reformulation included canned vegetables, bread, sauces, butter, margarine, bacon and hard cheese.

Assessment

Some countries have applied mandatory compositional limit for salt/sodium in foods. However, evidence suggests that a well-designed voluntary sodium reformulation program can also be effective in reducing the sodium content of the food supply[165,166 167]. Key design elements of effective reformulation programs included gradual reductions in targets to allow taste preferences to adapt, strong Government leadership and robust monitoring and reporting

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[161] McLean, R. M. *et al.* (2018) 'Spot urine and 24-h diet recall estimates of dietary sodium intake from the 2008/09 New Zealand Adult Nutrition Survey: a comparison', *European Journal of Clinical Nutrition*, 72(8), pp. 1120–1127. doi: 10.1038/s41430-018-0176-0.

[162] Russell, D. *et al* (1999) *NZ Food: NZ People .Key results of the 1997 National Nutrition Survey.* Wellington: Ministry of Health. Available at https://researchspace.auckland.ac.nz/handle/2292/34830

[163] Monro, D. *et al.* (2015) 'Changes in the sodium content of New Zealand processed foods: 2003–2013', *Nutrients*, 7(6), pp. 4054–4067. doi: 10.3390/nu7064054.

[164] Eyles, H. *et al* (2016) 'Achieving the WHO sodium target: estimation of reductions required in the sodium content of packaged foods and other sources of dietary sodium'. *Am J Clin Nutr*, 104:2;pp. 470-479 https://doi.org/10.3945/ajcn.115.125146

[165] Webster, J. *et al.* (2014) 'Target salt 2025: A global overview of national programs to encourage the food industry to reduce salt in foods', *Nutrients*, 6(8), pp. 3274–3287. doi: 10.3390/nu6083274.

[166] Trieu, K. *et al.* (2015) 'Salt reduction initiatives around the world-A systematic review of progress towards the global target', *PLoS ONE*, 10(7), pp. 1–22. doi: 10.1371/journal.pone.0130247.

[167] Charlton K, Webster J & Kowal P (2014), 'To Legislate or Not to Legislate? A comparison of the UK and South African Approached to the Development and Implementation of Salt Reduction Programs', *Nutrients,* 6(9); 3672-3695.

mechanisms. Complementary actions such as public awareness campaigns and food labelling are also important in supporting the success of voluntary reformulation actions[168].

In Australia, Wave 1 voluntary reformulation targets for sodium have been agreed for key foods which are major contributors to population sodium intakes such as bread, processed meat, sausages, crumbed and battered meat poultry and seafood, pizza, gravies and sauces, savoury biscuits, snacks and pastries, soups, sweet bakery products and cheese. Work towards setting a sodium target for breakfast cereals, powdered meal bases, ready meals and particular savoury snacks is still underway. Voluntary reformulation led by the New Zealand Heart Foundation has removed over 330 tonnes of salt per annum from the food supply in key categories. However, it is not known what impact this has had on sodium intakes.

The Healthy Food Partnership and the New Zealand Heart Foundation are currently not considering reformulation in the fast-food/quick-service restaurant sector. However, international reformulation work such as that in the United Kingdom, France and United States has considered this sector.

Many products sold through fast-food/quick-service outlets are 'cereal-based mixed dishes' (such as burgers and pizzas) which are the main source of sodium in Australians' diets. Other foods sold at fast-food/quick-service outlets are processed meat products (.e.g. chicken nuggets) which are also a major source of sodium for Australians.

Some fast-food/quick-service companies have taken voluntary action to reformulate their products such as reducing sodium, fat and sugar content of products, removing industrially produced trans fats, or reducing overall energy content. However, these actions are not occurring across the sector. As previously reported in this paper, a 2018 survey of nutrition policies and actions amongst Australian fast food/quick-service companies reported that out of eleven companies, five had taken action to reduce sodium content, five had taken action to reduce fat and sugar and three to reduce trans fats. The same survey in New Zealand reported that three out of the six quick service restaurants surveyed had some form of commitment on product reformulation.

A 2019[169] study examined the salt content of children's meals, meal components (e.g. burgers, wraps, and chicken nuggets), snacks and sides (e.g. fries) in selected Australian fast-food outlets. The study identified wide variability in the salt content of products, with some containing concerning levels of salt. For example, in the children's meals category, a Hungry Jack's 6 nugget kids pack contained 3.78 g salt which was equivalent to 108% of the maximum daily recommend salt intake for a 4-8 year old. The salt content of this meal was more than twice that of the McDonalds equivalent. High salt and wide variation in salt content was also reported for the other categories examined.

A 2018 study[170] on five-year trends in the sodium content of New Zealand's fast-foods (2012 to 2016) examined all products sold at ten major fast food chains. This found that across all

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[168] Charlton, K., Webster, J. and Kowal, P. (2014) 'To legislate or not to legislate? A comparison of the UK and South African approaches to the development and implementation of salt reduction programs', *Nutrients*, 6(9), pp. 3672–3695. doi: 10.3390/nu6093672.

[169]The George Institute for Global Health (2019) *Salt Levels in children's meal from four major fast food retailers, 2019*. Available at: https://www.georgeinstitute.org/sites/default/files/salt_levels_in_childrens_meal_key_findings_report_with_tables.pdf.

