State of the Food Supply

New Zealand 2019

THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

MEDICAL AND HEALTH SCIENCES
SCHOOL OF MEDICINE


#21

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Cite this report as:
Mackay S, Ni Mhurchu C, Swinburn B, Eyles H, Young L, Gontijo de Castro T. 2019. State of the Food Supply: New Zealand 2019. The University of Auckland, Auckland, New Zealand.

Published in August 2019 by the University of Auckland

ISBN – 978-0-473-49151-2

Executive Summary

A poor diet is a leading cause of early death in New Zealand accounting for nearly 20% of illness and premature death in 2017[1] . Key inadequacies with the NZ diet are the low consumption of fruit, vegetables, whole grains, legumes, nuts and seeds combined with excess intake of foods high in sodium and added sugar[1]. The majority of foods eaten in high-income countries like NZ are processed or pre-prepared by the food industry[2]. The widespread manufacture, marketing and consumption of unhealthy processed and pre-prepared foods and beverages is the primary reason why New Zealanders consume excess quantities of energy, saturated fat, sugar and salt. The Government and food manufacturers have an important role to play in creating healthier food environments and contributing to efforts to improve population diets.

The goal of this "State of the Food Supply" report is to support government, business and community efforts to help New Zealander's eat better diets. This is the first annual 'snapshot' of the state of the NZ packaged food supply. The report highlights the nutritional composition of key NZ packaged food and beverage products providing a baseline scenario to be compared overtime with future snapshots, thus monitoring the food composition of packaged food supply.

Approach

The Nutritrack database is an annual inventory of all packaged food and beverage products displaying a Nutrition Information Panel and available for sale in four major NZ supermarket chains. The major manufacturers for inclusion in this analysis were identified by matching the brand recording in Nutritrack with the company of manufacture. There were 19 packaged food manufacturers that sell approximately 67% of all packaged foods and three beverage manufacturers that sell approximately 77% of all non-alcoholic beverages in New Zealand[3].

Assessment of nutritional quality

Four indicators of nutritional quality were assessed:

- *Health Star Rating (HSR) - Products were classified as 'healthy' if the HSR was 3.5 or above.*
- *Australian Dietary Guidelines - The Australian Dietary Guidelines classify foods as Core (foods that form the basis of healthy diets) and Discretionary (foods that are nutrient-poor and not necessary for a healthy diet).*[4, 5]
- *Level of processing - The NOVA classification framework groups foods according to the extent and purpose of the processing applied during manufacture: 'unprocessed or minimally processed foods', 'processed culinary ingredients', 'processed foods' and 'ultra-processed food and drink products'*[6].
- *Nutrient composition – Energy, saturated fat, total sugar, sodium.*

The healthiness of food categories

- *The healthiest major food category according to HSR score was packaged fruit and vegetables with a mean HSR of 3.9, and 78% of packaged fruit and vegetable products had an HSR ≥3.5.*
- *The healthiest minor food categories according to HSR score were: bread, breakfast cereals, couscous, pasta, rice, milk, nuts, fruit and vegetables, meat alternatives. These categories were mainly core products though the proportion of foods that were ultra-processed varied from 0% of nuts and seeds to 97% of bread products.*
- *The least healthy minor food categories according to HSR score consisted of foods with high levels*

of added sugars (biscuits; cakes, muffins and pastries; jams and marmalades; desserts; ice-cream; snack foods) and added sodium (noodles; processed meat; mayonnaise and salad dressings; sauces; snack foods). Most of these products were classified as discretionary and ultra-processed,

- *Non-alcoholic beverages generally had a low HSR (mean 2.3) and were classified as discretionary (62%) and ultra-processed (85%). Fruit and vegetable juices and waters (flavoured and plain) had a higher mean HSR (3.4, 3.3 respectively) than soft drinks, energy and electrolyte drinks.*
- *Fruit and vegetable juices and energy drinks had the highest mean sugar content of the ready-to-drink non-alcoholic beverages (9.4ml/100ml, 7.4ml/100ml). The category of fruit juices also includes fruit drinks with added sugar.*

Product portfolio healthiness for leading manufacturers

- *The healthiness of the product portfolio of both retailers (Woolworths NZ and Foodstuffs) had similar characteristics, both had a mean HSR of 3.0 with approximately half of their products classified as core foods and approximately 60% were ultra-processed.*
- *The three manufacturers with the highest mean HSR were: Sanitarium (4.1), McCain Foods (3.9) and Sealord (3.8). The three manufacturers with the smallest percentages of discretionary foods in their portfolios were Sealord (1.1%), Sanitarium (11%) and Dairyworks (14.1%).*
- *All the products of Bluebird Foods (snack foods) were classified as discretionary. Mondelēz (chocolate), Griffin's Foods (biscuits) and Hellers (processed meat) had at least 87% of products classified as discretionary.*
- *Dairyworks had the lowest proportion of ultra-processed products (11%). All other manufacturers had at least half of products classified as ultra-processed with half of manufacturers having at least 90% of products classified as ultra-processed.*

Conclusion and Recommendations

Unhealthy diets and obesity are two of the biggest modifiable health risks in New Zealand. Consumers need a food environment that enables them to follow a healthy eating pattern based mostly on whole foods and less processed foods low in added sugar and salt. While many of the packaged foods and beverages available in NZ are excessively energy dense and high in salt, saturated fat and sugar, some companies are providing healthier and less processed products. Government leadership is now required to makes substantive gains across the food supply with targets for reformulation and mandatory Health Star Ratings. The NZ food and beverage industry has a responsibility to improve the healthiness of what it manufactures and make it easier for their customers to identify the healthier options available. There are multiple, highly plausible ways that industry could achieve this through better labelling, benchmarking, reformulation and marketing of foods and beverages. Actions that improve the quality of the NZ food supply have the potential to reduce overweight, obesity and premature death and disability amongst millions of New Zealanders including disadvantaged groups.

Government should require mandatory on-pack **labelling** of all foods and beverages with a Health Star Rating label and the data required to calculate the HSR – ***consumers have the right to know about the healthiness of the foods they are purchasing.***

Government must set **targets** for voluntary reformulation of composition (salt, sugar, saturated fat) for key food groups – ***real action across the whole food supply will be the most effective way of curbing the epidemic of obesity and diet-related ill health blighting New Zealand.***

Food manufacturers (including retailers with own brand products) should **benchmark** the nutrient composition of their portfolios against best-in-category equivalents for levels of energy, saturated fat, sugar and sodium. Manufacturers could increase the proportion of minimally processed foods in their portfolio, such as whole grains, vegetables and fruit – ***food manufacturers must take responsibility for the healthiness of all the foods they are making and marketing.***

Food retailers should continue to take an active role in improving the healthiness of the NZ food supply. Retailers could set minimum requirements for the healthiness of the foods they stock and promote in-store and could require the HSR for products on their shelves – ***as the gatekeepers to NZ food purchases, retailers have the opportunity to help every New Zealander buy healthier.***

Background

Comprehensive systematic analysis conducted by the Global Burden of Disease study indicated that, in 2017, globally, the consumption of almost all healthy foods and nutrients was suboptimal whereas the intake of unhealthy foods exceeded the recommended level. The burden of disease attributable to dietary factors among adults aged 25 years or older was 11 million deaths and 255 million disability adjusted-life years (DALYs)[1,7]. High intake of sodium and low intakes of whole grains and fruit counted for more than half of all diet-related deaths and two-thirds of diet-related DALYs[1].

A poor diet is a leading cause of early death in New Zealand (NZ), accounting for nearly 20% of deaths in 2017[8]. Many of the other common causes of death are related to poor diet, such as high blood pressure, plasma glucose, body mass index, and cholesterol[1]. Key inadequacies with the NZ diet are the low consumption of fruit, vegetables, whole grains, legumes, nuts and seeds combined with excess intake of foods high in sodium[1]. The NZ Eating and Activity Guidelines provide sensible advice about how to promote health and well-being by making food choices based upon fresh and minimally processed nutritious foods[9].

