New Zealand Food Safety
Haumaru Kai Aotearoa

Health Star Rating

Monitoring Implementation for the Five Year Review

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This report was authored by Lucy Kennedy, Rebecca Doonan, Phillippa Hawthorne and Michelle Gibbs.

Executive summary

PURPOSE OF THE DOCUMENT

The purpose of this document is to report on the implementation of the Health Star Rating (HSR) system in New Zealand to inform the five year review of the HSR system in Australia and New Zealand. The data included in the monitoring report covers the period from June 2014 to June 2018. The report is largely informed by research commissioned by New Zealand Food Safety (NZFS), a branded business unit of the Ministry for Primary Industries and the Health Promotion Agency.

Implementation has been assessed against three defined areas of enquiry; uptake and implementation of the HSR system, consumer awareness and understanding, and nutrient status of products.

BACKGROUND

The Health Star Rating system was developed by the Australian state and territory governments in collaboration with industry, public health and consumer groups. It is an interpretive front of pack labelling system that rates the overall nutrient profile of packaged foods and assigns it a rating from ½ star to 5 stars. The system is about making it quicker and easier for consumers to make better informed, healthy food choices. New Zealand joined with Australia in implementing the HSR system in June 2014.

A comprehensive review of the HSR system was scheduled to be undertaken after five years of implementation. This review is currently underway. NZFS has responsibility for coordination of data to inform the five year review of implementation of the HSR system in New Zealand. This report provides that data.

UPTAKE OF THE HSR SYSTEM

Uptake of the HSR System

Uptake of the HSR system in New Zealand has steadily increased over time. In the first quarter 2018, 2,997 (21%) eligible foods in the Nutritrack database carried a HSR up from 37 (0.3%) eligible foods in 2015. In 2017, the most recent data available on household food purchases, a total of 19% of New Zealand household food purchases carried a HSR label.

In 2018, packaged fruit and vegetables had the highest absolute uptake of the HSR of all the food groups assessed (n=450), followed by cereals and cereal products (n=400) and non-alcoholic beverages (n=384). In 2017 HSR labelled products in these food groups represented 21% of all household purchased packaged fruit and vegetable products, 31% of all household purchased cereal and cereal products and 20% of all household purchased non-alcoholic beverages.

LABEL IMPLEMENTATION AND CONSISTENCY WITH THE HSR SYSTEM STYLE GUIDE

Label implementation

The most frequently used HSR display option on foods in the Nutritrack database in 2017 and 2018 was Option 4, the option which only displays the HSR graphic only. Almost all products (with the exception of a few formulated supplementary sports foods) assessed were permitted

to display the HSR. Approximately 5% of the HSR labelled products were on foods for which the HSR system was not intended.

Consistency with the HSR system Style Guide
Very few inconsistencies were identified between the HSR option displayed and the HSR system Style Guide. The most common area of design variation was related to the legibility and general visibility of the HSR on pack. The most common technical variation to the HSR system Style Guide was related to the use of the nominated reference measure.

CONSUMER AWARENESS AND UNDERSTANDING

Awareness of the HSR
There has been a significant increase in awareness of the HSR system. Seventy-six percent of shoppers are now aware of the HSR when prompted, compared to 38% in 2015. Unprompted awareness has increased from 3% at baseline to 16% of shoppers in 2018.

Consumer knowledge and understanding of the HSR system
Without prompting with possible responses, close to half of shoppers (49%) provided comments that suggest an accurate understanding of the HSR. This finding is consistent with 2015 and 2016, however there has been a significant increase in self-reported knowledge of the system (14% in 2018 up from 5% in 2015).

Accurate and effective use of the HSR system
Use of the HSR system has increased from one in ten shoppers in 2015 to almost three in ten shoppers in 2018. Intended use of the HSR has remained steady, with half of all shoppers reporting that they are very or quite likely to use it in the future.

Shoppers' understanding of how to use the HSR correctly has improved. Compared to 2015, more shoppers now understand that the HSR should not be used to compare products in different categories. More shoppers also understand how to use the HSR to identify the healthier option based on the number of stars on a product.

Trust, reliability, and credibility in the HSR system
Although there have been encouraging improvements in awareness, knowledge and use of the HSR since 2015, levels of trust have remained similar (40% say they trust the HSR system). There has been little movement between 2015 and 2018 amongst the general population in the believability, confidence and trust in the HSR.

NUTRIENT STATUS OF PRODUCTS

Distribution of star ratings
Three quarters (77%) of products displaying the HSR graphic have ratings of 3.0 to 5.0 stars. In 2018, the median star rating for products displaying HSR graphic was 3.5. Compared to 2015, there have been small increases in proportions of products with 0.5 to 3.0 stars and a relative reduction in proportions with 4.0 to 5.0 stars.

Nutrient content of HSR vs non-HSR labelled products
Products displaying HSR labels have significantly lower average energy density and saturated fat, sodium, total sugar and protein contents than non-HSR products. Differences between HSR and non-HSR labelled products could reflect reformulation, selective application of HSR to already healthier products, or a combination of these.

Reformulation of products displaying HSR
Of those products displaying a HSR in 2018 that were available prior to implementation of the HSR in New Zealand (first quarter of 2014); 79% had been reformulated to some extent. Reformulation was defined as a minimum of 5% change in the content of a key nutrient (e.g. sodium).

There was some evidence of healthier product reformulation of HSR labelled products relative to non-HSR products with respect to sodium. However, the difference was small and not statistically significant when weighted by household food purchase volumes.

1 Purpose

The purpose of this document is to report on the implementation of the HSR system in New Zealand against the three defined areas of enquiry based on research commissioned by New Zealand Food Safety (NZFS), a branded business unit of the Ministry for Primary Industries, and the Health Promotion Agency. The data included in the monitoring report covers the period from June 2014 to June 2018.

2 Introduction

In 2011, a trans-Tasman review of Food Labelling Law and Policy recommended that an interpretive front of pack labelling scheme be developed for implementation in Australia and New Zealand (recommendation 50 of Labelling Logic: Review of Food Labelling Law and Policy)[1].

In response to this recommendation the HSR system was developed in Australia through a collaborative process involving public health, industry and government experts. Concurrently in New Zealand, the Minister for Food Safety appointed a New Zealand Front of Pack Labelling Advisory Group, now known as the New Zealand Health Star Rating Advisory Group (HSRAG) which developed principles for a front of pack labelling system in New Zealand[2].

On 27 June 2014, the Australia and New Zealand Ministerial Forum on Food Regulation (the Forum) agreed that the HSR system should be implemented voluntarily over five years with a review of the progress after two years. At the June 2014 Forum, New Zealand formally joined the HSR system. This decision was made after an assessment of the HSR system by the New Zealand Front of Pack Labelling Advisory Group against their agreed set of principles. Consumer research also confirmed that New Zealand consumers could use the HSR system to choose healthier foods[3].

The HSR system is a voluntary front of pack labelling system that makes it easier for consumers to identify healthier packaged food. It rates the overall nutritional profile of packaged food and assigns a rating from ½ a star to 5 stars; foods with more stars are healthier than similar foods with fewer stars. While most people understand that foods like fruit and vegetables are good for you, it can be a lot harder to understand the nutritional value of packaged foods and this is where the HSR system is designed to help. With a focus on packaged foods, the HSR system aims to: *"provide convenient, relevant and readily understood nutrition information and /or guidance on food packs to assist consumers to make informed food purchases and healthier eating choices"*.

On 20 November 2015, members of the Forum agreed that a formal review of the system should also be carried out after five years of implementation.

[1] Blewett N, Goddard N, Pettigrew S, Reynolds C, Yeatman H (2011) Labelling logic: review of food labelling law and policy. Accessed 10th September 2018. http://webarchive.nla.gov.au/gov/20160105000033/http://www.foodlabellingreview.gov.au/internet/foodlabelling/publishing.nsf/content/labelling-logic

[2] New Zealand Front of Pack labelling Advisory Group (2012) Final report to the Minister of Food Safety. Accessed 10th September 2018. https://www.mpi.govt.nz/dmsdocument/14962-new-zealand-front-of-pack-labelling-advisory-group

[3] Colmar Brunton (2013) Research report: the ability of New Zealand consumers to use the Health Star Rating system. Ministry for Primary Industries technical paper no: 2014/12. Accessed 10th September 2018. https://www.mpi.govt.nz/dmsdocument/3913/loggedIn

The monitoring of the HSR system is overseen by the trans-Tasman HSR Advisory Committee (HSRAC). The HSRAC has agreed that the areas of enquiry for the purposes of monitoring the HSR system are:

1. label implementation and consistency with the HSR system Style Guide;
2. consumer awareness and ability to use the HSR system correctly; and
3. nutrient status of products carrying a HSR system label.

The five year review considers if, and how well, the objectives of the HSR system are being met and will recommend options for improvement and continued implementation of the system. As part of this process a Technical Advisory Group has been set up to analyse the performance of the HSR calculator and to look into technical issues and related matters that have been raised by stakeholders. In order to achieve a degree of independence, a consultant (*mpconsulting*) has been engaged to complete the review. Consultation forms an integral part of the review process.

NZFS has responsibility for coordination of the New Zealand monitoring data to inform the five year review for the three key areas of enquiry. The National Heart Foundation of Australia (Heart Foundation) has been engaged to undertake data collection and analysis in Australia for comparable data. This report provides the New Zealand monitoring data for the purposes of the five year review.

2.1 MONITORING AND EVALUATION FRAMEWORK

The Heart Foundation developed a Program Logic Framework (**Figure 2.1**) to guide the monitoring and reporting against the three areas of enquiry for both Australia and New Zealand[4]. The developed framework was agreed to by the HSRAC at the 2 October 2015 meeting.