[170] Eyles, H. *et al.* (2018) 'Five year trends in the serve size, energy, and sodium contents of New Zealand fast foods: 2012 to 2016', *Nutrition Journal*. Nutrition Journal, 17(1), pp. 1–11. doi: 10.1186/s12937-018-0373-7

products (n=5468) significant increases were observed for sodium per serve (+55 (24 to 87) mg, +12%). Overall, there was no significant change in sodium density, however evidence of significant reductions in sodium density for individual products was observed, mainly driven by the burger's food group and by Burger King and Hell Pizza fast food chains. The researchers concluded that the lower sodium concentration in new and reformulated products had been offset by overall increases in serve size.

A 2010 analysis of salt levels in fast-food items in six countries reported variation in the salt content of the same product, with the United Kingdom tending to have products with a lower salt content compared to Australia and New Zealand. See Table 5 below.

Table 5: International comparison of salt levels in fast food[171].

Product	Australia	Canada	France	New Zealand	UK	United States
	Serving size; salt per serving (salt per 100g) g					
Burger King * Double Whopper	359; 2.9 (0.8)	373; 2.5 (0.7)	na	367; 2.7 (0.7)	355; 2.3 (0.7)	na; 2.7 (na)
Burger King * Cheese	213; 2.6 (1.5)	189; 2.4 (1.3)	na	187; 2.6 (1.2)	173; 2.4 (1.4)	na; 2.5 (na)
Domino's Hawaiian Pizza	65; 1.0 (1.5)	na	na	67; 1.0 (1.5)	70; 0.7 (1.0)	na
Kentucky Fried Chicken Zinger Burger	197; 3.0 (1.5)	na	207; 2.6 (1.2)	186; 3.1 (1.7)	na; 3.0 (na)	na
McDonalds Big Mac	200; 2.4 (1.2)	209; 2.6 (2.1)	221; 2.3 (1.0)	202; 2.7 (1.3)	214; 2.1 (1.0)	214; 2.6 (1.2)
McDonalds Chicken Nuggets	98; 1.1 (1.1)	114; 1.7 (1.5)	107; 1.3 (1.2)	88; 1.0 (1.1)	105; 0.6 (0.6)	95; 1.5 (1.6)
Pizza Hut Hawaiian Pizza	88; 1.3 (1.5)	84; 1.0 (1.1)	na	82; 1.1 (1.3)	73; 0.8 (1.1)	102; 1.5 (1.5)
Subway Club Sandwich	212; 1.8 (0.9)	240; 2.7 (1.1)	238; 1.3 (0.5)	220; 2.7 (1.2)	254; 2.3 (0.9)	247; 2.9 (1.2)

* known as "Hungry Jacks" in Australia

Another product category not currently under consideration in the Healthy Food Partnership is plant-based meat alternatives. This food category has grown in popularity and range in recent years. According to analysis by the George Institute for Global Health[172], there was a 153% increase in the number of these products available in Australia between 2010 to 2019, particularly falafels (380% increase), meat-free burgers (289% increase) and other meat-free products (187% increase). No sodium reformulation was observed in this food category with

[171] Dunford, E. *et al.* (2012) 'The variability of reported salt levels in fast foods across six countries: Opportunities for salt reduction', *Cmaj*, 184(9), pp. 1023–1028. doi: 10.1503/cmaj.111895 (page 1026).

[172] The George Institute for Global Health (2019) *Salt levels in meat alternatives in Australia (2010-2019).* Available at: https://www.georgeinstitute.org/sites/default/files/meat_alternatives_key_findings_report.pdf

average sodium content remaining stable between 2010 and 2019. When compared to sodium targets from the United Kingdom, 68% of meat-alternatives available in Australia met the United Kingdom sodium targets. When analysed by category, 83% of plain meat alternatives, 65% of other meat-free products, and 50% of meat-free bacon met United Kingdom sodium reduction targets. This analysis also identified wide variation in sodium content within particular types of meat-alternatives (e.g. falafels, tofu etc) and recommended sodium reformulation targets be established to encourage industry to reformulate products.

Conclusion

Given the major international focus on salt/sodium reformulation and WHO global target for a 30% reduction in mean population salt/sodium intakes, it is positive that the Healthy Food Partnership and New Zealand food reformulation activities have a major focus on sodium.

It is recommended that time be allowed to observe the impact and effectiveness of voluntary sodium reformulation activities Australia and New Zealand before any additional actions are taken to reduce sodium content of foods already subject to reformulation targets. It is recommended that progress against reformulation targets be assessed in 2 years to determine whether industry is on track to achieve the targets or whether there are particular product categories where industry's response is insufficient or ineffective.

However, this report has identified gaps in the coverage of the voluntary sodium reformulation activities. While reformulation targets for sodium have been agreed for foods such as pizza, burger patties and nuggets, this does not apply to foods sold through fast-food/quick-service venues. There is room for improvement in this industry sector to reduce the sodium content of foods such as nuggets, pizzas, burgers and fries. While it is possible that reformulation to reduce the sodium content of supermarket products may flow through to the fast-food/quick service sector if the same supplier provides items such as breads, nuggets and pizzas etc., the fast-food/quick service sector is a potential focus for further actions to improve the composition of the food supply.

In the first instance, it is recommended that the Healthy Food Partnership and New Zealand reformulation activities establish voluntary sodium reformulation targets for the fast-food/quick service sector. A second priority is for voluntary sodium reformulation targets to be established for meat-alternatives. If insufficient uptake or progress is not achieved within 2 years then actions to introduce mandatory compositional limits in this sector should be considered.