The majority of foods eaten in developed countries are processed or pre-prepared by the food industry[2]. In 2018, packaged food sales in NZ grew by 3.7%[3] and in 2017 the volume of non-alcoholic beverages grew by 1.3% with growth higher in bottled water rather than soft drinks, while population growth was 1.9%[10] . Three-quarters of packaged food sales in NZ are from supermarkets which also provide an increasingly large range of own-brand products[3]. Own-brand labels hold a strong presence in NZ supermarkets accounting for 11% of the retail value of packaged food[3].

Food manufacturers and retailers have an important role to play in creating healthier food environments and contributing to efforts to improve population diets, including disadvantaged groups through improving the healthiness of high volume, lower cost foods. The World Health Organization[11] has identified a number of actions that food manufacturers can take to improve population nutrition and create healthier food environments:

- *Limiting the levels of salt, free sugars, saturated fat and trans-fat in products*
- *Ensuring that healthy and nutritious choices are available and affordable to all consumers*

The widespread manufacture, marketing and consumption of unhealthy processed and pre-prepared foods and beverages is the primary reason why New Zealanders consume excess quantities of energy, saturated fat, sugar and salt. Yet there has been little action from the NZ government to encourage food industry to improve the healthiness of the food supply. Public health experts recommend that the Government set targets for voluntary reformulation of composition (salt, sugar, saturated fat) in key food groups, and mandatory labelling of products with a Health Star Rating as top priority actions for Government[12].

Purpose

The goal of this "State of the Food Supply" report is to support government, business and community efforts to help New Zealander's eat better diets. This is the first annual 'snapshot' of the state of the NZ packaged food supply. The report highlights the nutritional composition of key NZ packaged food and beverage products providing a baseline scenario to monitor and benchmark the food composition of the packaged food supply. The report will be compared overtime with future snapshots from New Zealand and other countries and used to evaluate the impacts of future government policies and industry actions.

The term 'food supply' includes non-alcoholic beverages.

Approach

Nutrient composition of packaged foods and beverages: Nutritrack NZ Database

The National Institute for Health Innovation (NIHI) at The University of Auckland collects and collates product and nutritional information from packaged foods and beverages in NZ each year[13]. The resulting database (Nutritrack) is an inventory of all packaged food and beverage products displaying a Nutrition Information Panel and available for sale in four major NZ supermarket chains (Countdown, New World, Pak'nSave and Four Square). Distribution of packaged food in New Zealand is dominated by supermarkets, accounting for 75% of all purchases. Supermarkets in turn are dominated by the two companies, Woolworths New Zealand Ltd and FoodStuffs New Zealand Ltd, which own the four store brands from which Nutritrack data are collected[3]. Nutritrack provides data on front of pack nutrition labels, nutrient, and ingredient information as displayed on the product label at one point in time each year when the data is collected. The annual Nutritrack surveys are conducted by trained field workers who use a customised smartphone application to photograph and record barcodes and information for each food and beverage product. All unique products displaying a Nutrition Information Panel are included in the surveys.

Food categories and data quality

Products in Nutritrack are classified in a hierarchical structure into 15 food groups (e.g., bread and bakery products), 59 categories (e.g., bread; biscuits), and 177 subcategories (e.g., savoury biscuits; sweet filled biscuits). This hierarchical system is based on the system developed by the Global Food Monitoring Group[14] which is designed to monitor the nutrient composition of packaged foods around the world and is used by the INFORMAS research group. A random sample of 15% of products in Nutritrack is quality checked against package photos, and reports are run to identify outlier values, ensure complete and correct NIP data, and to maximise consistency of categorisation over time. The accuracy across key fields for the 2018 Nutritrack database was 99.2%.

Data preparation

Products without a Nutrition Information Panel, such as unpackaged fruits and vegetables, fresh meat and alcohol are not included in the Nutritrack database. Seasonal foods (e.g. Easter eggs) and dietary supplements are also excluded.

The following food categories were excluded from all analyses in this report (Table 1) as they do not contribute significantly to nutrient intake and/or are not required to display complete nutrition information that allows for the calculation of certain indicators of healthiness: baking powders, chewing gum, cough lollies, herbs and spices, plain tea and coffee, yeasts and gelatines. Baby foods were also excluded as were all variety packs with multiple nutrition information panels.

Products that were missing key nutrition information required for this report were excluded except:

- *Products with no saturated fat data that had ≤ 1g fat per 100g (e.g. sugar-sweetened soft drink)*
- *Products with no sugar value that contain no carbohydrate (e.g. oil)*
- *Plain water*

Products in Nutritrack	15162
Category not included (vitamins, supplements, baby foods, baking ingredients, chewing gum, tea, instant coffee, cough lollies, herbs and spices, eggs	**693**
Multiple package sizes	**744**
Missing or incorrect NIP	**219**
Total products for analysis (except HSR)	**13506**
Total products for HSR analysis	**13074**

Table 1: Number of products excluded or included in the analysis

Different pack sizes of the same product have unique barcodes, and thus each product pack variant is included in the database. For the analyses in this report, only one pack size (the smallest) was retained in the dataset so that a product with many package sizes did not skew results. Before exclusion, products with multiple pack sizes were manually checked to ensure the nutrition information per 100g/mL was identical (judged by ingredient list, name and nutrients). All analyses were undertaken per 100g/mL and thus different serving sizes for products with multiple pack sizes would not have affected the analysis.

The HSR system is voluntary, so if displayed on the product's pack, the reported HSR was used in this report. Eighty percent of products did not display an HSR so the HSR was calculated[15] from data provided on the Nutrient Information Panel. For some products the fibre and FVNL points (fruit, vegetable, nut, legumes) needed to be estimated. An algorithm was developed to estimate this information. This was not possible for all products with 3.2% of products having no HSR calculated, primarily because of insufficient fibre values within categories to accurately estimate fibre content.

Manufacturers selected for inclusion

Brand information is provided in Nutritrack. To identify the major manufacturers for inclusion in this analysis, the company that manufactures each brand in Nutritrack was identified through company websites, information on packaging and the Intellectual Property Office[16], the latter to search for confirmatory trademarks. Each company was investigated on the NZ companies register[17] to check if it was a NZ registered company, part of a larger company or not, and to confirm the company name.

Data on sales were sourced from an independent provider of strategic market research, Euromonitor, through their International Passport Global Market Information Database[3]. The main companies that manufacture packaged foods and non-alcoholic beverages for NZ with a market share above 0.9% were selected according to Euromonitor 2018 data[3]. Market share information is provided in Euromonitor separately for packaged foods and for non-alcoholic beverages. The two major NZ grocery retailers (Foodstuffs and Woolworths) sell a diverse range of 'own brand' products so were also included in the packaged food manufacturers category, and the market share (Table 2) for these refers to the own-brand (also known as private or generic brands) labels of the respective supermarkets, not to all products sold.

Manufacturers were categorised according to whether they predominantly sold food or non-alcoholic beverages. There were 19 packaged food manufacturers that sell approximately 67% of all packaged foods and three beverage manufacturers that sell approximately 77% of all non-alcoholic beverages in New Zealand.

Sector	Companies included (from highest to lowest market share)	Market share within sector
Retailers and Packaged food manufacturers	Fonterra; Goodman Fielder; Foodstuffs; Heinz Wattie's, Woolworths NZ, Mondelēz, Griffin's Foods, Unilever NZ; Nestlé NZ; Arnott's; George Weston Foods; Hellers; Bluebird Foods; Sanitarium; Mars; Sealord; McCain Foods; Kellogg's; Dairyworks	**67%**
Soft drink manufacturers	Coca-Cola; Frucor Suntory; The Better Drinks Co.	**77%**

Table 2: NZ companies selected for inclusion

Assessment of nutritional quality

Four indicators of nutritional quality were assessed:

Health Star Rating (HSR) - The NZ and Australian Governments' Health Star Rating (HSR) front-of-pack labelling system uses a nutrient profiling algorithm to assign packaged foods and beverages a rating between 0.5 (least healthy) and 5.0 stars (most healthy) in ten half-star increments[18]. Products were classified as 'healthy' if the HSR was 3.5 or above based on prior research demonstrating that this threshold discriminates between healthy and unhealthy products[19].