[4] National Heart Foundation of Australia Framework. Accessed September 2018. http://healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/hff

Figure 2.1 Program Logic Framework for the monitoring and evaluation of the implementation of the Health Star Rating system

Program logic framework for monitoring and evaluating the Health Star Rating System

HSR objective: To provide convenient, relevant and readily understood nutrition information and/or guidance on food packs to assist consumers to make informed food purchases and healthier eating choices.
Monitoring objective: To objectively monitor and evaluate the implementation, awareness and use, and changes in the food supply, of the HSR system.

Area of enquiry 1	**Area of enquiry 2**	**Area of enquiry 3**
Label implementation and consistency with the HSR system Style Guide	Consumer awareness and ability to use the HSR system correctly	Nutrient status of products carrying a HSR system graphic

Inputs

Funding | Documents/reports | Staff | Equipment/technology

Activities and outputs

• Establishment of analytical methods • Establishment of standard operating procedures • Monitoring of: -Uptake of HSR by manufacturers and retailers -Implementation of HSR against Style Guide	• Develop/implement metrics • Develop/implement quantitative and/or qualitative research and monitor consumer: - Awareness, knowledge, intentions and behaviours	• Develop/implement metrics • Develop analytical methods, operating procedures for: - Nutrient status of products - Changes in nutrient profile

Outcomes (Up to year 2)

• Objective measurement/ assessment against indicators including: -Uptake of HSR by manufacturers and retailers -Implementation of HSR against Style Guide	• Objective measurement/ assessment against indicators including: - Awareness, understanding of HSR - Accurate use of HSR, trust in HSR • Assessment to cover key population demographics	• Objective measurement/ assessment against indicators including: -Nutrient status of products -Changes in nutrient profile

Impact (2-5 years)

• Medium to long term uptake of HSR by manufacturers and/or retailers, including coverage across categories and food products	• Medium to long term impact of HSR on consumer behaviours, including extent of use of HSR by consumers and effective consumer use and acceptance • Impact of HSR on health and/or lifestyle risk factors	• Medium to long-term impact of HSR on nutrient status across food categories and changes to nutrient profiles.

3 General methodology

Some general methods were used to assess HSR implementation across a number of areas of enquiry. Areas of Enquiry 1 and 3 were assessed using the Nutritrack packaged food database and in some instances further analysis was undertaken using the Nielsen Homescan® Panel data.

The National Institute for Health Innovation established the Nutritrack database in 2011 and has matched products within the database to the corresponding products in the Homescan® database in order to obtain an estimate of annual household purchase volumes of packaged foods in New Zealand. The National Institute for Health Innovation were commissioned to monitor uptake of the HSR system and nutrient content of packaged food. A summary of the methods used to collect the data in these databases is provided below. A detailed description of the methodology can be found in the report prepared by the National Institute for Health Innovation[5]. Specific methods utilised to assess each of the areas of enquiry are detailed in the relevant sections.

3.1 NUTRITRACK

Nutritrack is an online annual inventory of packaged food products available in major New Zealand supermarkets, representing approximately 75% of the packaged food available in New Zealand. It provides data on front of pack labelling, nutrition and ingredient information as displayed on the product label at a point in time once each year, and stores images of these products for future reference. This information has been sourced from four stores in Auckland, representing the two main national supermarket retailers.

Since 2011, data from the nutrition information panel (NIP) has been collected. In 2014, the database was expanded to include information from the ingredient lists and the presence of the HSR system graphic. From 2017 onwards, information on the HSR energy icon only label was also collected.

3.1.1 Nutritrack data collection and sampling

Annual surveys are carried out by trained field workers who collect data using a customised phone application, including photographs and barcodes for each food product. The data is collected from one store each of New World, Four Square, Countdown and Pak N' Save supermarkets in Auckland between February and April each year.

All unique products displaying a NIP are included in the surveys. Different pack sizes of the same product have unique barcodes, and each product pack variant is included in the database. Products without a NIP, such as unpackaged fruits and vegetables, fresh meat and alcohol are not included in the database. Seasonal foods (e.g. Easter eggs) and dietary supplements are also excluded.

3.1.2 Nutritrack data management

Data is entered into a secure online database by trained staff, using the photographs taken instore. The food name, manufacturer, food category, barcode, NIP, ingredient list and front of pack labelling information were entered into the database.

Data is quality checked and classified in a hierarchical structure into 15 food 'groups', 59 'categories' and 177 'subcategories', outlined in Appendix 2. This uses a standardised food

[5] 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.

categorisation system, which was developed by the Global Food Monitoring Group and used by the International Network for Food and Obesity/non-communicable disease Research, Monitoring and Action Support (INFORMAS).

3.2 NIELSEN HOMESCAN PANEL

Nielsen Homescan® is a geographically and demographically representative panel of approximately 2,500 New Zealand households who scan all foods and beverages purchased for consumption in the home. The weighted panel data represent approximately 80% of total food and grocery retail business in New Zealand and has been in existence for 20 years.

Households are provided with handheld barcode scanners and instructed to scan the barcodes of all purchased food items taken home after a grocery shop. Scanning occurs continuously throughout the year and includes products purchased from supermarkets, convenience stores, specialist stores and department stores.

4 Uptake of the Health Star Rating system

4.1 INTRODUCTION

Outcomes for Area of Enquiry 1 are divided into two components, and are reported separately due to differences in methodology:

1.a. Uptake of the HSR system by manufacturers and retailers, which is reported in Section 4.

1.b. Assessment of the implementation and consistency with the HSR system Style Guide, which is reported in Section 5.

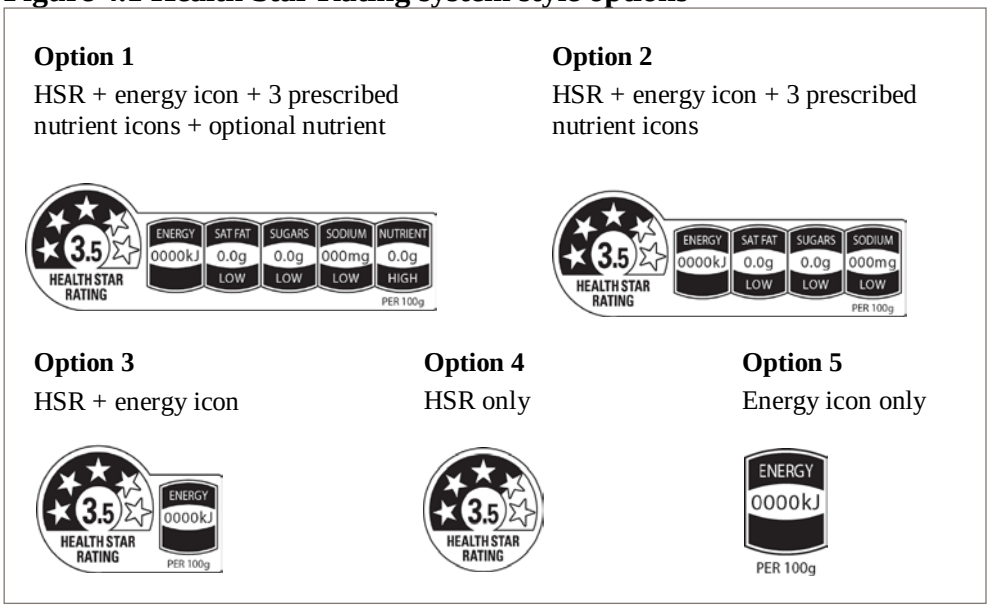
4.2 METHODOLOGY

The assessment of the total uptake of the HSR system was undertaken by the National Institute for Health Innovation and summarised below; full details of the results are provided in their report[6]. Uptake of the HSR system was based on all foods in the Nutritrack database eligible to display a HSR. Data was collected at a point in time (between February and April) and as such reflect HSR uptake and consistency in the first quarter of each year.

The HSR system is designed in a manner which optimises its use for a variety of food packages through the flexibility in the amount of information provided to consumers. Companies can choose to display a range of HSR system graphics. The Style Guide outlines the five options which can be applied to food products. The hierarchy of HSR system is provided in **Figure 4.1.**

[6] 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.

Figure 4.1 Health Star Rating system style options



4.2.1 Assessment of Health Star Rating uptake

Uptake of the HSR system was measured in both absolute terms within the food database Nutritrack, and as a weighted proportion of household food purchases using the Nielsen Homescan® panel data for 2015 - 2017. As noted above, uptake of the HSR system in 2015 and 2016 was limited to only food products using HSR Options 1 to 4. Data on the use of Option 5, the energy icon only, was included for 2017 and 2018.

To assess the absolute uptake of the HSR system, the Nutritrack database was interrogated to identify the number of products labelled with the HSR across all foods, and within food categories. The foods were categorised in a hierarchical structure into 15 food 'groups' and 59 'categories'. Where possible, the food categorisation levels presented in this report were chosen to align with the Heart Foundation reporting in Australia. A full list of the food categories used is presented in the report prepared by the National Institute of Health Innovation[7].

HSR uptake was also measured as a percentage contribution of total household food purchases. This was undertaken through the process of matching Nutritrack data with Nielsen Homescan® panel data as identified in the General Methodology section.

4.2.2 Food product inclusion criteria

For the purpose of this work, the following Nutritrack product categories were excluded because they are not intended or not eligible to display the HSR system. Products excluded because they are *not eligible* to display the HSR were baby foods, sports foods, vitamin and mineral supplements, and cough lollies. Products excluded because they are *not intended* to display a HSR label were bicarbonate of soda, chewing gum, herbs and spices, tea, and vinegars. Exclusions were undertaken based on advice from the Front-of-Pack Labelling Secretariat and to align with the HSR monitoring work in Australia. **Table 4.1** shows the number of products included in the analysis each year. The total number of products excluded from these analyses was 4,573 (an average of 915 (7%) products per year of data collection), only 111 products with HSR labels were excluded.

[7] 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.