Positive foods

An article recently published in *The Lancet*[173] suggested that dietary polices focusing on promoting intake of positive components of diet for which current intake is less than optimal might have a greater effect than policies only targeting sugar and fat.

In 2017, a diet low in whole-grains was the leading dietary-risk factor for total burden of disease for both Australia and New Zealand. In Australia, the associated burden of disease was 2.2% (attributed to over 6,700 deaths) and 2.6% for New Zealand (attributed to almost 1,500 deaths).

[173] GBD 2017 Diet Collaborators (2019), 'Health effects of dietary risks in 195 counties, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017', *The Lancet,* 393(10184); 1958-1972.

Higher intakes of dietary fibre or whole grains are associated with reduced risk of mortality and the incidence of a number of non-communicable diseases and their risk factors[174]. Most of the evidence about this relationship relates to the fibre that naturally occurs in fibre-rich foods, rather than synthetic or extracted fibre which is added to processed foods to increase fibre content.

The NHMRC recommends Australian and New Zealand women consume 25g of dietary fibre per day, and men 30g per day as an adequate intake. For the prevention of non-communicable disease, women should aim for 28g of fibre per day and men 38g fibre per day.

The Australian Dietary Guidelines recommend that at least two thirds of grain/cereal products consumed should be wholegrain and/or high fibre varieties. In 2011-12 around one-third of all grain and cereal foods consumed by Australians were wholegrain or high fibre products. Men consumed a daily average of 25g of dietary fibre, and women 21g. This is below the adequate and optimal fibre recommendations by the NHMRC. Main sources of dietary fibre for Australian adults were cereals and cereal products (e.g. breakfast cereals and breads) (29.0%), vegetable products and dishes (20.0%), cereal-based products and dishes (e.g. biscuits, cakes and muffins) (14.6%), fruit products and dishes (14.4%).

The New Zealand Eating and Activity Guidelines also recommend consuming mostly wholegrain foods and those naturally high in fibre. In 2008-09, average dietary intakes for fibre for New Zealand adults was 20g a day, below the NHMRC recommendations. Only 10-14 % of adults usually consumed heavy grain bread, while 25-30% consumed white bread, and 50% light-grain breads[175].

Assessment

While higher intakes of fibre have many health benefits, these benefits have been associated with naturally occurring fibres (e.g. in wholegrains, fruits and vegetables) and may not necessarily be obtained through increasing fibre content of processed foods by adding synthetic fibre.

No examples of mandatory compositional limits for dietary fibre or wholegrains were identified internationally. However, there is evidence that reformulation of foods to increase wholegrain content has occurred internationally in response to increased recognition of the health benefits of wholegrains and advice to consume wholegrain foods[176].

Given that a diet low in grains is the leading risk factor for burden of disease in Australia and New Zealand, and current consumption is below adequate and optimal levels, increasing consumption of whole-grains will be important to improving population health outcomes. However, reformulation targets for positive nutrients such as wholegrains are not currently under consideration for voluntary reformulation activities.

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[174] Reynolds, E. *et al.* (2019) 'Carbohydrate quality and human health: A series of systematic reviews and meta-analyses', *The Lancet,* 393(10170), PP. 434-445. Doi: 10.1016/S0140-6736(18)31809-9

[175] New Zealand Ministry of Health (2015) *Eating and Activity Guidelines for New Zealand Adults,* Wellington: Ministry of Health. Available at: https://www.health.govt.nz/publication/eating-and-activity-guidelines-new-zealand-adults

[176] Mancino, L., Kuchler, F. and Leibtag, E. (2008) 'Getting consumers to eat more whole-grains: The role of policy, information and food manufacturers', *Food Policy,* 33(6); 489-496.

Conclusion

Given that Dietary Guidelines in Australia and New Zealand recommend grain and cereal foods consumed be predominantly wholegrain or high fibre varieties, behaviour change messages to promote wholegrain and foods naturally high in fibre should be better disseminated in the first instance. Voluntary industry-led labelling approaches exist to support consumers to identify wholegrain foods[177]. Better promotion of the benefits of wholegrain products may also increase consumer demand for these foods and encourage the food industry to voluntarily increase their products' wholegrain and content.

It is recommended that voluntary actions to increase wholegrain content of foods be pursued before mandatory compositional limits are considered. It is also relevant to note that compositional limits are usually set to minimise the level of a risk nutrient in a product, and may not be well suited to nutrients or ingredients where the goal is to increase the amount of that particular nutrient or ingredient.

Part 4: Recommendations and next steps

Work on improving food composition helps to improve the food environment. Other complementary activities occurring in Australia and New Zealand are the front-of-pack HSR labelling system, education, nutrition labelling and health promotion activities.

This Policy Paper has identified the following gaps in current voluntary actions in Australia and New Zealand to improve the composition of the food supply:

- There are no organised voluntary reformulation activities underway in the fast food/quick service sector despite (pre COVID-19) trends for increasing expenditure in Australian and New Zealand on foods at restaurants and ready-to-eat items. Some products in these outlets have significantly high levels of risk nutrients and there is limited industry-led action to improve food composition in this sector.
- There have been long running industry-led voluntary reformulation efforts to reduce the level of trans fats in the food supply. This has largely been successful, however, evidence indicates certain vulnerable population groups in Australia may continue to exceed recommended limits for intake of trans fats.
- There are voluntary efforts in place to reduce the sugar content of beverages such as soft drinks. However, industry is largely focussed on reducing average sugar content across the wider beverage category by producing more non-sugar beverages (e.g. water or artificially sweetened diet drinks) rather than reducing the sugar content of traditional 'full sugar' products. Despite reductions in consumption of sugary drinks, traditional 'full sugar' products are still more popular than diet drinks. International examples demonstrate that the sugar content of 'full sugar' beverages can be lower.
- Meat-alternatives are a food category that is growing in popularity. Sodium levels in some of these products are high and there is large variation in sodium content across the category. Limited industry led reformulation has been observed.