Australian Dietary Guidelines - The Australian Dietary Guidelines classify foods as Core (foods that form the basis of healthy diets) and Discretionary (foods that are nutrient-poor and not necessary for a healthy diet).[4, 5] Though this is an Australian classification system, there is no equivalent NZ system that uses a dichotomous scale to consider foods as meeting the dietary guidelines (core) or not (discretionary). As the foods available in the Australian and NZ markets are similar and the dietary guidelines of each country provide similar guidance, it was considered appropriate to use this measure. This measure is also considered an important indicator as most New Zealanders need to eat discretionary foods less frequently and in much smaller amounts in order to achieve/follow a healthy diet.

Level of processing - The NOVA classification framework groups foods according to the extent and purpose of the processing applied during manufacture (Table 3). The four main classifications are 'unprocessed or minimally processed foods', 'processed culinary ingredients', 'processed foods' and 'ultra-processed food and drink products'[6]. Consumption of ultra-processed foods can indicate that the population is exposed to diets that are excessively energy dense and high in saturated

fat, sugar, and salt. This is a risk factor for higher rates of overweight and obesity as well as diet-related NCDs[20-25].

Level of processing	Definition[6]	Examples
Unprocessed or minimally processed foods	Unprocessed foods are edible parts of plants or animals, and also fungi, algae and water, after separation from nature. Minimally processed foods have undergone minimal processing and have no added oils, fats, sugar, salt or other substances	Rice, rolled oats, plain nuts, meat (no added ingredients), plain frozen fruit and vegetables, legumes
Processed foods	Products manufactured by industry from natural or minimally processed foods with the addition of salt, sugar, oil etc.	Cheese, plain canned fish, canned fruit, canned vegetables, ham, peanut butter
Ultra-processed foods	Ready-to-eat or drink formulations based on refined substances with a careful combination of sugar, salt and fat plus additives	Biscuits, crackers, most packaged bread, highly processed breakfast cereals, muesli bar, ice-cream, meat pie, mayonnaise, potato crisps

Table 3: Level of processing categories

Nutrient composition – There are well established associations between high intakes of products with excessive salt, saturated fat, added sugars, and energy density with adverse health outcomes.[26,27] Food reformulation programmes mostly target the levels of these individual nutrients.

Ranking

The primary ranking of manufacturers was based on mean HSR because it is underpinned by nutritional research and it is the currently the most active focus of government and industry action on the food supply in New Zealand. The data for the mean HSR is not sales-weighted data.

Nutritional quality of products within minor categories

As the nutritional quality of products within the major food groups ranges considerably, and companies have product portfolios including different types of food and beverage products, it is more useful to compare the products of companies within more specific categories, such as breakfast cereals rather than cereals and cereal products. Categories for which an HSR could be calculated for the majority of products, and where there was potential for reformulation were selected. The companies with the highest market shares within the minor category were selected.

This report also describes the percentage of products within the sub-categories of "Breakfast cereals" and "Breads" by manufacturer that met the Heart Foundation 'HeartSafe'[28] program targets. This program sets maximum levels of salt and sugar for breakfast cereals and salt for breads.

The United Kingdom (UK) recently introduced a sugar tax on sugar-sweetened beverages at two levels of sugar content, 18 pence (34 cents NZ) at 5-8g/100ml and 24 pence (46 cents NZ) at >8g/100g[29]. This report describes the percentage of products within the minor categories of bottled plain and flavoured waters, electrolyte and energy drinks, juices, soft drinks that are below the maximum levels of sugar to qualify for such a tax.

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The healthiness of food categories

	Nutrient profiling summary score			Dietary guidelines	Extent of processing
Major and minor food category	**Number of products**	**HSR (Mean (SD))**	**Proportion HSR ≥ 3.5 (%)**	**Proportion discretionary (%)**	**Proportion ultra-processed (%)**
Bread and bakery products	**1,654**	**2.2 (1.2)**	**28.8**	**63.5**	**99.2**
Biscuits	763	1.8 (1.1)	12.5	78.0	100.0
Bread	465	3.5 (0.7)	79.1	12.0	97.0
Cakes, muffins and pastries	426	1.6 (0.8)	2.8	93.9	100.0
Cereal and grain products	1,459	3.5 (1.0)	63.2	19.2	60.5
Breakfast cereals	372	3.7 (0.9)	67.7	7.3	81.2
Cereal and nut -based bars	236	2.7 (0.9)	22.9	100.0	100.0
Couscous	23	4.0 (0.7)	87.0	0.0	0.0
Noodles	173	2.4 (1.1)*	14.4*	5.8	86.7
Other cereals	199	4.1 (0.9)	82.9	3.5	18.6
Pasta	312	3.7 (0.8)	83.9	0.0	36.9
Rice	144	3.5 (0.6)	87.4	0.0	29.9
Confectionery	**837**	**1.0 (0.5)**	**3.5**	**100.0**	**100.0**
Convenience foods	**690**	**3.4 (0.6)**	**72.1**	**6.7**	**79.7**
Pizza	49	2.8 (0.5)*	16.7*	14.3	100.0
Pre -prepared salads and sandwiches	69	3.9 (0.5)*	93.9*	0.0	100.0
Ready meals, meal kits and other frozen foods	314	3.5 (0.5)	77.3	6.4	71.3
Soup	258	3.4 (0.7)	72.5	7.8	80.6
Dairy	**1,772**	**2.5 (1.4)**	**30.5**	**31.2**	**56.2**
Cheese	619	1.9 (1.4)	19.9	0.0	6.9
Cream	34	1.6 (0.7)	3.0	88.2	55.9
Desserts	124	2.3 (0.9)	24.2	86.3	100.0
Ice cream and edible ices	407	2.1 (0.8)	5.9	100.0	100.0
Milk (dairy, plant-based milk, flavoured milks)	275	3.7 (1.2)	73.6	3.8	50.2
Yoghurt and yoghurt drinks	313	3.1 (1.3)	50.8	0.0	84.7

Major and minor food category	Number of products	HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)	Proportion discretionary (%)	Proportion ultra-processed (%)
Edible oils and oil emulsions	**289**	**2.8 (1.2)**	**49.1**	**13.5**	**19.0**
Cooking oils	196	3.1 (1.0)	57.2	0.0	2.6
Other edible oils and fats (spreads, hard fats)	93	2.3 (1.4)	32.6	38.7	53.8
Fish and seafood products	**393**	**3.4 (1.0)**	**78.5**	**0.0**	**41.0**
Fruit and vegetables (packaged)	**1,626**	**3.9 (1.0)**	**78.1**	**25.0**	**17.2**
Fruit (packaged)	512	3.7 (0.7)	77.7	4.9	5.1
Jam and marmalades	111	2.1 (0.5)	4.5	100.0	100.0
Nuts and seeds	233	4.5 (0.7)	95.3	0.0	0.0
Vegetables (packaged)	770	4.2 (0.9)	83.8	35.2	18.4
Meat and meat products	**991**	**2.3 (1.2)**	**31.1**	**71.3**	**74.8**
Meat alternatives	69	4.0 (0.8)	85.3	0.0	88.4
Processed meat	922	2.2 (1.2)	27.1	76.7	73.8
Non-alcoholic beverages	**1,133**	**2.3 (1.5)**	**23.2**	**62.0**	**85.3**
Coffee and hot drinks (flavoured)	156	2.2 (1.4)*	26.1*	70.5	87.2
Cordials and beverage mixes	144	1.5 (0.5)	0.7	100.0	100.0
Electrolyte drinks	33	1.8 (0.3)	0.0	100.0	100.0
Energy drinks	62	1.3 (0.5)	0.0	100.0	100.0
Fruit and vegetable juices	292	3.4 (1.6)	53.0	0.0	75.0
Soft drinks	299	1.5 (0.4)	0.0	100.0	100.0
Waters (plain, flavoured)	147	3.3 (1.6)	46.2	36.7	49.7
Sauces, dressings, spreads and dips	**1,717**	**2.3 (1.5)**	**34.4**	**91.2**	**85.0**
Mayonnaise and salad dressings	214	1.7 (0.6)**	0**	90.7	90.7
Sauces	1,032	2.4 (1.2)	30.1	96.3	86.4
Spreads and dips	471	3.3 (1.1)	57.9	80.3	79.2
Snack foods	**483**	**2.3 (1.1)**	**22.1**	**100.0**	**100.0**
Special foods	**197**			**73.1**	**100.0**
Breakfast beverages	22	4.5 (0.2)	100.0	0.0	100.0
Diet drink mixes	24	n/a	n/a	0.0	100.0
Fitness or diet products	151	n/a	n/a	86.5	100.0
Sugars, honey and related products	**265**	**1.3 (0.8)**	**4.6**	**100.0**	**50.6**