Products within the Nutritrack database were matched using barcodes to products in the Homescan® Panel database. If a product in Nutritrack could not be matched with a corresponding product in the Homescan® panel, then no data was available for household purchases for that product. Approximately 14% of products in the Nutritrack database could not be matched with the Homescan® data. A summary of the number of products within the Nutritrack database that were matched with the Nielsen Homescan® data is provided in **Table 4.2**. The 2018 data was not available for this assessment.

Table 4.1 Number of packaged food and non-alcoholic beverage products included in the analysis

Year	Number of products with a unique barcode
2014	13,561
2015	13,279
2016	14,325
2017	14,124
2018	14,318

Table 4.2 Number of packaged products in the Nutritrack database* linked with Nielsen Homescan® data

Year	Number of unique barcode products in Nutritrack database**	Nutritrack products matched with Nielsen Homescan® purchased products*** n (%)
2014	13,561	11,362 (84%)
2015	13,279	11,140 (84%)
2016	14,325	12,366 (86%)
2017	14,124	12,490 (88%)

*Number of packaged products in the Nutritrack database that were assessed as part of these analyses.
**Different pack sizes of the same product are classified as unique items in the database
***A proportion of Nutritrack products could not be linked with a corresponding product in the Homescan database. This occurred if products could not be matched either by barcode or approximate string matching (most likely due to changes in barcode following alterations to a product packaging.

4.3 RESULTS

4.3.1 Uptake of the Health Star Rating system

Uptake of the HSR system in New Zealand has increased steadily over time. In the first quarter of 2018, 2,997 (21%) eligible products in the Nutritrack database were labelled with the system; this is an increase from 2,065 (15%) in 2017 (**Table 4.3**).

Data on the uptake of the HSR graphic (excluding Option 5, energy icon only) is available from 2015 onwards. In 2015, 0.3% of eligible products carried a HSR graphic (n=37), this increased to 5% in 2016 (n=788); 13% in 2017 (n=1,811); and 18% in 2018 (n=2,545).

The contribution of all HSR labelled products to total household purchases also increased over time from 0.8% in 2015, to 7% in 2016 and 19% in 2017 (**Table 4.3**). This is consistently higher than the proportion of all eligible products displaying the HSR, suggesting that the system appears more frequently on food purchased by New Zealand households.

HSR uptake by food group
Table 4.3 shows the number of products with the HSR system and the percentage contribution of HSR labelled products to household purchases, by food group.

Uptake increased across all food groups, with the exception of eggs, which had one less product carrying a HSR in 2018 compared to 2017 (**Figure 4.2**).

In 2018, the fruit and vegetables group had the highest absolute number of products displaying a HSR system (n=450), representing 25% of eligible products in the fruit and vegetable group. Nuts and seeds (n=111), processed fruit (n=128) and processed vegetables (n=178) were the main food categories driving the higher uptake within this food group.

Although there was a higher number of HSR labelled products in the fruit and vegetable group, the food group with the highest proportion of HSR labelled products was 'special foods' in 2018[8]. Within this group 60% of eligible products (n=36) were labelled with a HSR in 2018. In addition to the high proportion of HSR labelled 'special foods', in 2018 more than a quarter of eligible convenience foods (34%), non-alcoholic beverages (30%) and cereal and cereal products (26%) displayed a HSR label.

In 2017, the special foods group had the highest proportion of products carrying the HSR (46%) representing over 70% of household purchases. In 2017, HSR labelled products also made up more than a quarter of food purchases in the cereal and cereal products (31%), sauces and spreads (30%) and convenience foods (28%) groups, compared to 22%, 15% and 22% of products displaying a HSR within these food groups respectively.

Within these food groups with a proportionally higher HSR uptake the leading food categories driving this uptake included: breakfast cereals in the cereals and cereal products group; soft drinks (carbonated) and fruit and vegetable juices in the non-alcoholic beverages group; sauces (e.g. gravies and stocks; meal-based sauces) in the sauces and spreads group; and soup in the convenience foods group. A detailed list of HSR uptake within the food groups can be found within the report prepared by the National Institute of Health Innovation[9].

[8] Special foods include baby foods, sport foods and diet foods
[9] 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.

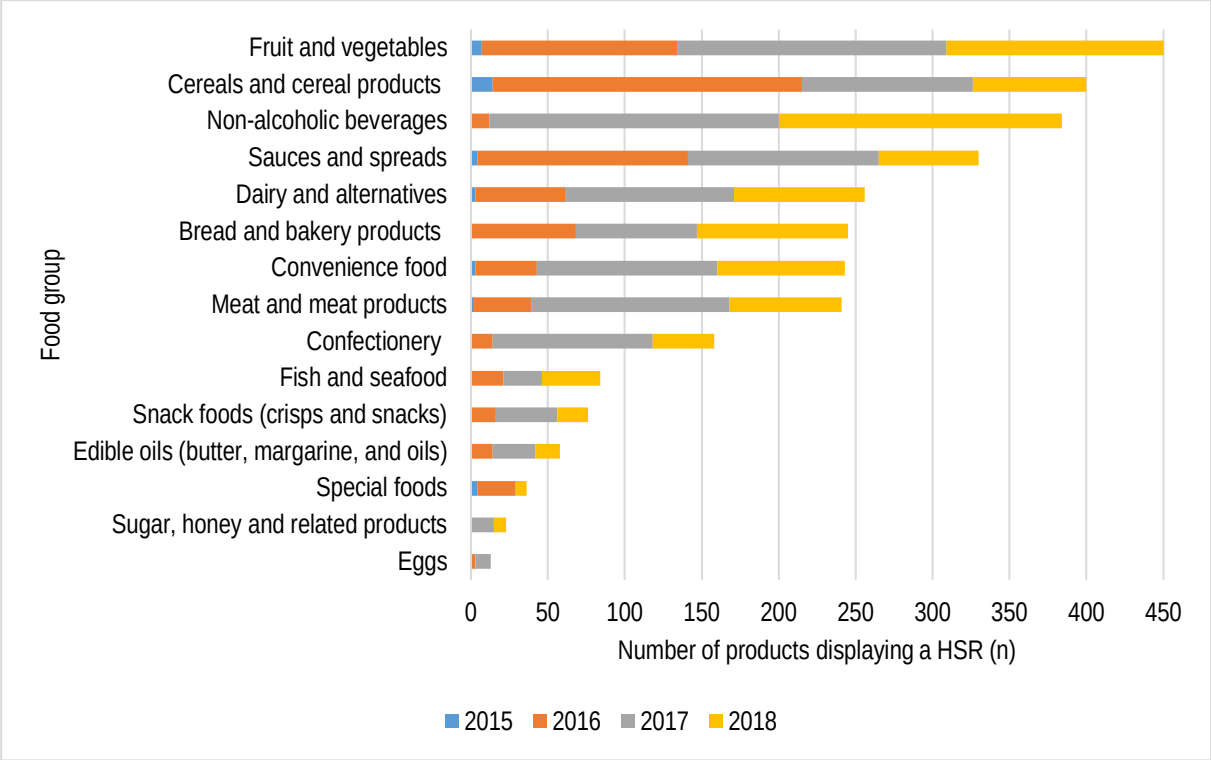
Table 4.3: Uptake of the Health Star Rating system for selected food groups (2015 to 2018)*

	2015			2016			2017			2018	
	Number of products displaying HSR		Contribution to household purchases (%)	Number of products displaying HSR		Contribution to household purchases (%)	Number of products displaying HSR		Contribution to household purchases (%)	Number of products displaying HSR	
Food group**	n	%		n	%		n	%		n	%
Bread and bakery products	0	0	0	68	3.9	4.2	147	9.4	15.5	246	14.6
Cereal and cereal products	14	1	4.7	215	14	22.6	326	22.1	31.2	400	26.4
Confectionery	0	0	0	14	1.8	1.2	118	14	15.7	158	18.4
Convenience food	3	0.4	2	43	5.9	10.4	160	22.3	27.9	243	33.8
Dairy and alternatives	3	0.2	0.4	61	3.2	3.4	171	8.8	7.2	256	13.4
Edible oils (butter, margarine, and oils)	0	0	0	14	4.4	5	42	13	16.7	58	17.7
Eggs	0	0	0	3	2.9	7	13	16.3	16.9	12	12.9
Fish and seafood	0	0	0	21	4.1	8.8	46	9.8	17.2	84	19.7
Fruit and vegetables	7	0.4	0.2	134	7.5	9.8	309	17.1	21.9	450	24.6
Meat and meat products	2	0.2	0.2	39	3.6	4.7	168	16.6	18.4	241	23.3
Non-alcoholic beverages	0	0	0	10	0.8	1.1	200	15.3	20.3	384	30.2
Sauces and spreads	4	0.2	0.1	121	7	15.8	265	15.4	29.9	330	18.5
Snack foods (crisps and snacks)	0	0	0	16	3.5	1	56	11.7	16.5	76	15
Special foods	4	5	25.8	29	35.4	54.9	29	46	70.8	36	60
Sugar, honey, and related products	0	0	0	0	0	0	15	4.9	20.9	23	7.8
Total	37	0.3%	0.8%	788	5.5%	7.4%	2,065	14.6%	19.1%	2,997	20.9%

*Includes HSR star graphic labels (all years) and HSR star graphic plus energy icon only labels in 2017 and 2018

** For each food group, number of unique products displaying HSR star graphic or energy icon. At baseline (2014) no products in the Nutritrack database displayed a HSR star graphic or energy icon

Figure 4.2. Number of products (n) displaying a HSR (2015 to 2018)



Uptake of the energy icon only

Of all products displaying HSR labels in 2018, 15% (n=452) displayed Option 5 (energy icon only). Products using this label format were predominantly confectionery (n=115, all chocolate and sweets) and non-alcoholic beverages (n=283) (**Table 4.4).** Within the non-alcoholic beverage group, categories with the highest uptake of the energy icon only label were fruit and vegetable juices (n=111), carbonated soft drinks (n=98), and energy drinks (n=34) (see Appendix 1 of the full report prepared by the National Institute of Health Innovation[10]).