Recommendations

In light of the above, it is recommended that:

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[177] Grains & Legumes Nutrition Council (2017) *Grains & Legumes Nutrition Council Code of Practice for Whole Grain Ingredient Content Claims*. Available at: https://www.glnc.org.au/wp-content/uploads/2013/12/GLNC-Code-of-Practice-for-Whole-Grain-Ingredient-Content-Claims-2017.pdf.

- A systems approach be pursued to strategically position the Food Regulatory System to support voluntary initiatives, such as the Australian Healthy Food Partnership. Such an approach should ensure time is allowed for the food industry to demonstrate achievements against voluntary reformulation targets for saturated fat, sodium and sugar (in foods) before regulatory options are pursued. It is recommended that as a minimum, progress against Healthy Food Partnership reformulation targets be assessed in 2 years to determine whether industry is on track to achieve these targets or whether there are particular product categories where industry response is insufficient or ineffective.
- Additional voluntary reformulation targets be established for the quick service/fast food sector (for sodium, saturated fat and sugar as appropriate), and for meat alternatives (sodium). If voluntary reformulation is not effective then further regulatory options could be considered. As above, it is recommended that progress against reformulation targets be assessed 2 years after targets are established to determine whether industry is on track to achieve the targets or whether there are particular product categories where the industry's response is insufficient or ineffective. If industry engagement is lacking, then regulatory options may need to be considered before the two-year period.
- Given the outlined shortfalls in existing voluntary reformulation efforts for trans fats and sugary drinks, additional options should be explored to improve the composition of the food supply for these nutrients/food categories by progressing work through Food Regulation Policy Framework. These would be progressed as two separate pieces of work and used as a case study for informing the development of a systems approach which takes a strategic view on policies and procedures in relation to food composition in Australia and New Zealand, and the regulatory and non-regulatory options available to improve composition when voluntary measures do not sufficiently support public health outcomes

Next steps

The next steps for this for progressing the recommendations in this paper are:

Voluntary reformulation- The Food Regulation Standing Committee to recommend the Forum write to the Australian Healthy Food Partnership and representatives from the New Zealand Food Industry to recommend that voluntary reformulation targets be established for the fast food/quick service sector and processed meats. Continued engagement between the Forum and these voluntary reformulation activities should be proposed to identify roles and responsibilities including the monitoring of progress in the implementation of new and existing reformulation targets and identification of areas where voluntary reformulation is and is not supporting improvements in public health outcomes and where the Food Regulatory System can support with consideration of mandatory approaches.

Work to progress through the Food Regulation Policy Framework- To inform the development of a systems approach to implement effective strategies across the food system to improve the composition of processed foods, two case studies on sugary drinks and trans fats should be co-progressed. Options to improve the composition of the food supply in relation to sugary drinks and trans fats will be explored through the Food Regulation Policy Framework as two separate pieces of work. The work on sugary drinks would be the priority task.

As part of this next step an impact analysis would be undertaken. Issues to be explored would include risks such as potential food safety issues associated with changing food composition (i.e. as sugar can have preservative proprieties and reducing sugar may increase microbiological risks), impacts of potential alternative ingredients that may be used in place

of trans fats or sugar, and potential trade and economic impacts if mandatory compositional limits were introduced.

A ‘Statement of the Problem’ to guide the work progressing through the Food Regulation Policy Framework is provided at Appendix 4.

Appendix 1

Compositional limits internationally[178]

Country	Compositional limits
Argentina	Salt- Mandatory maximum levels of sodium permitted in meat products and their derivatives, breads and farinaceous products, soups, seasoning mixes and tinned food. Also applicable to salt levels in restaurant dishes. Introduced in 2013, for implementation in 2014 or 2015 depending on the size of the business. Trans-fats- Trans fat content must not exceed 2% of total vegetable fats in oils and margarines, and 5% of total fat in all other food. Introduced in 2010 for implementation in 2014.
Austria	Trans-fat- Limit on trans fats of 2g per 100g of a food item. If a food product is composed of various ingredients, the limit of trans fats is 4g per 100g if the total fat content of the product is less than 20%, and 10g per 100g if the total fat content of the food product does not exceed 3%. The regulation is not applicable to trans fats of animal origin. Introduced in 2009.
Belgium	Salt- 2% maximum salt content in bread since 1985.
Bulgaria	Salt- Mandatory maximum salt levels for breads, cheese, meat and poultry products, and lutenica (vegetable relish on tomato base).
Canada	Trans-fat- Partially Hydrogenated Oils (PHOs) are included in the List of Contaminants and Other Adulterating Substances. This List is incorporated by reference in the Food and Drug Regulations, meaning that it has the force of law. This means that food producers, including manufacturers, restaurants and cafeterias, are not able to add PHOs to food products sold in Canada. The prohibition came into effect on 17 September 2018.
Colombia	Trans fat- Limit on the content of trans fat in fats, vegetable oils and margarines that are sold directly to the consumer. Those products cannot exceed 2g of trans fat per 100g of fat. The trans fat content of fats and oils used as raw material or in bakeries, restaurants or catering services cannot exceed 5g of trans fat per 100g of material grease. The trans fat content naturally present in animal fats or dairy products are not subject to the restrictions. Introduced on 30 August 2012.
Chile	Trans-fat- The content of trans fats of industrial origin should not exceed 2% of total fat content in all products. This regulation is now fully in force, following a five year implementation period.
Ecuador	Trans-fat- Limit the amount of trans fats that edible oils, margarines and confectionery products can have, both sold directly to the consumer and for those used as raw material and inputs in the food industry (e.g. bakeries, restaurants or food services (catering). The limit established for these products is 2g of trans fat per 100g of fat. Introduced in 2013.
Greece	Salt- Mandatory maximum levels of salt permitted in bread, tomato juice and tomato concentrates/purees, in place since 1971.
Hungary	Salt- Maximum salt levels in bread: <1.67g salt/100g bread from 1 January 2015 and <1.57g salt/100g bread from 1 January 2018.