Table 4: The healthiness of food categories, ordered by mean Health Star Rating score

** HSR not calculated for 24% of noodles, 13% of pizza, 57% of pre-prepared salads and sandwiches, 19% of coffee and hot chocolate drinks because of missing fibre data within the category*

*** HSR not calculated for 9% of salad dressing (all single ingredient vinegars)*

n/a HSR does not apply to these categories

Packaged Foods

Health Star Rating

- The healthiest major food category according to HSR score was packaged fruit and vegetables (mean HSR 3.9; 78.1% ≥3.5).
- The healthiest minor food categories were: bread, breakfast cereals, couscous, pasta, rice, other cereals, milk, nuts, fruit and vegetables, meat alternatives, breakfast beverages. These categories all had a mean HSR ≥3.5 and were mainly core products.
- The least healthy minor food categories, all with a mean HSR of <2.5, consisted of foods with high levels of added sugars (biscuits; cakes, muffins and pastries; confectionery; jams and marmalades; desserts; ice-cream; snack foods) and added sodium (noodles; processed meat; mayonnaise and salad dressings; sauces; snack foods).

Core and discretionary

- The food categories with the highest proportion of core products were bread, breakfast cereals, couscous, pasta, rice, noodles, other cereals, convenience foods, milk, yoghurt, cheese, edible oils, fish and seafood, fruit and vegetables, nuts and meat alternatives.
- The food categories with the highest proportion of discretionary products were biscuits, cakes, cereal bars, confectionery, cream, desserts, ice-cream, processed meat, sauces, jams, dressings, spreads and dips, and snack foods.

Level of processing

- Some categories had less than half of products classified as ultra-processed: pasta, rice, other cereals, cheese, cooking oils, fish and seafood, fruit, nuts and vegetables.
- In many categories, over 85% of foods were ultra-processed: bread and bakery products, cereal and nut bars, noodles, confectionery, pizza, pre-prepared salads and sandwiches, desserts, ice-cream, jams, meat alternatives, sauces, dressings.
- The proportion of ultra-processed foods within each minor category of a major category can vary considerably. For example, 60.5% of all cereal and grain products were ultra-processed ranging in the minor categories from 0% of couscous products to 100% of cereal and nut bars. Fifty-six percent of all dairy products were considered ultra-processed with 7% of cheeses ultra-processed, contrasting with all desserts and ice-creams classified as ultra-processed.

Overall healthiness

- Indicators of healthiness vary extensively within and across food categories. Different concepts to measure healthiness are the basis for each indicator therefore there were differences in the rating of healthiness by indicator for a manufacturer. The HSR considers the actual amounts of specific nutrients in a food, the classification of core or discretionary is guided by the food group recommendations of the dietary guidelines (rather than nutrients), and the proportion of ultra-processed products depends on the degree and method of processing and additional ingredients (rather than food group or nutrient content).
- Dairy products high in saturated fat had a low HSR but all cheeses were considered core products, and most were not ultra-processed. The two minor categories for edible oils varied in healthiness. No products in the cooking oils category were classified as discretionary, most (97%) were not ultra-processed and 57% had an HSR of ≥3.5. In contrast, the category of 'other edible oil' had 39% of products classified as discretionary, 54% classified as ultra-processed and 33% had an HSR of ≥3.5. The other edible oil category includes margarine and table spreads which were classified as ultra-processed and butter which was classified as discretionary.
- Over 93% of convenience foods were classified as core with the mean HSR 3.4 but 80% of products were ultra-processed. Many convenience foods were classified as core because the saturated fat content was below ≤5g/100g. For example, soups, salads and sandwiches, some frozen meals.
- For cereals and nut bars only 23% of products had an HSR of ≥3.5, and all were considered discretionary and ultra-processed.

Non-alcoholic beverages

- Non-alcoholic beverages generally had a low HSR (mean 2.3, 23% with HSR ≥3.5) and were classified as discretionary (62%) and ultra-processed (85%). The minor categories of fruit and vegetable juices and waters had a higher mean HSR (3.4, 3.3 respectively) but the mean HSR score was still lower than 3.5. The fruit juice category includes fruit drinks therefore many of these products were considered ultra-processed (75%) but all were classified as core according to the Australian Dietary Guidelines. Thirty-seven percent of waters, including still, sparkling and flavoured water, were classified as discretionary and half as ultra-processed (due to added ingredients).

The nutrient composition of food categories

Major and minor food category	Number of products	Nutrient composition (Mean (Standard Deviation))			
		Energy (kJ/100g)	Saturated fat (g/100g)	Sodium (mg/100g)	Total Sugars (g/100g)
Bread and bakery products	**1,654**	**1567 (438)**	**6.1 (6.0)**	**409 (244)**	**16.7 (18.0)**
Biscuits	763	1886 (279)	8.2 (6.4)	433 (279)	19.7 (17.0)
Bread	465	1136 (258)	1.3 (2.0)	431 (201)	3.9 (5.2)
Cakes, muffins and pastries	426	1466 (371)	7.7 (5.3)	342 (203)	25.1 (21.2)
Cereal and grain products	**1,459**	**1432 (501)**	**2.5 (3.5)**	**235 (393)**	**9.7 (11.3)**
Breakfast cereals	372	1679 (317)	2.9 (4.2)	142 (158)	15.8 (8.9)
Cereal and nut -based bars	236	1805 (273)	6.3 (4.0)	124 (102)	26.5 (9.2)
Couscous	23	1371 (289)	0.4 (0.4)	165 (330)	2.2 (1.8)
Noodles	173	849 (570)	2.7 (3.0)	591 (593)	2.4 (5.6)
Other cereals	199	1529 (376)	1.2 (1.7)	252 (540)	2.7 (3.8)
Pasta	312	1261 (446)	0.9 (1.4)	258 (380)	2.7 (2.1)
Rice	144	1131 (422)	0.7 (0.5)	164 (358)	1.1 (1.3)
Confectionery	**837**	**1844 (554)**	**12.1 (9.9)**	**80 (121)**	**47.8 (19.1)**
Convenience foods	**690**	**532 (376)**	**1.6 (1.7)**	**447 (720)**	**3.1 (2.8)**
Pizza	49	1006 (89)	3.7 (1.0)	488 (100)	4.7 (1.4)
Pre -prepared salads and sandwiches	69	598 (365)	1.2 (1.2)	335 (253)	3.7 (3.2)
Ready meals, meal kits and other frozen foods	314	597 (311)	2.1 (2.0)	317 (296)	3.0 (3.1)
Soup	258	288 (325)	0.7 (0.8)	568 (1112)	2.5 (2.4)
Dairy	**1,773**	**927 (540)**	**9.9 (8.3)**	**303 (416)**	**9.7 (10.7)**
Cheese	619	1439 (315)	18.4 (5.0)	753 (404)	1.5 (02.4)
Cream	34	1150 (432)	17.9 (8.8)	41 (17)	4.1 (2.0)
Desserts	124	978 (466)	5.6 (5.4)	169 (262)	23.0 (16.3)
Ice cream and edible ices	407	905 (340)	7.4 (4.6)	51 (44)	21.9 (6.0)
Milk	276	341 (314)	3.2 (5.8)	48 (64)	6.1 (8.3)
Yoghurt and yoghurt drinks	313	418 (158)	3.3 (4.1)	45 (23)	8.6 (3.7)
Edible oils and oil emulsions	**289**	**3207 (515)**	**24.6 (23.0)**	**110 (200)**	**0.3 (0.5)**
Cooking oils	196	3453 (179)	22.3 (23.9)	4 (32)	0.1 (0.3)