[10] 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.

Table 4.4: Number and percentage of products displaying the Health Star Rating energy icon only label by food group (2017 and 2018)*

Food Group	2017 (n=2,065**)		2018 (n=2,997**)	
	n	%	n	%
Bread and bakery products	0	0	3	1.2
Cereal and cereal products	1	0.3	7	1.8
Confectionary	80	67.8	115	72.8
Convenience food	1	0.6	0	0
Dairy and alternatives	1	0.6	6	2.3
Edible oils	13	31	24	41.4
Eggs	0	0	0	0
Fish and seafood	0	0	0	0
Fruit and vegetables	1	0.3	3	0.7
Meat and meat products	0	0	1	0.4
Non-alcoholic beverages	153	76.5	283	73.7
Sauces and spreads	1	0.4	1	0.3
Snack foods	1	1.8	0	0
Special foods	0	0	1	2.8
Sugar, honey and other foods	2	13.3	8	34.8
Total	254	12.3	452	15.1

*Information on energy icon labels was only collected in 2017 and 2018.
**Total HSR labelled products

5 Label implementation of the Health Star Rating system

This section focuses on the implementation and consistency with the HSR system Style Guide, a sub-component of Area of Enquiry 1. The HSR system Style guide provides guidance for the application of the HSR on food packages.

5.1 METHODOLOGY

Assessment of the implementation of the HSR system in New Zealand was measured using the Nutritrack database, an inventory of label information from packaged foods available in New Zealand (see Section 2: General Methodology for further details).

As stated previously, the HSR system is designed in a manner which optimises its use for a variety of food packages through the flexibility in the amount of information provided to consumers. Companies can determine how they apply the HSR system to their products (**Figure 4.1**). The following section summarises the manner in which the HSR system has been displayed on products over time. It includes assessment of the variations permitted in the Style Guide, in addition to determining compliance with the HSR system Style Guide.

The Nutritrack database did not collect data on the uptake of HSR Option 5 (energy icon only) in years 2015 and 2016. Data on the uptake of HSR Option 5 (energy icon only) is available for 2017 and 2018 only.

In 2016, the Health Star Rating Advisory Committee (HSRAC) agreed to limit assessment of label implementation on a representative sample of HSR labelled products. This was based on the increased uptake of HSR labels and high compliance demonstrated in the Year 2 reports in Australia and New Zealand[11]. The HSRAC agreed to a random sampling plan of 500 HSR products for years 2017 and 2018[12].

5.1.1 Consistency in implementation against the Health Star Rating system Style Guide

A checklist was developed to assess the consistency of the HSR against Version 4[13] of the HSR system Style Guide. This checklist was based on that used by the National Heart Foundation of Australia. The checklist is presented in Appendix 1 and included the following parameters:

- Use and presentation of each of the five options for the HSR system
- Assessment of eligibility to display the HSR, by those food groups that are not permitted to display the HSR and those food groups for which the HSR was not intended
- Positioning and presentation of the HSR in relation legibility (including contrast with background)
- Inclusion of % Daily Intake (%DI) information on the graphic
- Use of other front of pack nutrition information (e.g. Heart Foundation Tick, Daily Intake Guide (DIG), Guideline Daily Amount (GDA), Treatwise)
- Presentation of graphic on multipacks
- As prepared or as sold

[11] Health Star Rating Advisory Committee (2017). Two year progress review report on the implementation of the Health Star Rating system – June 2014 – June 2016.
http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/673FC1FC9C6446C3CA2581BD00777FE8/$File/Two%20year%20progress%20review%20of%20HSR%20system%20-%20update%20report%20V2.pdf

[12] National Heart Foundation of Australia (2017) Report on the consistency in implementation of the Health Star Rating (HSR) system graphic with the HSR system Style Guide (sub-section of AOE1): Reporting timeframe: June 2016 to June 2017 – Year 3.

[13] Department of Health (2017) Health Star Rating System: Style Guide (Version 5). Canberra: Department of Health.
http://healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/651EEFA223A6A659CA257DA500196046/$File/HSR%20Style%20Guide-v5.pdf

- Values for energy and nutrients
- Nominated reference measure
- Use of *low* and *high* descriptors and consistency with requirements in Standard 1.2.7 of the *Australia New Zealand Food Standards Code*.

Version 4 of the HSR system Style Guide came into effect in June 2016 and has been used in the assessment for the years 2015 to 2018. The updates from the previous version of the Style Guide were: one HSR graphic should be used to represent each NIP or product in a multipack, and where food businesses choose to display an information panel providing detail on the HSR system, any HSR graphic displayed should be a duplicate of the HSR graphic displayed on the front of the pack. Version 5 of the HSR system Style Guide has been in effect since December 2017, this version has no substantive changes from Version 4, only minor editorial corrections.

5.1.2 Sampling plan: Identification of HSR options used and assessment against the HSR system Style Guide

NZFS conducted the work on the identification of the HSR option used and assessment of the implementation of the HSR system against Version 4 of the Style Guide utilising the Nutritrack database. All foods within the Nutritrack database were used in the sampling plan to enable an assessment of whether products were eligible and intended to carry a HSR.

A sampling plan was developed to select a representative sample of products from the database. It was determined that at least 500 products would be required for years 2017 and 2018 to assess the implementation of the HSR system against the HSR system Style Guide. This sample size was set in accordance with the Heart Foundation proposed methodology which was agreed at HSRAC in late 2016[14]. Smaller sample sizes were used in 2015 and 2016 due to the lower uptake in the HSR.

The number of samples selected were proportionally sampled by the first two tiers of Nutritrack hierarchical food categorisation, ensuring that each food group contained at least five products. A third level of proportionate sampling was then applied by product brand name.

Samples were selected for assessment at random using excel random number generation. The highest random numbers were selected according to the proportionate sampling plan. If a product image was unclear and not possible to assess, the next product in the sampling plan was selected. Final sample sizes for each food group in 2015 to 2018 are presented in **Table 5.1**. The label assessment was checked for accuracy by a second person on a random sample of 10% of the assessed labels.

[14] National Heart Foundation of Australia (2017) Report on the consistency in implementation of the Health Star Rating (HSR) system graphic with the HSR system Style Guide (sub-section of AOE1): Reporting timeframe: June 2016 to June 2017 – Year 3.

Table 5.1 Sample size of food groups assessed in the Health Star Rating implementation assessment (2015 to 2018)

Food group	Sample size			
	2015	2016	2017	2018
Bread and bakery products	-	29	36	41
Cereal and cereal products	14	90	79	71
Confectionary	-	10	29	28
Convenience foods	3	21	33	41
Dairy	3	30	45	51
Edible oils and oil emulsions	-	10	13	13
Eggs	-	3	5	5
Fish and seafood products	-	7	11	14
Fruit and vegetables	9	52	72	76
Meat and meat products	2	13	40	40
Non-alcoholic beverages	-	8	55	77
Sauces and spreads	4	48	62	16
Snack foods	-	7	14	14
Special foods	-	15	16	20
Sugars, honey and related products	4	-	5	5
Total	39	343	515	512

Note: the 2015 sample is the total number of the products displaying a HSR graphic in the Nutritrack database at the time of assessment.

Approximately 17% of the 2018 HSR labelled products were analysed to determine the HSR graphic option used and for consistency with the HSR system Style Guide. Given that uptake has increased, this proportion of products represented in the sample size was higher in previous years (24% in 2017 and 47% in 2016).

The distributions of HSR stars for the sample of 2018 foods (n=512) and the total number of foods with the HSR system graphic were compared to check that the sample was representative of the distribution of star ratings for all HSR labelled products. The distributions were similar, reflecting the random sampling method used.

5.2 RESULTS

5.2.1 Label implementation of the Health Star Rating system

Food product eligibility to display the Health Star Rating

The HSR system Style Guide specifies those products that should not display the HSR (i.e. not permitted) and those for which the HSR was not intended to apply, but are not excluded from the system. Assessment of the food products against these criteria was conducted for the 2017 and 2018 survey.

The specific products that are not permitted to display the HSR system include: infant formula products; foods for infants; formulated supplementary foods for young children; formulated supplementary sports foods; foods for medical purposes; alcoholic beverages; alcohol kits and kava. In the 2017 and 2018 survey almost all products assessed were permitted to display the HSR, with the exception of a few formulated supplementary sports foods (2017 n=3; 2018 n=2).

The intent of the HSR system is that it applies to processed packaged foods. The HSR system Style Guide states that HSR system was not intended for the following foods: foods where a

NIP is not required[15]; and single ingredient foods not intended to be consumed alone. While the HSR is not intended to be used on these foods, they are not excluded from using the system.

Approximately 5% of HSR labelled products included in the sample were not intended to the display a HSR (2017 5%; 2018 6%) (**Table 5.2**). These products were predominantly in the fruit and vegetable food group and represented 15% and 21% of HSR labelled products in the group for the 2017 and 2018 years, respectively. The types of food products that carried a HSR labelled for which the system was not intended generally included single ingredient foods in the fruit and vegetable category, or single ingredient foods not intended to be consumed alone. Examples of food products carrying a HSR for which the system was not intended include: frozen fruits and vegetables, dried fruit, fresh vegetables, nuts, seeds, herbs, sugar, flour, cacao powder and honey.