[178] World Cancer Research Fund (WCRF), (n.d). *Nourishing and Moving Policy Database.* Available at https://policydatabase.wcrf.org/

Country	Compositional limits
	Trans fat- Limit of 2g trans fat per 100g of total fat content. In the case of processed multi-ingredient food, the limit depends on the percentage total fat content: food containing less than 20% total fat have a trans fat limit of 4g per 100g of fat; for food containing less than 3% total fat the trans fat limit is 10g per 100g. Introduced in 2013.
Iceland	Trans fat - limit of 2g per 100g of total fat content
India	Trans fat- Maximum permitted amount of 5% for trans fat content in edible fats and oils, including hydrogenated vegetable oils, margarine and fat spreads. Came into effect in 2017 (previous limit was 10%).
Iran	Salt- Limits on salt content of select food groups, including snacks (1.5%); canned tomato paste (2%); potato chips (1%) and bread (1.8%). Trans fat- Limit of <2% trans fat content for corn oil, palm oil, frying oil and mixed liquid oils. Compliance required by 2016.
Latvia	Trans fat- Limits the content of trans fats in food items to 2g per 100g of the total fat. Applies to products produced and/or sold in in Latvia, including those in public catering establishments. In products where total fat content is less than 3%, trans fat may not exceed 10g per 100g of total fat content, and where total fat content is between 3–20%, trans fats may not exceed 4g per 100g of total fat content. Compliance required by 2018.
Netherlands	Salt- Limits of 1.8g salt per 100g dry matter for bread since 2013. The maximum level of salt in bread has gradually decreased over time (2.5% in 2009, 2.1% in 2011, 1.9% in 2012).
Norway	Trans fats- Sale of fats or food with fats that contains more than 2g of trans fats per 100g of fat prohibited, in effect since January 2014. The regulation does not apply to naturally occurring trans fats.
Paraguay	Salt- Mandatory reduction of 25% of salt content in wheat flour used in widely consumed breads and farinaceous products (from 2g salt/100g to 1.5g salt/100g), introduced in 2013.
Peru	Trans fats- Limits on the use and / or content of trans fats of 2 g/100 g or 100 ml for fats, vegetable oils and margarines or 5g/100g or 100ml for other foods and non-alcoholic beverages processed industrially. The regulations apply to anyone who commercialises, imports, supplies and manufactures industrially processed foods intended for human consumption, as well as to the advertisers of those products. In place since 2017.
Portugal	Salt- Maximum level of salt in bread at 1.4g/100g, since 2009. From 2019 this will progressively reduce down to 1.0g/100 g by 2020. Trans fats - Less than 2g per 100g of product since 2018
Singapore	Trans fats- Limit of 2% on trans fats in pre-packaged edible fats and oils for sale or for use as an ingredient in the preparation of food. Came into effect on 2 May 2012.
South Africa	Salt- Mandatory limits on salt in a range of food products, including bread, breakfast cereals, margarines, snack foods, meat products and soup mixes introduced in 2016 and a second lower set of targets were introduced in 2019. Trans fats- Sale, manufacturing and importation of any oils or fats, alone or as part of processed food, that exceed 2g per 100g of oil or fat is prohibited. This applies to retail, catering businesses, restaurants, institutions and bakeries. The regulations came into effect in August 2011.

Country	Compositional limits
Switzerland	Trans fats- In 2008, Switzerland set a limit on trans fats of 2g per 100g of vegetable oil or fat, with a one-year entry period.
Thailand	Trans fats- Sale, production and importation of partially hydrogenated oils (trans fats) and food products containing partially hydrogenated oils prohibited. In effect since January 2019.
Turkey	Trans fats- In May 2020 Turkey announced regulations limiting the amount of industrially produced trans fats allowed in foods. Foods intended for the final consumer and retail must contain no more than 2g of trans fats per 100g of fat.
United States	Trans fats- In June 2015, the US Food and Drug Administration (FDA) determined that partially hydrogenated oils (PHOs), the primary source of trans fats, are not "generally recognised as safe (GRAS)" for any use in food. Food manufacturers had three years to remove PHOs from products. As of 18 June 2018, food manufacturers and restaurants are no longer allowed to produce foods that contain PHOs.

Appendix 2

Healthy Food Partnership sodium targets compared to international levels[179]

* HFP reformulation targets were compared to mandatory targets in South Africa, Argentina, Belgium (bread only), Bulgaria (bread only), Portugal (bread only) and voluntary targets in Canada, Brazil, UK, Americas (Pan America Health Organization (PAHO).