		Nutrient composition (Mean (Standard Deviation))			
Major and minor food category	**Number of products**	**Energy (kJ/100g)**	**Saturated fat (g/100g)**	**Sodium (mg/100g)**	**Total Sugars (g/100g)**
Other edible oils and fats (spreads, hard fats)	93	2688 (601)	29.5 (20.2)	333 (221)	0.7 (0.6)
Eggs	**90**	**596 (47)**	**3.1 (0.4)**	**158 (213)**	**0.3 (0.1)**
Fish and fish products	**393**	**716 (284)**	**1.8 (1.7)**	**1760 (22182)**	**1.8 (2.3)**
Fruit and vegetables	**1,626**	**964 (855)**	**2.2 (5.7)**	**245 (648)**	**16.7 (22.3)**
Fruit (packaged)	512	999 (723)	2.8 (9.1)	49 (397)	32.7 (24.0)
Jam and marmalades	111	1030 (222)	0.2 (0.4)	16 (53)	56.3 (14.4)
Nuts and seeds	233	2535 (254)	6.7 (2.5)	167 (239)	5.6 (4.4)
Vegetables (packaged)	770	454 (396)	0.8 (1.9)	432 (834)	3.7 (5.7)
Meat and meat products	**991**	**909 (334)**	**5.3 (4.2)**	**771 (459)**	**1.9 (3.3)**
Meat alternatives	69	875 (430)	2.0 (2.7)	451 (272)	2.5 (2.4)
Processed meat	922	912 (326)	5.5 (4.2)	795 (461)	1.8 (3.3)
Non-alcoholic beverages	**1,133**	**231 (388)**	**0.6 (2.6)**	**24 (61)**	**8.8 (12.3)**
Coffee and hot drinks (flavoured)	156	799 (748)	3.5 (6.2)	84 (132)	19.4 (26.1)
Cordials and beverage mixes	144	207 (356)	0.1 (0.5)	16 (39)	9.1 (14.3)
Electrolyte drinks	33	75 (35)	0.0 (0.2)	28 (19)	4.1 (2.1)
Energy drinks	62	144 (99)	0.1 (0.4)	44 (35)	7.4 (5.4)
Fruit and vegetable juices	292	188 (79)	0.2 (0.9)	11 (37)	9.4 (4.2)
Soft drinks	299	123 (85)	0.2 (0.4)	9 (9)	6.9 (5.1)
Waters (plain, flavoured)	147	39 (49)	0.0 (0.2)	13 (20)	2.0 (2.6)
Sauces, dressings, spreads and dips	**1,717**	**896 (753)**	**2.6 (3.9)**	**1173 (1731)**	**12.9 (14.0)**
Mayonnaise and salad dressings	214	1371 (831)	3.4 (3.0)	645 (458)	11.5 (11.9)
Sauces	1,032	632 (537)	1.8 (3.4)	1603 (2073)	13.0 (14.0)
Spreads and dips	471	1259 (857)	4.1 (4.7)	470 (626)	13.2 (14.7)
Snack foods	**483**	**1982 (372)**	**6.9 (7.0)**	**590 (348)**	**6.6 (11.1)**
Special foods	**197**	**1269 (591)**	**4.4 (4.7)**	**238 (235)**	**10.5 (11.0)**
Breakfast beverages	22	305 (62)	0.2 (0.0)	66 (17)	7.2 (1.9)
Diet drink mixes	24	746 (658)	1.2 (0.9)	134 (137)	9.3 (11.0)
Fitness or diet products	151	1493 (398)	5.5 (4.8)	279 (248)	11.2 (11.7)
Sugars, honey and related products	**265**	**1441 (461)**	**2.7 (7.2)**	**137 (992)**	**67.3 (29.2)**

Table 5: The nutrient composition of food categories

The nutrient composition of different food categories varies extensively in terms of the amounts of nutrients present across food categories. Some categories are determined by their nutrient composition, for example all 'edible oils' will be high in energy and 'sugars, honey and related products' will be high in sugar. When interpreting differences in energy, the serving size must be considered, for example cheese has six times the energy of milk but is consumed in much smaller amounts. The following results focus on minor categories and on sodium and total sugar.

- Fish and fish products had the highest mean sodium content amongst the major categories with a mean of 1760 mg per 100g. However, the median sodium content was 443mg per 100g. The discrepancy is due to fish products such as anchovies having a very high sodium content. Other categories with a high mean (per 100g) sodium were bread (431mg), convenience foods (447mg), meat and meat products (771mg), sauces, dressings, spreads and dips (1173mg) and snack foods (590mg). There was variation within some major categories. The mean sodium content of dairy products was 303mg per 100g ranging from 45mg for milk and yoghurt to 753mg/100g for cheese. Cereal and grain products had a low mean sodium content of 235mg per 100g with rice being very low in sodium (164mg) and noodles being considerably higher in sodium at 591mg/100g.
- As expected, sugars, honey and related products and confectionery had the highest mean total sugar content from amongst the major categories with 67g and 48g per 100g respectively. Other categories high in total sugar were jams and marmalades (56g), cereal and nut-based bars (27g), cakes, muffins and pastries (25g), ice-cream (22g), biscuits (20g), desserts (23g), and breakfast cereals (16g/100g). Cereal and nut-based bars had more sugar per 100g than biscuits and cakes. While it appears that packaged fruit has a high mean sugar content, almost half of the products were dried fruit with naturally occurring sugar.
- Fruit and vegetable juices and energy drinks had the highest mean sugar content of the ready-to-drink non-alcoholic beverages (9.4ml/100ml, 7.4ml/100ml). The category of fruit juices also includes fruit drinks with added sugar. The soft drink category had a lower mean sugar content (6.9ml/100ml) but also included artificially sweetened drinks.

Product portfolio healthiness for leading manufacturers

		Nutrient profiling summary score		Dietary guidelines	Extent of processing	
Manufacturer	**Number of products surveyed**	**HSR (Mean (SD))**	**Proportion HSR ≥ 3.5 (%)**	**Proportion discretionary (%)**	**Proportion ultra-processed (%)**	**Top food categories (up to 3) per manufacturer**
Sanitarium	81	4.1 (0.7)	87.7%	11.1%	91.4%	Cereal and grain products; Sauces, dressings, spreads and dips; Meat and meat products
McCain Foods	61	3.9 (0.9)*	69.8%*	34.4%	72.1%	Convenience foods; Fruit and vegetables
Sealord	89	3.8 (0.3)	95.5%	1.1%	71.9%	Fish and seafood products
George Weston Foods	94	3.4 (0.8)	67.0%	27.7%	98.9%	Bread and bakery products; Meat and meat products
Heinz-Wattie's	564	3.3 (1.2)	60.6%	47.0%	72.3%	Packaged fruit and vegetables; Convenience foods; Sauces, dressings, spreads and dips
Kellogg's (Aust)	55	3.1 (1.3)	54.5%	41.8%	98.2%	Cereal and cereal products; Snackfoods
Foodstuffs (own brand)	904	3.0 (1.3)	50.9%	45.5%	59.6%	Packaged fruit and vegetables; Bread and bakery products; Cereal and cereal products
Woolworths NZ (own brand)	851	3.0 (1.4)	49.0%	45.7%	59.0%	Packaged fruit and vegetables; Bread and bakery products; Cereal and cereal products
Goodman Fielder	427	2.9 (1.3)	49.1%	27.6%	71.7%	Bread and bakery products; Dairy; Sauces, dressings, spreads and dips
Fonterra	326	2.8 (1.5)	40.2%	30.8%	57.7%	Dairy; Edible oils and fats
Dairyworks	64	2.7 (1.1)	40.6%	14.1%	10.9%	Dairy
The Better Drinks Co	53	2.7 (1.6)	30.8%	32.7%	82.7%	Non-alcoholic beverages