Table 5.2: Food product eligibility to display the Health Star Rating

	Not permitted				Not intended			
Food group	2017 (n, %)		2018 (n, %)		2017 (n, %)		2018 (n, %)	
Cereal and Cereal products	0	0	0	0	4	5	7	17
Fruit and vegetable products	0	0	0	0	11	15	16	21
Meat and meat products	0	0	0	0	0	0	1	2
Non-alcoholic beverages	0	0	0	0	1	2	0	0
Sauces and spreads	0	0	0	0	1	2	0	0
Special foods	3	19	2	10	0	0	0	0
Sugars and related products	0	0	0	0	4	80	3	60
Total	3	0.6%	2	0.4%	24	4%	29	5%

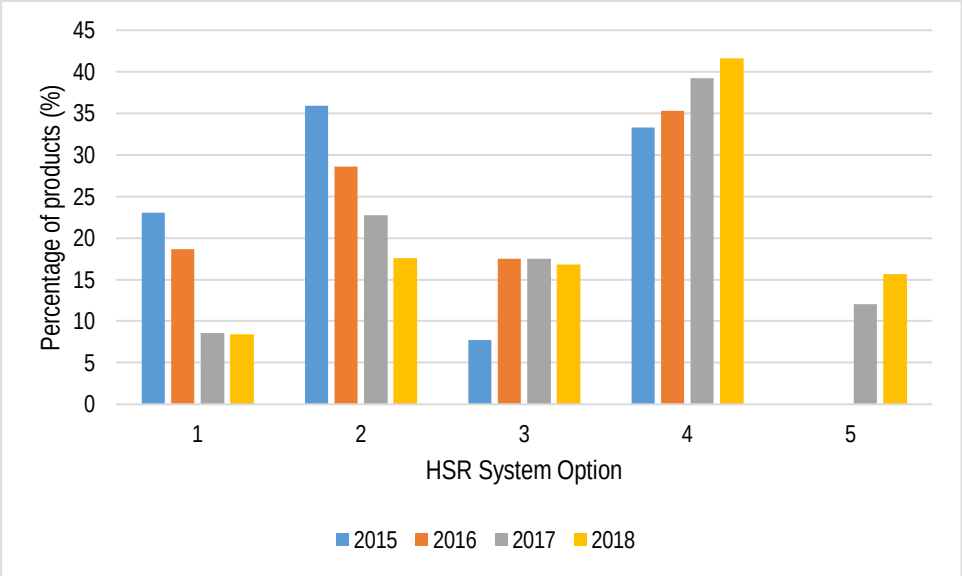
Health Star Rating options displayed on pack

In the Style Guide, five options for using the graphic on labels are available with varying levels of detail provided as to the nutritional content of the food (**Figure 4.1).** Option 1 provides the most detailed information, providing a HSR star graphic, energy content, nutrient content of three prescribed nutrients, and an optional nutrient. Option 5 displays only the energy content of the product.

Overall, Option 4, the HSR graphic only, was the most frequently used option across each year and its use has been steadily increasing since 2015 (42% in 2018 compared to 33% in 2015) (**Figure 5.1**). In 2018, the proportion of products using Options 2, 3 or 5 were similar (18%, 17% and 16%, respectively). The increase in uptake of Option 4 has been offset by a reduction in the proportion of products displaying Option 1 and 2 in years 2017 and 2018. The number of products using each option is presented in **Table 5.3**.

[15] Foods where a nutrition information panel is not required as outlined in Standard 1.2.8-5 of the Australia and New Zealand Food Standards Code. These foods include: alcohol; a herb, spice or herbal infusion; vinegar or imitation vinegar; salt, tea or coffee, food additives; processing aids; fruit, vegetables, meat, poultry, and fish that comprise a single ingredient or category of ingredients; gelatine; water; jam setting compound; alcohol kit; kava; food in a small package other than food for infants.
https://www.legislation.gov.au/Details/F2017C00311

Figure 5.1 Percentage of products displaying Health Star Rating system, by Health Star Rating option (2015 to 2018*)



*2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.

Table 5.3 Number of products displaying each Health Star Rating option in the sampling groups (2015 to 2018)

	2015 (n=39)	2016 (n=343)	2017 (n=515)	2018 (n=512)
Option 1	9	64	44	43
Option 2	14	98	117	90
Option 3	3	60	90	86
Option 4	13	121	202	213
Option 5	-	-	62	80

Note: Uptake figures from 2015 and 2016 do not include products displaying the energy icon only (Option 5) as this data was collected from 2017 onwards.

Health Star Rating graphic option by food group

The HSR options used in each food group in 2018 and 2017 are shown in **Figure 5.2** and **Figure 5.3**, respectively**.** Option 4, the option which only displays the HSR graphic, remains the most commonly used HSR system across the majority of food categories. This is consistent with 2015 findings[16].

There appears to be preferential selection of particular options in some food categories, over time, noting the sample size markedly increased from 2015 to 2017. In the cereals group there is a general preference to display more detailed information; 60% (n=43) of HSR labelled cereal products displayed either Option 1 or 2 in 2018.

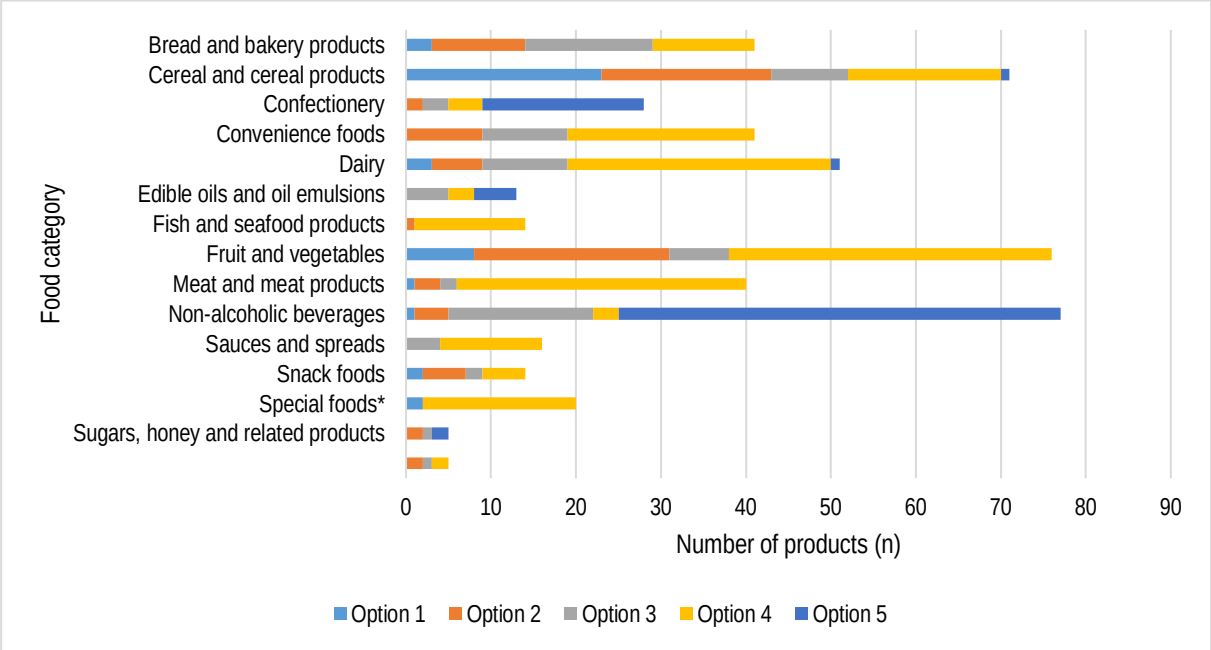
The energy icon only (Option 5) is mostly commonly used in the non-alcoholic beverages (68% in 2018; n=52), confectionary (68% in 2018; n=19) and edible oils (38% in 2018; n=5) food groups. This option is rarely used in other food groups. The selection of Option 5 for non-alcoholic beverages and confectionary is aligned with the suggested use of the energy icon in the HSR system Style Guide.

The non-alcoholic beverages group favours the display of Option 5 (energy icon only) and Option 3 (HSR graphic and energy icon); 68% (n=52), and 22% (n=17) in 2018, respectively.

[16] Ministry for Primary Industries (2017). Health Star Rating: Monitoring Implementation at Year Two. Ministry for Primary Industries Technical Paper No:2017/09.

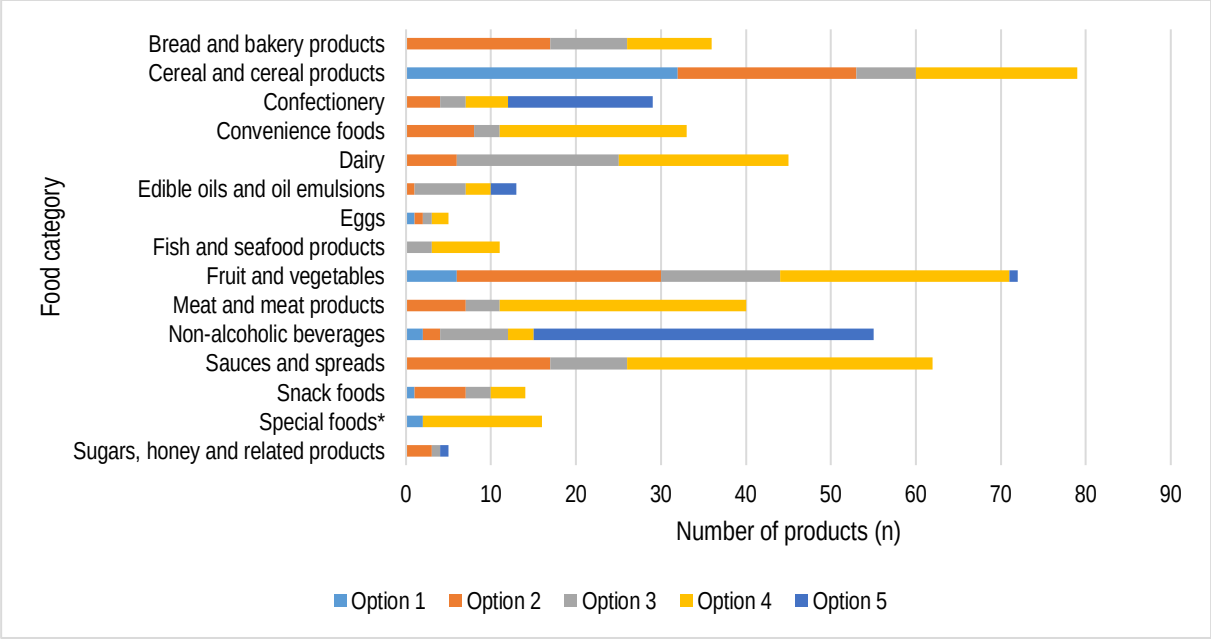
The preferential display of Options 3 and 5 suggests that information on energy content appears to be important in the non-alcoholic beverage group.