Category	Sodium targets (per 100g/ml)	
	Healthy Food Partnership (HFP)	**Comparison of HFP targets to international voluntary and mandatory targets***
Breads	380mg (Leavened), 450mg (Flat bread)	Range: 380mg to 530mg. HIGHER, apart from South Africa (380mg) which is equal. Range: 350mg – 588mg HIGHER, the PAHO's lower target (400mg) is still higher. LOWER in UK (350mg).
Processed meats	1005mg (Ham, bacon), 720mg (Processed deli meat), 900mg (frankfurters, saveloys)	LOWER in South Africa (uncured 650mg, cured 850mg, frankfurters and saveloys 870mg). Much HIGHER in Argentina (1190mg cooked meats, 1900mg dried meats). Range: 650mg (ham) to 1900mg LOWER in the UK (650mg ham, 550-600mg frankfurters and saveloys), PAHO (lower target 690mg) and Canada (870mg frankfurters and saveloys). All others HIGHER, including significantly HIGHER for Americas (1900mg, dry cured meats) and Canada (1400mg).
Sausages	540mg	Range: 550mg to 1500mg, all HIGHER.
Pizza	450mg	-
Gravies and sauces	450mg (gravies, finishing), 720mg (pesto), 680mg (Asian), 360mg (other)	Significantly HIGHER in South Africa (1500mg). LOWER in UK for pestos (550mg) and gravies (380mg).
Soup	280mg	HIGHER in Argentina (306-430mg) LOWER in UK (250mg). HIGHER for Americas (306-360mg)
Savoury Pastries	500mg (dry), 400mg (wet)	SIMILAR in UK for pies (450mg), pasties (400mg) and other meat pastries (300mg), although difficult to compare categories.
Cheese	450mg (Cheddar), 1270mg (Processed)	Significantly HIGHER in UK (700mg) and Canada (2530mg) for cheddar. Significantly LOWER for processed cheese in UK (800mg).
Sweet bakery	360mg (Cakes, muffins and slices)	Range: 204mg – 400mg. LOWER targets for most international examples
Savoury biscuits	630mg (plain), 270mg (plain corn/rice), 720mg (flavoured)	Range: 700mg to 930mg. HIGHER for most international examples.
Savoury snacks	500mg (potato), 720mg (extruded, pelleted), 450mg (vegetable/ grain/ other)	HIGHER for South Africa potato chip category (550mg) and Argentina's overall limit (940-952mg). South Africa's general limit (700mg) is SIMILAR to HFP extruded and pelleted snacks limit, however HIGHER for HFP vegetable, grain and other snacks limit.

[179] Blue = mandatory compositional limits, Purple = voluntary reformulation targets

Category	Sodium targets (per 100g/ml)	
	Healthy Food Partnership (HFP)	**Comparison of HFP targets to international voluntary and mandatory targets***
		All HIGHER apart from the PAHO lower limits (530mg potato and extruded corn, 700mg biscuits and crackers). HIGHER examples include UK for potato chips (580mg) and extruded and pelleted snacks (850mg), and Canada for chips, popcorn and extruded corn (880mg) and pretzels/snack mix (1400mg).
Crumbed, battered proteins	450mg (meat, poultry), 270mg (seafood)	Much HIGHER in Argentina for meat and poultry (736mg) All HIGHER. Significantly HIGHER for Canada (560mg - seafood) and Americas (470-735mg meat and poultry).

Appendix 3

New Zealand's Heart Foundation Food Reformulation Program Targets and Progress

August 2020

The following table summarises the food categories/sub-categories, nutrient targets, implementation timeframes and progress. Forty-eight targets for sodium, saturated fat and/or total sugar reduction have been set for 38 food categories/sub-categories.

Category	Nutrient Target (maximum)	Timeframe	Progress[180]
Bread	**Sodium** **Leavened bread** 380mg/100g **Unleavened bread** 450mg/100g	Targets reset Aug 2018; target review Dec 2022	2007-2008: Many companies did large reductions of around 20% to meet the target 450mg/100g. 2014: over 80% market share (by sales volume) met the 450mg target. Target was rest to 400mg/100g. 2017: an additional 4.8% reduction had been achieved across the category. 73% market share (by sales volume) met the 400mg target. Over 176 tonnes of salt per annum removed from this category (2007-Dec 2017).
Breakfast Cereals	**Sodium** **Puffed rice & corn flakes** 500mg/100g **Oat based muesli, porridge** 200mg/100g **Biscuits** 300mg/100g **Other Ready-to Eat cereals** 400mg/100g **All breakfast cereals** **Total Sugar** 22.5g/100g OR 20% reduction for products significantly over 25g/100g	Targets reset Aug 2016; target review Aug 2021	2010: Targets set 2016 review: over 80% market share met the 2010 sodium targets. Over five years (2010-2016) there was around a 25% reduction in breakfast cereals largely due to large reductions being made in rice bubble, cornflake and other children's styled cereals. Our research looking at changes in the sodium content of breakfast cereals over a 10-year period (2003 – 2013) indicated that some children's cereals had on average a 33% reduction in sodium levels. From 2010 – 2016 an estimated 27 tonnes of salt per annum removed across the category. Aug 2016: Sodium targets reset and sugar target set. Interim highlight (since target reset 2016): 12 cereals by 2 companies have had a 16-35% reduction in sugar content.
Processed Meats	**Sodium** **Sausages** 650mg/100g **Bacon** 1090mg/100g **Ham** 1090mg/100g	Targets reset Dec 2015; Target review Dec 2020	2011: Targets set 2015 review: over 80% market share of sausages met 800mg/100g (2011 target). Over 1 year (2015-2016) two manufacturers, reduced the average sodium levels by 12% across 30 products. This is equivalent to over 13 tonnes of salt per annum removed. Over 50 tonnes of salt per annum removed from this category (2011-2016).