		Nutrient profiling summary score		Dietary guidelines	Extent of processing	
Manufacturer	**Number of products surveyed**	**HSR (Mean (SD))**	**Proportion HSR ≥ 3.5 (%)**	**Proportion discretionary (%)**	**Proportion ultra-processed (%)**	**Top food categories (up to 3) per manufacturer**
Frucor Suntory	167	2.6 (1.0)*	30.3%*	51.9%	93.8%	Non-alcoholic beverages
Nestlé NZ	257	2.5 (1.4)	40.9%	72.4%	93.4%	Sauces, dressings, spreads and dips; Confectionery; Cereal and grain products
Unilever NZ	153	2.4 (1.1)	27.6%	58.8%	96.1%	Dairy; Sauces, dressings, spreads and dips; Convenience Foods
Arnott's	117	2.2 (1.3)	32.5%	70.1%	100.0%	Bread and bakery products; Convenience foods; Sauces, dressings, spreads and dips
Mars	135	2.2 (1.4)	31.9%	78.5%	82.2%	Sauces, dressings, spreads and dips; Confectionary; Cereal and cereal products
Griffin's Foods	134	1.9 (1.1)	14.9%	93.3%	100.0%	Bread and bakery products; Cereal and cereal products
Bluebird Foods	66	1.9 (0.8)	6.1%	100.0%	100.0%	Snack foods
Coca-Cola	173	1.8 (1.0)*	8.8%*	78.4%	96.0%	Non-alcoholic beverages
Hellers	101	1.7 (0.7)	6.9%	87.1%	84.2%	Packaged meat and meat products
Mondelēz	185	1.0 (0.8)	2.7%	89.7%	96.5%	Confectionery; Dairy; Bread and bakery products

Table 6: Product healthiness for leading manufacturers ordered by mean Health Star Rating

** Missing HSR on ≥ 2% of products.*

% missing HSR: McCain Foods, 13.1% (frozen pizza); Frucor Suntory, 3.0% (sparkling water); Coca-Cola, 3.5% (sparkling water)

Retailers: Own-brand products only

Packaged Foods

Health Star Rating

- The three manufacturers with the highest mean HSR of items were: Sanitarium (mean HSR 4.1; HSR≥ 3.5= 87.7%); McCain Foods (mean HSR 3.9; HSR≥ 3.5= 69.8%) and Sealord (mean HSR 3.8; HSR≥ 3.5= 95.5%). Note that the HSR was not calculated for 13% of McCain Foods' products due to insufficient information for some frozen pizzas so the mean HSR may be over-estimated.

Core and Discretionary

- Sealord, Sanitarium and Dairyworks had the lowest proportion of discretionary products amongst the packaged food manufacturers, with 1.1%, 11% and 14% of products respectively classified as discretionary. This reflects the focus on core products by each manufacturer: fish and seafood, breakfast cereals and dairy products, respectively.
- All the products of Bluebird Foods (snack foods) were

classified as discretionary. Mondelēz (chocolate), Griffin's Foods (biscuits) and Hellers (processed meat) had at least 87% of products classified as discretionary.

Level of Processing

- All manufacturers but one had at least half of products classified as ultra-processed. Dairyworks had the lowest proportion of ultra-processed products at 11%.
- Nine manufacturers had at least 90% of products classified as ultra-processed:
  - *Arnott's, Bluebird Foods, Griffin's Foods, George Weston Foods, Kellogg's, Mondelēz, Nestlé NZ, Sanitarium, Unilever*
- Arnott's and Griffin's Foods are predominantly manufacturers of bakery items such as biscuits, and Mondelēz manufactures confectionery. Sanitarium and Kellogg's predominantly manufacture breakfast cereals and George Weston Foods manufactures bread. Nestlé and Unilever have a wide portfolio of products.

Overall healthiness

- Different concepts to measure healthiness are the basis for each indicator therefore there were differences in the rating of healthiness by indicator for a manufacturer. The HSR considers the actual amounts of specific nutrients in a food, the classification of core or discretionary is guided by the food group recommendations of the dietary guidelines (rather than nutrients), and the proportion of ultra-processed products depends on the degree and method of processing and additional ingredients (rather than food group or nutrient content).
- Some manufacturers had a high mean HSR and a low proportion of discretionary foods yet a high proportion of ultra-processed foods, for example, Sanitarium and George Weston Foods (bread manufacturer). Sanitarium had the highest mean HSR and most products were classified as core foods. However 91.4% were classified as ultra-processed, largely due to the extensive processing and ingredients added to breakfast cereals and plant-based milks. Conversely, most of the products of Dairyworks were core and not ultra-processed yet only two-fifths of products had an HSR of at least 3.5. This is because of the high saturated fat content of many hard cheeses.

Non-alcoholic beverage manufacturers

- The Better Drinks Co was the healthiest non-alcoholic drink manufacturer with a mean HSR of 2.7, 31% of its products classified as healthy (HSR ≥3.5), the lowest proportion of discretionary products (33%), and the lowest proportion of ultra-processed products (83%).
- Frucor Suntory and Coca-Cola's portfolios had large numbers of products (167 and 173, respectively). The mean HSR was 2.6 and 1.8 with 30% and 9% of products classified as healthy respectively. Half (52%) of Frucor Suntory's products and three-quarters (78%) of Coca-Cola's products were classified as discretionary. Almost all (94%, 96%) products were classified as ultra-processed.
- Plain waters (still and sparkling) and fruit juice (with no added sugar) scored an HSR of 5. Plain water is automatically classified with an HSR of 5. Fruit juice is classified as core but may be classified with different levels of processing depending on the added ingredients. One-third (31%) of the products of The Better Drinks Co were fruit juices or plain water compared to 27% of Frucor-Suntory's and 9% of Coca-Cola's products.

Product healthiness for leading manufacturers by selected food categories

The major food categories have a heterogeneous mix of products, so a variation in the level of healthiness of products is expected within these categories. In addition, some food companies may not have products across all minor categories within a major food category. Therefore it is useful to compare the products of companies according to minor food categories so similar products are compared. In this report, the minor food categories were selected if there is potential for reformulation through lowering sodium and added sugar. The selection of food companies within these categories was based on the highest market shares. Identifying companies with healthier products in a minor food category can assist in identifying less healthy similar products that can be reformulated to be similar to the healthier products within the category.

The mean HSR of the four major bread manufacturers and of all companies manufacturing bread is similar (Table 7), with a higher proportion of products from Goodman Fielder (91%), George Weston Foods (88%) and Foodstuffs (87%) with an HSR of ≥3.5 compared to the mean HSR of all bread companies in Nutritrack (79%) (Table 8). The Heart Foundation 'HeartSafe'[28] program has a target of a maximum of 380mg sodium per 100g for bread. This target was met by 72% of Foodstuffs breads, 60% of Woolworths NZ breads, 41% of Goodman Fielder's, and 21% of George Weston Foods breads compared to 36% of breads overall. This indicates that some manufacturers could work further to reach this target.

The mean HSR of rice, pasta and noodles varied with Woolworths, Foodstuffs and Mars having a much higher mean HSR (3.5 to 4.0) than Nestlé (2.0) as many of the Nestlé products were flavoured noodles. Most of the products of Woolworths (95%), Foodstuffs (75%) and Mars Ltd (100%) had an HSR of ≥3.5 compared to Nestlé (10%).

There was some variation in the healthiness of dairy products for the major companies ranging from a mean HSR of 2.6 to 3.1, though all were higher than the overall mean for the category of 2.4. Woolworths had less products with an HSR of ≥3.5 (35%) compared to the other major companies which ranged from 42% to 47%.

There was considerable variation in the packaged fruit and vegetables category due to the nature of these products. McCain Foods focuses on frozen products with most (97%) having an HSR of ≥3.5 while Woolworths and Foodstuffs had more canned products which may have added sugar or sodium so have 67% and 83% respectively of products with an HSR of ≥3.5. Most of Heinz-Wattie's products (87%) had an HSR ≥3.5 and were a mix of frozen and canned products indicating that high HSRs for most products are possible in this category.

There was wide variation in the HSR of the category 'sauces, dressings and spreads' ranging from Nestlé with a mean HSR of 3.4 and 70% of products with an HSR of ≥3.5 to Mars with a mean of 2.5 and 31% of products with an HSR of ≥3.5. For both companies, the products in this category were predominantly sauces rather than dressings or spreads, with a wide range of the type of sauces.