Figure 5.2 Number of products with Health Star Rating, by food group (2018; n =512)



* Special foods include baby foods, sports foods and diet foods.

Figure 5.3 Number of products with Health Star Rating, by food group (2017; n = 515)



*Special foods include baby foods, sports foods and diet foods.

Display styles

The HSR system Style Guide allows variation for displaying the HSR to optimise its use on a variety of styles of packaging. In 2018, the majority of products using nutrients icons (Options 1 to 3) displayed the HSR horizontally (78%; n=170), although this has decreased since previous years with more products opting to use the vertical display option (92% in 2015, 83% in 2016 and 84% in 2017)).

The HSR system Style Guide does not provide specific details on the format of the nutrient icons. A number of products display the nutrient icons in a different format to that presented in the Style Guide. These products generally display the icon in all one colour. The variation in presentation of the nutrient icons has increased from 4% in 2015 to approximately 20% of products in 2017 and 2018.

On a small number of packs using either Option 1 or 2, the HSR graphic was displayed on the front of pack, with the energy and prescribed nutrient icons wrapped around the side of the pack.

Second Health Star Rating graphic

Eight percent of products in 2017 and 2018 displayed a second HSR graphic on an additional side of the pack. This was predominantly in the cereal and cereal product group and the most frequent additional option used was Option 4.

In years 2017 and 2018 the number of stars displayed on the additional graphic matched that displayed on the front of pack HSR graphic for all products. This follows the clarification that HSR information panels used on pack should display a duplicate HSR graphic to that displayed on the front of pack in the Version 4 revision to HSR system Style Guide

The second HSR varied from other aspects of the HSR system Style Guide specifications for a small number of products in 2017 (5%; n=2) but increased to 27% in 2018 (n=11). These variations were largely due to design variations in the confectionary food group, whereby percentage daily intake values were displayed for a number of nutrients (prescribed nutrients and in some cases multiple optional nutrients). The nutrient icons were presented in the HSR system style but without the HSR graphic. It was unclear if this presentation should be considered as part of the HSR system or as an alternative option to display nutrient information on the back of pack in a manner similar to the Daily Intake Guide[17].

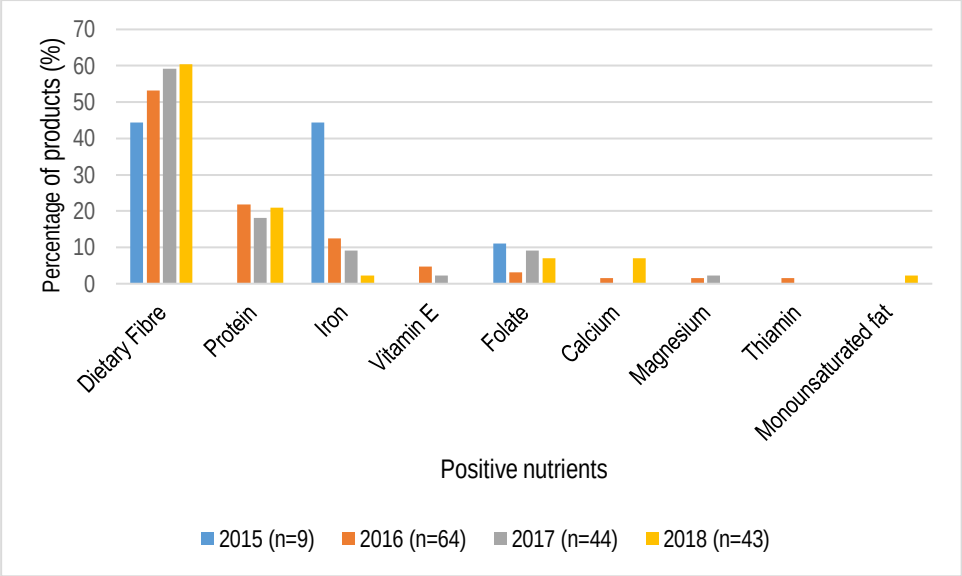
Optional Nutrients

Option 1 enables a product to display the amount of an optional nutrient in addition to displaying the amount of energy and the prescribed nutrients (saturated fat, sodium and sugar). In order to display an optional nutrient the conditions for a nutrition content claim as specified in the Food Standards Code must be met[18]. Nine different nutrients have been displayed across the years.

Figure 5.4 shows the percentage of Option 1 labelled products displaying each nutrient between 2015 and 2018. Dietary fibre was the most commonly used optional nutrient followed by protein across years 2016 to 2018. The number of products that used an optional positive nutrient in the sample in 2018 (8%; n=43) and 2017 (9%; n=44) has decreased from 19% in 2016 (n=64). The majority of optional nutrients were displayed on cereal and cereal products food group (53% in 2018). Fruit and vegetable products were the second most-likely food group to display an optional nutrient (19% in 2018, 14% in 2017) (**Table 5.4**).

[17] Australian Food and Grocery Council (2011). Daily Intake Guide. http://www.mydailyintake.net/
[18] Australia and New Zealand Food Standards Code (2002) Standard 1.2.7: Nutrition, health and related claims. https://www.legislation.gov.au/Series/F2015L00394

Figure 5.4 Number of products with optional nutrient (2015 to 2018)*



*Total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.

Table 5.4: Optional nutrient used, by food group*

Food group	Optional nutrient	Number of products using each descriptor			
		2015	2016	2017	2018
Bread and bakery products	Dietary Fibre	-	-	-	3
Cereal and cereal products	Dietary Fibre	4	26	21	15
	Folate	1	2	4	3
	Iron	4	8	4	1
	Protein	-	7	3	4
	Vitamin E	-	1	-	-
Confectionary	Protein	-	1	-	-
Dairy	Calcium	-	1	-	3
Eggs	Protein	-	-	1	-
Fruit and vegetables	Dietary Fibre	-	7	4	6
	Magnesium	-	1	1	-
	Monounsaturated fat	-	-	-	1
	Protein	-	1	-	1
	Thiamine	-	1	-	-
	Vitamin E	-	2	1	-
Meat and meat products	Protein	-	-	-	1
Non-alcoholic beverages	Dietary Fibre	-	1	1	1
	Protein	-	1	1	-
Sauces and spreads	Protein	-	1	-	-
Snack foods	Dietary Fibre	-	-	-	2
	Protein	-	-	1	-
Special foods	Protein	-	3	2	2
Total	All nutrients	9	64	44	43

*Total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.

High and Low Nutrient Icon Descriptors

Options 1 and 2 of the HSR graphic include the possibility of adding *low* descriptors to the prescribed nutrient icons and under Option 1 the *high* descriptor for an optional nutrient can be used. The proportion of products that used a *low* descriptor has decreased from 13% in 2016 (n=46) to 5% in 2018 (n=26) (**Table 5.5).** Fruit and vegetables and cereal and cereal products were the food groups who most commonly used low descriptors.

Table 5.5 Use of low descriptors by food group (2015 to 2018)*

Food group	Nutrient with low descriptor	Number of products using each descriptor			
		2015	2016	2017	2018
Bread and bakery products	Saturated fat	-	-	2	1
	Sugar	-	-	3	2
	Sodium	-	-	2	-
Cereal and cereal products	Saturated fat	6	16	2	-
	Sugar	8	8	7	2
	Sodium	3	10	6	7
Convenience foods	Saturated fat	-	1	2	1
	Sugar	-	2	2	-
	Sodium	-	-	1	-
Dairy	Saturated fat	-	-	-	-
	Sugar	-	-	-	-
	Sodium	-	-	-	2
Eggs	Saturated fat	-	-	-	-
	Sugar	-	-	1	-
	Sodium	-	-	-	-
Fruit and vegetables	Saturated fat	-	6	-	3
	Sugar	-	12	7	8
	Sodium	-	9	10	5
Meat and meat products	Saturated	-	-	-	-
	Sugar	-	-	-	1
	Sodium	-	-	-	-
Non-alcoholic beverages	Saturated fat	-	-	-	-
	Sugar	-	-	3	-
	Sodium	-	-	-	-
Sauces and spreads	Saturated fat	-	-	-	-
	Sugar	-	-	1	-
	Sodium	-	1	-	-
Snack foods	Saturated fat	-	1	2	-
	Sugar	-	1	1	1
	Sodium	-	1	1	-
Special foods	Saturated fat	-	2	2	2
	Sugar	-	2	2	2
	Sodium	-	2	2	2

*total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.
Note: Total products displaying a *low* descriptor 2015 n=8, 2016 n=46, 2017 n=34, 2018 n=26. One product may display multiple *low* descriptors.

Cereal and cereal products were the mostly like food group to display an optional nutrient and use a *high* descriptor (**Table 5.6**). Dietary fibre was the most commonly used optional nutrient with a *high* descriptor and it was used in bread and bakery products, cereal and cereal products, fruit and vegetables and one non-alcoholic beverage in 2018. Similar to the low descriptors, the use of *high* descriptors has decreased since 2016 from 8% (n=29) to 4% (n=20) in 2018.