[180] Progress information has not been verified by the New Zealand Ministry of Health.

Category	Nutrient Target (maximum)	Timeframe	Progress[180]
			Interim highlights (since 2015): one major company achieved 100% compliance in bacon products (n=7); another major company achieved between 19-22% sodium reductions in sausages.
Savoury Pies	**Mince/Steak** **Sodium** 400mg/100g **Saturated fat** 5g/100g **Mince & cheese/steak & cheese** **Sodium** 400mg/100g **Saturated fat** 7g/100g	Targets set 2012; Review to be confirmed	Over 10 tonnes of salt per annum removed from this category since target set 2012.
Soups	**Sodium** **All soups** 280mg/100g OR 20% reduction for products significantly over 280mg/100g.	Target reset Aug 2017; Target review Aug 2022.	2016 review: 11% sodium reduction in matched reformulated pairs. 2.4 tonnes salt removed (2014-2016). Interim highlight – one company reformulated 11 products, achieving median 5.9% sodium reduction; another company has 100% compliance
Cheese	**Sodium** **Cheddar and cheddar-style** 710mg/100g **Mozzarella cheese** 550mg/100g **Processed cheese** 1270mg/100g OR 10-15% reduction in products significantly above 1270mg/100g	Targets set 2014; Review to be confirmed	
Savoury Snacks	**Sodium** **Potato & other vegetable crisps** 520mg/100g OR 15% reduction for products significantly above target **Extruded/pelleted snacks** 770mg/100g OR 15% reduction for products significantly above target **Sheeted/reformed snacks** 520mg/100g OR 15% reduction for products significantly above target **Popcorn**	Targets reset 2019; Target review May 2024.	2014: Average and maximum targets set. 2018 review: Three categories had over 90% of their SKUs below the maximum sodium targets; the exception being extruded snacks (81%). Based on the top selling SKUs (80% sales volume), the average sodium for each of the 4 categories met the average target. There has been between 10% and 32% reduction in the median sodium content for each of the four categories of snacks (April 2014 - April 2018). This takes into account product reformulation, product deletion and new product development. Based on sodium reduction in matched pairs of products, almost 11 tonnes of salt have been removed from reformulated snacks since 2014.

Category	Nutrient Target (maximum)	Timeframe	Progress[180]
	390mg/100g OR 15% reduction for products significantly above target **Salt and vinegar snacks** 740mg/100g OR 15% reduction for products significantly above target **Sugar** **Popcorn** 25g/100g OR 15% reduction for products significantly above target		2019: The reset sodium targets represent 26-38% reductions from the previous targets set in 2014.
Cooking Sauces Pasta, Indian-style and other sauces which are a major characterising component of a meal	**Sodium** 380mg/100g OR 15% reduction for products significantly above 380mg/100g **Total Sugar** 5g/100g OR 15% reduction for products significantly above 5g/100g	Targets reset June 2018; Target review June 2023	2014: Targets set 2017 review: Pasta/Indian sauces: 77% (by sales volume) met 420mg target; 11%-13% reduction in mean sodium across categories. But of the companies that make up 70% Asian sauces: 50% (by sales volume) met the 680mg target. Total 6.3 tonnes salt removed per annum from matched pairs (also includes reformulation of Asian sauces) 2014-2017.
Asian sauces	**Sodium** 680 mg/100g OR 15% reduction for products significantly above 680mg/100g. **Total Sugar** 20g/100g OR 15% reduction for products significantly above 20g/100g	Targets reset Aug 2016; Target review Aug 2021	2017 review: see above. Interim highlight (2020): One company reformulated 9 sauces achieving 8% median sugar reduction, 10% median sodium reduction.
Gravies & Finishing Sauces	**Sodium** 450mg/100ml OR 15% reduction for products that are significantly above 450mg/100ml	Target set June 2020; Target review June 2024	N/A – new target
Powdered Meal Bases	**Sodium** 5000mg/100g OR 15% reduction for products significantly above 5000mg/100g	Targets set Dec 2017; Target review Dec 2022	Interim highlight (as at 2019): One major company has 100% compliance (n=12 products).
Edible Oil Spreads **Margarine/oil-based spreads**	**Sodium** 400mg/100g	Target set 2014; Review to be confirmed	
Savoury Crackers	**Sodium** **Plain crackers** 610mg/100g **Flavoured crackers** 800mg/100g	Targets reset 2017; Target review June 2022	2014: Targets set 2016 review: 10.5% reduction in category median sodium. 7.2 tonnes salt removed from reformulation of matched pairs. 77% (by sales volume) of the top-selling 40 products met the 2014 targets. Interim highlight (since 2017): one company compliance to new targets has increased from 53% to 74%.