Table 7: Product healthiness by HSR score for leading manufacturers by food sub-categories

	Bread		Breakfast cereals		Rice, noodles, pasta, couscous*	
Manufacturer	**HSR (Mean (SD))**	**Proportion HSR ≥ 3.5 (%)**	**HSR (Mean (SD))**	**Proportion HSR ≥ 3.5 (%)**	**HSR (Mean (SD))**	**Proportion HSR ≥ 3.5 (%)**
Arnott's						
Bluebird Foods						
Dairyworks						
Fonterra						
Foodstuffs (own brand)	3.5 (0.5)	87%	3.9 (0.8)	71%	3.5 (0.7)	75%
George Weston Foods	3.8 (0.5)	88%				
Goodman Fielder	3.8 (0.6)	91%				
Griffin's Foods						
Heinz Wattie's						
Kellogg's Aust			3.6 (1.0)	68%		
McCain Foods						
Mars					3.6 (0.2)	100%
Nestlé NZ			4.2 (0.4)	100%	2.0 (1.2)	10%
Sanitarium			3.9 (0.7)	83%		
Woolworths NZ (own brand)	3.4 (0.7)	63%	3.9 (0.8)	67%	4.0 (0.5)	95%
All companies in Nutritrack	**3.5 (0.7)**	**79%**	**3.7 (0.9)**	**68%**	**3.2 (1.0)**	**70%**

** Nestlé products are flavoured noodles and pastas, while other manufacturers also included plain rice or pasta*
***Removed nuts, jams and marmalades from packaged fruit and vegetables*

Dairy		Packaged fruit and vegetables**		Sauces, dressings, spreads		Snack foods	
HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)	HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)	HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)	HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)
						1.8 (0.8)	3%
3.0 (1.0)	46%						
2.9 (1.5)	44%						
3.1 (1.2)	42%	3.9 (0.8)	83%	2.8 (1.1)	38%	1.6 (0.6)	3%
2.9 (1.3)	47%						
		4.5 (0.5)	87%	2.8 (1.0)	39%	1.7 (0.9)	10%
		4.5 (0.5)	97%				
				2.5 (1.3)	31%		
				3.4 (0.9)	70%		
2.6 (1.2)	35%	4.0 (0.9)	67%	3.0 (1.1)	47%	2.3 (0.9)	17%
2.5 (1.4)	**31%**	**4.1 (0.9)**	**78%**	**2.6 (1.2)**	**34%**	**2.3 (1.1)**	**22%**

Breakfast cereals

An additional company, Hubbards, was included in this analysis as it has a high market share of the breakfast cereal market. The mean HSR varies among major breakfast cereal companies (Table 7) however is higher for Nestlé (4.2), Foodstuffs (3.9), Sanitarium (3.9) and Woolworths (3.9) than the average for all companies combined (3.7). All Nestlé products had an HSR of ≥3.5, and 83%/71% respectively of Sanitarium and Foodstuffs products had an HSR of ≥3.5. This indicates that there is potential to improve the HSR of breakfast cereals and breads to the level of the higher performing companies.

Table 8: Healthiness by Sub-Category for Breakfast Cereal Manufacturers

	Breakfast Biscuits			Flakes			Muesli		
	% products meeting HeartSafe target			% products meeting HeartSafe target			% products meeting HeartSafe target		
	Max sugar 22.5g/ 100g	Max sodium 300mg/ 100g	HSR mean	Max sugar 22.5g/ 100g	Max sodium 400mg or 500mg/ 100g #	HSR mean	Max sugar 22.5g/ 100g	Max sodium 300mg/ 100g	HSR mean
Foodstuffs*	100%	100%	4.5	50%	100%	3.5	57%	100%	3.9
Goodman Fielder							70%	70%	3.6
Hubbards				86%	71%	3.9	90%	85%	3.9
Kellogg's				68%	79%	3.8			
Sanitarium	100%	89%	4.5	100%	71%	3.7	83%	100%	4.1
Woolworths NZ*	100%	100%	5	100%	60%	3.3	63%	100%	4
ALL products in Nutritrack	**78%**	**83%**	**3.9**	**75%**	**81%**	**3.7**	**84%**	**92%**	**3.7**

** Only 1 product as few varieties of breakfast biscuits within a brand*
 # 500mg cornflakes, 400mg other flake cereals

Three breakfast cereal sub-categories (breakfast biscuits, flakes, muesli) were further investigated and compared to the Heart Foundation of NZ 'HeartSafe' targets for sugar and sodium (Table 8). Flakes and muesli were the two breakfast cereal categories with the most products in Nutritrack. Breakfast biscuits were selected because they are a common NZ breakfast cereal with one product alone accounting for over one-tenth of breakfast cereal sales[3]. Having a higher percentage of products meeting the HeartSafe targets does not necessarily translate to a higher mean HSR as the HSR also accounts for modifying factors such as fibre and the inclusion of fruit and nuts.

Most breakfast biscuits in Nutritrack met the HeartSafe targets for sugar (78%) and sodium (83%) and the products of the major companies all had a mean HSR of at least 3.9.

Three-quarters of all flake cereals met the sugar targets and 81% met the sodium targets with a wide range for the major companies. The mean HSR of flake cereals was 3.7 ranging from 3.3 for Woolworths to 3.9 for Hubbards. Most of the mueslis in Nutritrack met the HeartSafe targets for sugar (84%) and sodium (92%) with all products from Foodstuffs, Sanitarium and Woolworths meeting the sodium target. The percentage of mueslis meeting the sugar target ranged from 90% for Hubbards to 57% for Foodstuffs with a range of mean HSRs from 4.1 (Sanitarium) to 3.6 (Goodman Fielder).

Non-alcoholic beverages

Table 9: Healthiness by HSR by minor category for beverage manufacturers

	Bottled plain and flavoured water *			Juice		
	HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)	Total Sugars (g/100g) mean (SD)	HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)	Total Sugars (g/100g) mean (SD)
Coca-Cola	2.4 (1.1)	15%	2.2 (2.3)	2.7 (1.5)	31%	8.5 (2.9)
Frucor Suntory	2.8 (1.3)	27%	1.0 (1.37)	3.7 (1.6)	59%	9.2 (2.8)
The Better Drinks Co	2.0 (0)	0%	3.8 (2.2)	3.3 (1.7)	47%	9.3(1.8)
All companies in Nutritrack	**3.3 (1.6)**	**46%**	**2.0 (2.6)**	**3.4 (1.6)**	**53%**	**9.4 (4.2)**

** Includes coconut water, flavoured, plain and sparkling water*
*** About half the products are sugar-sweetened and about half are artificially sweetened*
Missing HSR: 1.4% waters, 2.4% juices, 3.2% electrolyte and energy drinks, 2.3% soft drinks
n/a: Only two products in this category

The mean HSR of soft drinks, electrolyte and energy drinks is low for all companies with no products having an HSR ≥3.5 (Table 9). For bottled water, Frucor Suntory had a higher mean HSR (2.8) and a higher proportion of products with an HSR of ≥3.5 (27%) than Coca-Cola (2.4, 15%) but both companies performed poorly compared to all companies (3.3, 46% HSR ≥3.5). The low mean HSRs for bottled waters indicate that many were water-based products with additional ingredients e.g. sugar, fruit juice, fructose, flavours. For fruit juice, Frucor Suntory had a higher mean HSR (3.7%) and a higher proportion of products with an HSR of ≥3.5 (59%) compared to Coca-Cola (2.7%, 31%) with The Better Drinks Co in-between (3.3, 47%).

The United Kingdom (UK) recently introduced a sugar tax on sugar-sweetened beverages at two levels of sugar content, 18 pence (34 cents NZ) at 5-8g/100ml and 24 pence (46 cents NZ) at >8g/100g[29]. None of the waters of Frucor Suntory would qualify for a sugar tax, and 15% of Coca-Cola bottled waters would qualify for a tax at the lower level. For electrolyte and energy drinks, a higher proportion of Coca-Colas' products (79%) would qualify for a UK sugar tax compared to Frucor (46%) and all products in Nutritrack (61%). For soft drinks (including artificially sweetened drinks) a higher proportion of The Better Drink's products (91%) would qualify for a UK sugar tax compared to Frucor (71%), Coca-Cola (66%) and overall (65%). Fruit juices are exempt from a sugar tax in the UK. However, fruit and vegetable juices had the highest median sugar content of non-alcoholic beverages (9.4ml/100ml). The fruit juices category also includes fruit drinks with added sugar.