Table 5.6 Use of high descriptors, by food group (2015 to 2018)*

Food group	Nutrient with high descriptor	Number of products using each descriptor			
		2015	2016	2017	2018
Bread and bakery products	Dietary fibre	-	-	-	2
Cereal and cereal products	Dietary fibre	-	11	7	7
	Folate	1	2	4	3
	Iron	4	8	4	1
	Protein	-	1	-	-
Dairy	Calcium	-	-	-	2
Fruit and vegetables	Dietary fibre	-	3	2	1
	Protein	-	-	-	1
	Vitamin E	-	2	1	-
Meat and meat products	Protein	-	-	-	1
Non-alcoholic beverages	Dietary fibre	-	-	1	-
Special foods	Protein	-	2	2	2

*total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.
Note: Total products displaying a *high* descriptor 2015 n=5, 2016 n=29, 2017 n=21, 2018 n=20. One product may display multiple *low* descriptors.

Percentage of Daily Energy Intake

The HSR system Style Guide states that additional information on the percentage daily intake of energy (%DI) can be provided on the energy icon under certain conditions. The %DI can only be used on products which are eligible to use the 'per pack' or 'per [serve size]' nominated reference measures.

Use of the %DI has increased over time. In 2018, 32% of the products that used Options 1, 2, 3 or 5, included %DI information in the energy icon (n=97/299). The majority of products used the %DI based on a 'per serve' basis (73%). Per serve was also the most commonly used reference measure for %DI information in 2016 (68%).

Previous data only includes Options 1 to 3. Use of the %DI information for Options 1 to 3 was 11% in 2015 and 3% in 2016. Comparatively, this was 7% in 2017 and 14% in 2018 when Option 5 was also included.

Most products providing additional %DI information were doing so in accordance with the HSR system Style Guide (89% 2017; 91% 2018). Of the few that were not aligned with the HSR system Style Guide, this was largely due to incorrect use of the appropriate reference measure (i.e. utilized 'per pack' or per [serve size] incorrectly); incorrect rounding, and in one instance %DI was given on 'per 100 g' basis.

Nominated reference measure

The most commonly used nominated reference values are 'per 100g' or 'per 100mL', followed by 'per [serve size]' (**Table 5.7**). As the number of products displaying a HSR has increased, the variety of nominated reference measures used has also increased.

The number of inconsistent reference measures has increased since 2015 (**Table 5.7**). This is primarily driven by the 'per [serve size]' reference measure being used incorrectly. For example, the use of 'per [serve size]' where there is no industry standardised serve available to use. Many products displaying the 'per [serve size]' option do not specify the serve size in grams. A smaller number of products used the 'per [reference portion]' option for products which were not multipacks.

Table 5.7 Nominated reference values (2015 to 2018)*

Nominated reference measure	2015 (n=26)	2016 (n=210)	2017 (n=311)	2018 (n=298)
'per 100 g' or 'per 100 mL'	19	185	203	177
'per 100 g' or 'per 100 mL' prepared	4	7	24	8
'per pack'	0	2	10	14
'per [reference portion]'	3	3	9	10
'per [serve size]'	0	-	33	39
Inconsistent reference measure	0	11	32	50

*total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.

Multipacks

Of the 2018 sample of foods, 66 (13%) are multipacks with all but three containing one product variant. Of the remaining multipack products, two displayed an average HSR and one displayed multiple HSRs, one for each different variant. In the 2017 sample there were 53 (10%) multipacks, one displayed an average rating and the remaining products contained only one variant. This is similar to the 2016 and 2015 findings.

5.2.2 Consistency of Health Star Rating system graphic with the Health Star Rating system Style Guide

To align with the Heart Foundation, consistency of the HSR against the HSR system Style Guide was conducted in two ways: assessment of design variations and assessment of technical variations. Design variations were identified as those for which the HSR was displayed in a manner that differed from the Style Guide but the Style Guide was ambiguous as to whether this would constitute an inconsistency.

Design variations

Table 5.8 highlights the design variations identified over the four years assessed. Only 4% or products had design variations to the HSR system Style Guide. These predominantly relate to issues of legibility and general visibility of the product.

It is important to note that the criteria used for a background contrasting with the HSR graphic was adjusted after the Year Two evaluation to ensure the assessment was in line with the Heart Foundation evaluation criteria. For this reason, the 2015 and 2016 contrasting inconsistency results are not comparable with the 2017 and 2018 findings. The percentage of products with an illegible HSR has remained low (less than 1%) since 2016, suggesting that regardless of contrast the legibility of the HSR has remained high. The label background did not provide sufficient contrast with the HSR graphic for 2-3% of products using Options 1 to 4 in 2017 and 2018.

Table 5.8: Design variations of the HSR system used on pack to that specified in the Style Guide

Section of HSR system Style Guide	Number of products (%)*			
	2015	2016	2017	2018
HSR graphic (Options 1 to 4)	N=39	N=343	N=453	N=432
Background not contrasting with HSR graphic[1]	12 (31%)	32 (9%)	12 (3%)	10 (2%)
HSR graphic and/or icons not legible	3 (8%)	2 (<1%)	3 (<1%)	3 (<1%)
'Health Star Rating' words not prominent	2 (5%)	6 (2%)	3 (<1%)	1 (<1%)
Additional FOPL in close proximity to HSR	-	-	4 (<1%)	2 (<1%)
Energy and nutrient icons (Options 1 to 3; 5)	N=26	N=222	N=313	N=299
Serve size 'per row' but gram amount not stated, implied to be same in the NIP	-	-	2 (<1%)	
Prescribed nutrient icons (Options 1 to 3)	N=26	N=222	N=251	N=219
Icons not placed in the correct orientation (i.e. above HSR graphic)	-	-	2 (<1%)	3 (1%)
Decimal points not used for nutrients <1 g	-	-	11 (4%)	3 (1%)
Total	ND	ND	23 (4%)	21 (4%)

*In the 2015/2016 assessment the background was considered to not be sufficiently contrasted with the HSR system graphic when the colour surrounding the graphic and inside the icons was similar or when the background colour was darker than that used for the icons. In the 2017/2018 assessment the criteria for a contrasting background was changed to align with Heart Foundation criteria. Total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.

Technical variations

The proportion of foods that were consistent the HSR system Style Guide was assessed for 2017 and 2018. The findings showed that in the 2018 sample, 16% (n=82/512) of products were inconsistent with the HSR system Style Guide (**Table 5.9**). This is a slight increase from the previous year, where 10% (n=54/515) of products were found to be inconsistent.

The main source of inconsistency was in the use of an incorrect nominated reference measure. This has steadily increased, with 5% of products using an incorrect nominated reference measure in 2016, compared to 8% in 2017 and 16% in 2018.

There were less inconsistencies between the values stated on the HSR energy icons and prescribed nutrient icons and those stated on the NIP (9% in 2016, compared to 1% in 2018) than previously assessed.

While only present on a small number of labels, other areas of inconsistencies with the HSR system Style Guide include:

- HSR graphic not displayed on the front of pack
- HSR graphic rating was not between 0.5 – 5 stars
- HSR graphic value not matching the numerical rating value
- Incorrect number of significant figures and decimal places for energy and prescribed nutrient icons
- Serve size inconsistent with that listed in the NIP
- Incorrect use of *low* descriptor for prescribed nutrients

Table 5.9 Technical variations from the HSR system Style Guide (2015 to 2018)[+]

Section of HSR system Style Guide	Number of products (%)			
	2015	2016	2017	2018
HSR System graphic	n=39	n=343	n=453	n=432
HSR graphic not on front of pack	-	12 (3%)	5 (1%)	3 (<1%)
HSR graphic rating is not between 0.5 – 5 stars	-	-	1 (<1%)	5 (1%)
HSR graphic value does not match the numerical rating value	-	-	3 (1%)	3 (<1%)
Star graphic used elsewhere on pack displays different number of stars to that on front of pack*	1 (2%)	1 (<1%)	-	1 (<1%)
Energy icon, %DI and nominated reference measure (Option 1-3; 5)	n=26	n=222	n=313	n=299
Energy value does not match NIP	1 (4%)	10 (4%)	3 (<1%)	7 (2%)
Energy value not given with correct number of significant figures	-	9 (4%)	6 (2%)	10 (3%)
%DI used incorrectly			8 (3%)	9 (3%)
%DI for energy given on per 100g basis	-	1 (<1%)	1 (<1%)	-
Incorrect reference measure	-	11 (5%)	26 (8%)	47 (16%)
Reference measure incorrectly positioned	-	-	-	1 (<1%)
Different serve size to that used in the NIP	-	-	3 (1%)	5 (2%)
Prescribed nutrient icons (Option 1-2)	n=23	n=162	n=161	n=133
Prescribed nutrient icons missing	-	-	-	1 (<1%)
Energy and nutrient icons not in correct order	-	1 (<1%)	-	-
Values in nutrient icons do not match NIP	-	14 (9%)	2 (1%)	2 (1%)
Incorrect number of decimal places displayed	-	2 (1%)	1 (<1%)	6 (5%)
Use of *low* descriptor does not meet requirements in *Australia New Zealand Food Standards Code*	-	1 (<1%)	3 (2%)	2 (1%)
Optional nutrient icons (Option 1)	n=9	n=44	n=44	n=41
Optional nutrient does not meet requirements in *Australia New Zealand Food Standards Code*	-	2 (4%)	-	-
Total	ND	ND	54 (10%)	82 (16%)

[+] Total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.

* Version 4 (June 2016) of the HSR system Style Guide recommends that the HSR graphic should show the same number of stars if it is used elsewhere on the pack to explain the HSR system.

5.2.3 Additional front of pack labelling schemes

The HSR system Style Guide states that while the DIG, health logos and certification schemes may coexist with the HSR system graphic, they should be positioned on the label so that consumers are not led to believe that they are linked to the HSR system.