Category	Nutrient Target (maximum)	Timeframe	Progress[180]
	Rice crackers and corn crackers 610mg/100g OR 20% reduction for products significantly above targets		
Table Sauce **Tomato Sauce**	**Sodium** 680mg/100g OR 15% reduction for those significantly above target **Total Sugar** 23g/100g OR 15% reduction for products significantly above target	Targets set May 2016; target review May 2021	
Canned Baked Beans	**Sodium** 350mg sodium/100g **Total Sugar** 5g sugar/100g	Targets set May 2016; target review May 2021	Interim highlights: one new product achieved 50% less added sugar and 30% less sodium than standard product. Another company has 100% compliance for both sodium and sugar.
Canned Spaghetti	**Sodium** 350mg/100g **Total Sugar** 4.5g/100g	Targets set May 2016; Target review May 2021	Interim highlight: 2 major companies have 100% sodium compliance.
Cereal and Nut/Seed Bars	**Total Sugar** 25g/100g OR 15% reduction for products significantly above target	Target set May 2017; Target review May 2022	Interim highlight (2020): One major company (n=39 products) compliance increased from 40% at baseline to 85%; 16 products reformulated achieving 27% median sugar reduction.
Dairy Yoghurt & Dairy Foods	**Total Sugar** 8.5g/100g OR 15% reduction for products significantly above 8.5g/100g	Target set Feb 2018; Target review Feb 2023	Interim highlight: 40% reduction in added sugar across a top selling range (n=33products) by 1 company. New products (n=5) in another company are all compliant.
Flavoured Dairy Milk	**Total Sugar** 7.0g/100ml OR 10% reduction for products that are significantly above 7.0g/100ml	Target set April 2018; Target review April 2023	Interim highlight: 30% reduction in added sugar of top selling range (n=13 products) by 1 company.
Crumbed/ Battered Proteins	**Sodium** **Meat and Poultry** 450mg/100g OR 15% reduction for products significantly over 450mg/100g **Seafood** 270mg/100g OR 15% reduction for products significantly over 270mg/100g.	Target set Dec 2019; Target review Dec 2023	N/A – new target
Ready Meals	**Sodium**	Target set July 2020;	N/A – new target

Category	Nutrient Target (maximum)	Timeframe	Progress[180]
	250mg/100g OR 15% reduction for products significantly over 250mg/100g	Target review July 2024	
Pizzas	**Sodium** 450mg/100g OR 15% reduction for products significantly above 450mg/100g. **Saturated Fat** 4g/10g OR 15% reduction for products that are significantly above 4g/100g.	Target set June 2020; Target review June 2024	N/A – new target

Appendix 4

Statement of the problem agreed by Food Regulation Standing Committee (FRSC)

The nutritional composition of processed foods (both packaged and unpackaged foods and drinks, including those sold at quick service restaurants) is typically high in unhealthy fats, sugars and sodium/salt. Excess consumption of these foods and drinks can contribute to overweight and obesity, and diet-related chronic diseases.

A strategic, co-ordinated approach is needed to implement effective strategies across the food system to improve the composition of processed foods. The Australia and New Zealand Ministerial Forum on Food Regulation (the Forum) recognises voluntary measures to improve food composition to support public health objectives to reduce chronic disease related to overweight and obesity, unless there is a demonstrated need to consider regulatory measures. The Forum recognises the current voluntary activities occurring in Australia through the Healthy Food Partnership and in New Zealand through the Heart Foundation reformulation program.

In the event that voluntary efforts to improve food composition are not effective (for example, through lack of industry engagement, insufficient achievement of voluntary targets or inequalities in access to reformulated products) in supporting public health outcomes, consideration of additional regulatory and non-regulatory approaches is warranted. A systems approach[181] is required in identifying potential failures in voluntary efforts and considering additional regulatory and non-regulatory options to improve population health outcomes in a timely and agile manner.

Two areas have been identified as case studies for a systems approach where population health would benefit from consideration of additional options to improve the composition of the food supply. These are sugary drinks and trans fat.

To inform the development of a systems approach to implement effective strategies across the food system to improve the composition of processed foods, two case studies on sugary drinks and trans fats will be co-progressed. Sugary drinks and trans fats will be progressed through Gateway 1 of the Food Regulation Policy Framework to understand and identify approaches within the food regulation system to improve food composition. These case studies will inform a systems approach in relation to food composition in Australia and New Zealand which takes a strategic view on policies and procedures on this issue.

Specific definitions of the problem for these nutrients/ingredients are described below:

- Sugary drinks - Excess consumption of sugars is associated with dental caries, unhealthy weight gain and associated chronic conditions. Over half of Australians and New Zealanders exceed recommended limits for consumption of sugars, with sugary drinks being a major contributor to sugar intakes. The amount of sugar in sugary drinks varies considerably internationally and domestically in similar products indicating there is scope to further reduce sugar. While there are voluntary reformulation actions in the beverage category, these have largely focussed on reducing sugar content across the beverage category by producing more bottled water or artificially sweetened drinks and not necessarily reformulating 'full sugar' products.

[181] An approach that considers the broad elements of the food system, both within the food regulation system as well as and voluntary initiatives.

- Trans fats - Excess consumption of trans fats increases the risk for cardiovascular disease. Trans fats intakes are within recommended limits for the majority of consumers in Australia and New Zealand, however evidence indicates vulnerable populations in Australia may be exceeding recommended trans fat consumption limits. Voluntary efforts to remove or reduce trans fats in the food supply have been largely successful. Despite this, some food products still contain trans fats, at levels above international compositional limits in some instances. These products are likely to contain industrial trans fats.