Electrolyte and energy drinks			Soft drinks**		
HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)	Total Sugars (g/100g) mean (SD)	HSR (Mean (SD))	Proportion HSR ≥ 3.5 (%)	Total Sugars (g/100g) mean (SD)
1.4 (0.4)	0%	8.0 (4.5)	1.4 (0.5)	0%	7.0 (5.0)
1.5 (0.5)	0%	5.4 (4.7)	1.3 (0.5)	0%	7.6 (5.2)
n/a	n/a	n/a	1.3 (0.3)	0%	8.0 (2.7)
1.8 (0.3)	**0%**	**6.3 (4.74)**	**1.5 (0.4)**	**0%**	**6.9 (5.1)**

Interpretation

NZ consumers have many packaged foods and beverage options from which they can choose. Too often, available food and beverage options are unhealthy, making it harder for consumers to make a healthy choice. The packaged food supply delivers a considerable number of products with added sugar and sodium. Only three companies provide product portfolios where the majority are considered healthier i.e. HSR of ≥3.5.

An Australian report[30] came to a similar conclusion regarding the state of the Australian food supply. In addition, the authors analysed changes between 2017 and 2018 and found that while some companies where improving the nutritional quality of their products, more companies appeared to make no improvements with the average HSR dropping for half of the 33 largest manufacturers.

While the data included in this 'State of the Food Supply' report indicate serious shortcomings in the healthiness of NZ foods and beverages, there are clear opportunities. The wide range of Health Star Ratings within many food categories highlights the potential feasibility of making healthier versions and reformulating existing versions of similar products. While there are many companies producing a wide array of brands and products there are dominant players within categories of commonly consumed foods such as bread and breakfast cereals. Efforts to improve the healthiness of packaged food and beverage products should be initiated with these companies, because improvement in their products has potential to improve population diets.

For example, the mean HSR of the dominant breakfast cereals companies ranged from 3.6 to 4.2, and packaged fruit and vegetables ranged from 3.4 to 4.5, indicating that some companies are already producing healthier items in these categories. All non-alcoholic beverage companies could do more to develop healthier options in categories and/or reformulate by reducing or removing sugar.

Government sets the regulatory environment within which NZ foods are manufactured, marketed, sold and consumed. However, there are no government-led manufacturer targets for reformulation or food composition. Setting targets can be an effective way of focusing and mobilising resources for public health issues. A top priority for government action for healthier food environments identified by NZ public health experts is to set food composition targets for nutrients of concern (sodium, saturated fat, added sugar)[12].

Government-led targets for sodium and added sugar are recommended for New Zealand. Since 2007, the NZ Heart Foundation has implemented a food reformulation programme (HeartSafe[28]) focused primarily on reducing sodium levels across packaged foods with a focus on higher volume products and core food categories. The programme is funded by the Ministry of Health. Voluntary targets and timeframes are set in partnership with industry. Recently work has expanded to include sugar reduction targets. As part of the Healthy Kids Industry Pledge initiated by the Government in 2016[31], some companies have set their own reformulation targets. Some countries, for

example, Argentina and South Africa, have specified in law mandatory levels of sodium for some food categories. The UK salt reduction programme, initiated in 2013/14 has led to reductions in the salt content of many processed foods.

The 2019 HSR system five-year review draft report[32] recommends that changes be made to the way the HSR is calculated for non-dairy beverages to better discern water from high energy drinks. Proposed changes would reduce the HSR of some fruit juices and increase the HSR of unsweetened flavoured waters. These changes are supported by the findings of this report, which show that waters with added ingredients can have a lower HSR than fruit juices, and fruit drinks, despite mostly being lower in sugar. Currently, fruit juices and fruit drinks have the highest mean sugar content of non-alcoholic beverages yet the highest mean HSR.

A Health Star Rating on every product in the supermarket would enable customers to more easily discriminate between healthier and less healthy products. Public health experts in New Zealand recommend that the HSR system should be mandatory if the current slow uptake continues[12]. The same recommendation was also made after an evaluation of the performance of the HSR by researchers using peer-reviewed publications and government-commissioned monitoring and evaluation in New Zealand and Australia[33]. Mandatory front-of-pack labelling is increasing globally, including recent initiatives in Mexico, Iran, Chile, Sri Lanka, Peru, Uruguay and Israel[34].

The BIA-Obesity tool[35] assessed the transparency, comprehensiveness and specificity of policies and commitments related to obesity prevention and population nutrition by NZ food companies. Of the top manufacturers and retailers (excluding beverage companies), most (15 of 17) had commitments to reformulate products to reduce levels of sodium and many (15 of 19 companies, including beverage companies) had targets to reduce sugar in specific food categories. Most companies (15 of 19) also had committed to implement the HSR system. In the BIA report, the top companies for commitments to reformulation were Nestlé, Fonterra, Mars, Mondelēz, Unilever and Sanitarium. Of these, only Sanitarium had at least two-thirds of products with an HSR of ≥3.5. The authors of BIA-Obesity recommended companies to develop SMART targets for the reduction of nutrients of concern and to commit to implement the HSR across all products.

This report assessed the healthiness of food, however with increased awareness of the importance of considering planetary health together with human health[36, 37], future reports should consider wider aspects of foods such as the sustainability of the food, food packaging and waste.

Strengths and limitations

The analysis of The State of the Food Supply used a highly standardised approach to the collection, processing and evaluation of data on packaged foods and beverages across years and captures a large range of products. The preparation of the report independent of interested parties, in particular the food industry, is an important additional strength.

The report should, however, be interpreted in light of some limitations. While the data are representative of what was on the shelves of the sampled stores during the survey period in 2018, they do not represent every food and beverage available in every store throughout the year. The analyses also rely upon the data reported on pack by manufacturers with imputation of some metrics not required to be labelled, but necessary for the calculation of a Health Star Rating. In addition, the data illustrate what is available for sale in stores but not what is actually purchased or consumed.

Recommendations

Government should require mandatory on-pack labelling of all foods and beverages with a Health Star Rating label and the data required to calculate the HSR. ***Consumers have the right to know about the healthiness of the foods they are purchasing.***

Government must set targets for voluntary reformulation of composition (salt, sugar, saturated fat) for key food groups. ***Real action across the whole food supply will be the most effective way of curbing the epidemic of obesity and diet-related ill health in New Zealand.***

Food manufacturers (including retailers with own brand products) should benchmark the nutrient composition of their portfolios against best-in-category equivalents for levels of energy, saturated fat, sugar and sodium. Manufacturers could increase the proportion of minimally processed foods in their portfolio, such as whole grains, vegetables and fruit products. ***Food manufacturers must take responsibility for the healthiness of all the foods they are making and marketing.***

Food retailers should continue to take an active role in improving the healthiness of the NZ food supply. Retailers could set minimum requirements for the healthiness of the foods they stock and promote in-store and could require the HSR for products on their shelves. ***As the gatekeepers to NZ food purchases, retailers have the opportunity to help every New Zealander buy healthier.***

Conclusions

Unhealthy diets and obesity are two of the biggest modifiable health risks in New Zealand. Consumers need a food environment that enables them to follow a healthy eating pattern based mostly on whole foods and less processed foods low in added sugar and salt. While many of the packaged foods and beverages available in NZ are excessively energy dense and high in salt, saturated fat and sugar, some companies are providing healthier and less processed products. Government leadership is now required to makes substantive gains across the food supply with targets for reformulation and mandatory Health Star Ratings.

The NZ food and beverage industry has a responsibility to improve the healthiness of what it manufactures and make it easier for their customers to identify the healthier options available. There are multiple, highly plausible ways that industry could achieve this through better labelling, benchmarking, reformulation and marketing of foods and beverages. Actions that improve the quality of the NZ food supply have the potential to reduce overweight, obesity and premature death and disability amongst millions of New Zealanders including disadvantaged groups.

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Acknowledgments

With support from The George Institute for Global Health

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This research was supported by the National Health and Medical Research Council (NHMRC) funded Centre of Research Excellence in Reducing Salt Intake using Food Policy Interventions (APP1117300). The opinions, analysis, and conclusions in this paper are those of the authors and should not be attributed to the NHMRC.

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