Daily Intake Guide (DIG)

The presence of DIG front of pack information on HSR labelled products has remained relatively constant since 2016. A small number of products displayed the DIG close to the HSR. The manner in which the DIG was displayed in association with the HSR was similar within a brand. In 2015, none of the HSR labelled products displayed the DIG in addition to HSR.

Table 5.10 Number of products with the Daily Intake Guide and location (2016 to 2018)*

Location of DIG	2016	2017	2018
Close to HSR and front of pack	3	2	2
Front of pack	1	-	1
Total	4	2	3

*total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.

Heart Foundation Tick

The Heart Foundation tick was displayed on a small number of labels from 2015 to 2018 (**Table 5.11**). In most cases, the Heart Foundation Tick was not displayed close to the HSR graphic. In December 2015 the National Heart Foundation of Australia announced that the

programme would not continue in Australia[19] and a similar announcement was made in October 2016 in New Zealand[20]. As expected, the Heart Foundation Tick has remained on some products as these labels are still being used, but their presence has decreased considerably since 2016.

Table 5.11: Number of products with the Heart Foundation Tick and location of Tick (2016 to 2018)*

Location of Heart Foundation Tick	Number of products		
	2016	2017	2018
Front of pack	16	14	3
Front of pack next to HSR graphic	5	2	0
Not front of pack	2	2	0
Total	23	18	3

*total number of assessed products: 2015 n=39, 2016 n=343, 2017 n=515, 2018 n=512.

Be treatwise

Be treatwise is a confectionary industry initiative designed to provide consumers with information to help explain the place that confectionary has as a treat food as part of a balanced diet[21]. The 'Be treatwise' logo was used in conjunction with the HSR on 65% and 54% of confectionary products (excluding jelly) in 2018 and 2017, respectively (2018 n=15; 2017 n=13). In general, the products displayed Option 5 (energy icon only) of the HSR with a 'Be treatwise' statement positioned adjacent to the HSR. Further 'Be treatwise' information was often provided on the back of pack and in some instances included the suite of nutrient information displayed in a manner similar to the nutrient icons of the HSR system Style Guide. This data was not collected in previous years.

[19] National Heart Foundation of Australia (2015). Media release: Thank you Tick for the past 26 years…. Accessed 10th September 2018. https://www.heartfoundation.org.au/news/thank-you-tick

[20] National Heart Foundation of New Zealand (2016). Media release: Heart Foundation retires Tick programme. Accessed 10th September 2018. https://www.heartfoundation.org.nz/about-us/news/media-releases/heart-foundation-retires-tick-programme

[21] Be treatwise. What is Be treatwise. Accessed 7th September 2018. http://www.betreatwise.info/about-be-treatwise/#verticalTab1

6 Consumer awareness and ability to use the Health Star Rating system correctly

6.1 INTRODUCTION

The Health Promotion Agency ran the HSR consumer marketing and education campaign from March 2016 to June 2018. The campaign messages focused on consumer awareness, recognition and use of the HSR and assisting consumer understanding.

The Health Promotion Agency commissioned Colmar Brunton to conduct a baseline consumer survey in 2015, with two follow up waves in 2016 and 2018. The surveys monitored consumers' awareness, understanding and correct use of the HSR system since implementation of the campaign.

These surveys inform Area of Enquiry 2 of the monitoring and evaluation framework. A summary of the findings is presented here. Full details of the methodology and results are presented in the latest report by Colmar Brunton (2018)[22].

6.2 METHODOLOGY

Outcomes for the monitoring report were divided into four key areas:

1. awareness (prompted and unprompted) of the HSR system;
2. consumer knowledge and understanding of the HSR system including what the HSR graphic means on packaging;
3. whether consumers can use the HSR system accurately; and
4. the level of trust consumers have in the HSR system.

These four areas were measured at the total population level, and by the population sub-groups of Māori, Pacific and low income families. The selection of the population sub-groups is aligned with priority groups of the consumer marketing and education campaign, which included grocery shoppers in households that have at least one child under the age of 14 years, with an emphasis on Māori, Pacific and low income families.

6.2.1 Survey design and sample

The online surveys took place on three different occasions. The first survey was conducted between 19 October and 16 November 2015 with 1,678 shoppers; the second survey between 12 September and 23 October 2016 with 1,658 shoppers; and the third survey between 2 February and 10 March 2018 with 1,645 shoppers.

Eligible participants were required to be the main or joint grocery shopper, with a particular focus on those from low income, Māori and Pacific demographics who had children under 14 years of age. Shoppers from the general population were also targeted to provide context for the results of these priority groups.

Sampling approaches differed for priority groups. Māori and general population participants were recruited via Colmar Brunton or Survey Sampling International online panels. Only a small number of Pacific people belonged to these online panels so another approach was developed to recruit this priority group. As a result, Pacific people were recruited in central locations in South Auckland where interviewers approached every 'nth' person until an

[22] Colmar Brunton (2018) 2018 Health Star Rating monitoring and evaluation: Year 2 follow-up research report. Wellington: Health Promotion Agency: Accessible from: https://www.hpa.org.nz/research-library/research-publications/2018-health-star-rating-hsr-monitoring-and-evaluation-report

eligible respondent was found ('n' was determined at the time by the supervisor and was dependent on the frequency of passers-by). These participants completed the online questionnaire at a local internet café in exchange for a $15 grocery voucher.

The sample aimed to be sufficiently representative of New Zealand grocery shoppers to measure trends and changes over time. Quotas were applied at the sampling and selection stage during recruitment to enable the survey to be as representative as possible and final results were weighted to be representative of shoppers.

- The general population and low income samples were weighted in several steps to align with census population counts (by age and gender, and household size and income), and to adjust for over-sampling of low income households.
- The Māori sample was weighted to align to census counts for household income and number of households in each region of New Zealand.
- The Pacific sample was not weighted to census counts, in part due to the different sampling approach taken for Pacific people. In 2016 and 2018, the Pacific sample was weighted by gender to align the sample profile with that achieved in 2015. As in 2015, caution is needed when comparing Pacific shoppers' responses with those from other groups. The main value in results for Pacific respondents is viewing how patterns have changed over time for the Pacific group.

6.2.2 Survey questionnaire

The survey questionnaire was designed in collaboration with the Health Promotion Agency, NZFS and Ministry of Health. The surveys evaluated consumers' awareness, knowledge, perceptions, correct use and trust in the HSR. The 2016 and 2018 follow-up surveys repeated the questions of the 2015 survey and also included questions related to the consumer campaigns.

The questionnaire used in the surveys consisted of the following topics:

- **Demographics** – gender, age, ethnicity, household income, education;
- **General views and behaviour regarding healthy food choices;**
- **Awareness of HSR** – unprompted and prompted awareness of the HSR system;
- **Understandings, perceptions and correct use of the HSR system** – what the HSR graphic on a product means, comparison of products with other star ratings, whether the HSR system can be trusted;
- **Use of the HSR** – whether a consumer has purchased a food with the HSR graphic and whether the HSR system graphic influenced the purchasing decision; and
- **HSR campaign recognition (2016 and 2018 only)** – recognition of the campaign and key message, perception of the HSR advertising, and influence on behaviours (prompted and unprompted).

A summary of the sample characteristics of survey participants is provided in **Table 6.1.**

Table 6.1 Sample characteristics of the survey participants

Population sub-group	General population %			Low income with children under 14 %			**Māori with children** under 14 %			Pacific with children under 14 %		
	2015	2016	2018	2015	2016	2018	2015	2016	2018	2015	2016	2018
Base (n)	1067	1045	1037	324	309	316	300	310	301	311	303	307
Gender												
Male	46	45	45	38	38	38	28	29	29	21	21	21
Female	54	55	55	62	62	62	72	71	71	79	79	79
Age (years)												
18-29	13	15	15	20	17	36	18	15	18	30	32	32
30-49	43	41	41	71	75	59	67	66	68	55	57	56
50-69	31	31	31	9	8	5	15	18	14	15	11	12
70+	13	13	13	0	0	0	1	0	0	0	0	1
Ethnicity												
New Zealand European	75	75	72	77	74	67	49	36	33	3	3	4
New Zealand Māori	12	12	12	18	9	12	100	100	100	7	8	8
Samoan	3	2	2	4	2	4	1	3	1	54	53	42
Cook Island Māori	1	1	0	2	1	2	1	1	0	29	31	40
Tongan	0	0	0	1	2	1	0	1	0	14	16	16
Niuean	0	1	1	0	2	0	0	0	0	6	3	6
Another Pacific Island group	0	1	1	1	2	2	0	1	1	2	2	2
Chinese	5	5	5	3	3	5	1	0	0	1	1	0
Indian	4	4	4	2	7	6	0	0	1	0	0	0
Another Asian group	3	3	3	3	4	4	0	1	0	0	0	0
Another European group	4	3	4	5	4	4	3	1	1	1	1	1
Another ethnic group	2	3	3	1	4	2	0	0	0	1	0	0
Don't know	0	1	0	0	0	0	0	0	0	0	0	0
Children under 14 years in household												
Yes	30	29	27	100	100	100	100	100	100	100	100	100
No	70	71	73	0	0	0	0	0	0	0	0	0
Annual household income												
$20,000 or less	5	3	5	9	8	14	6	11	8	32	33	41
$20,001-$30,000	12	10	12	20	13	15	17	12	15	21	17	21
$30,001-$50,000	20	23	20	40	45	49	18	18	18	22	23	13
$50,001-$70,000	15	20	14	32	34	22	17	17	17	11	12	10
$70,001-$100,000	21	19	16	0	0	0	20	20	20	9	8	7
$100,001-$150,000	18	15	20	0	0	0	15	17	16	4	3	6
$150,001 or more	8	9	13	0	0	0	7	6	6	2	3	2

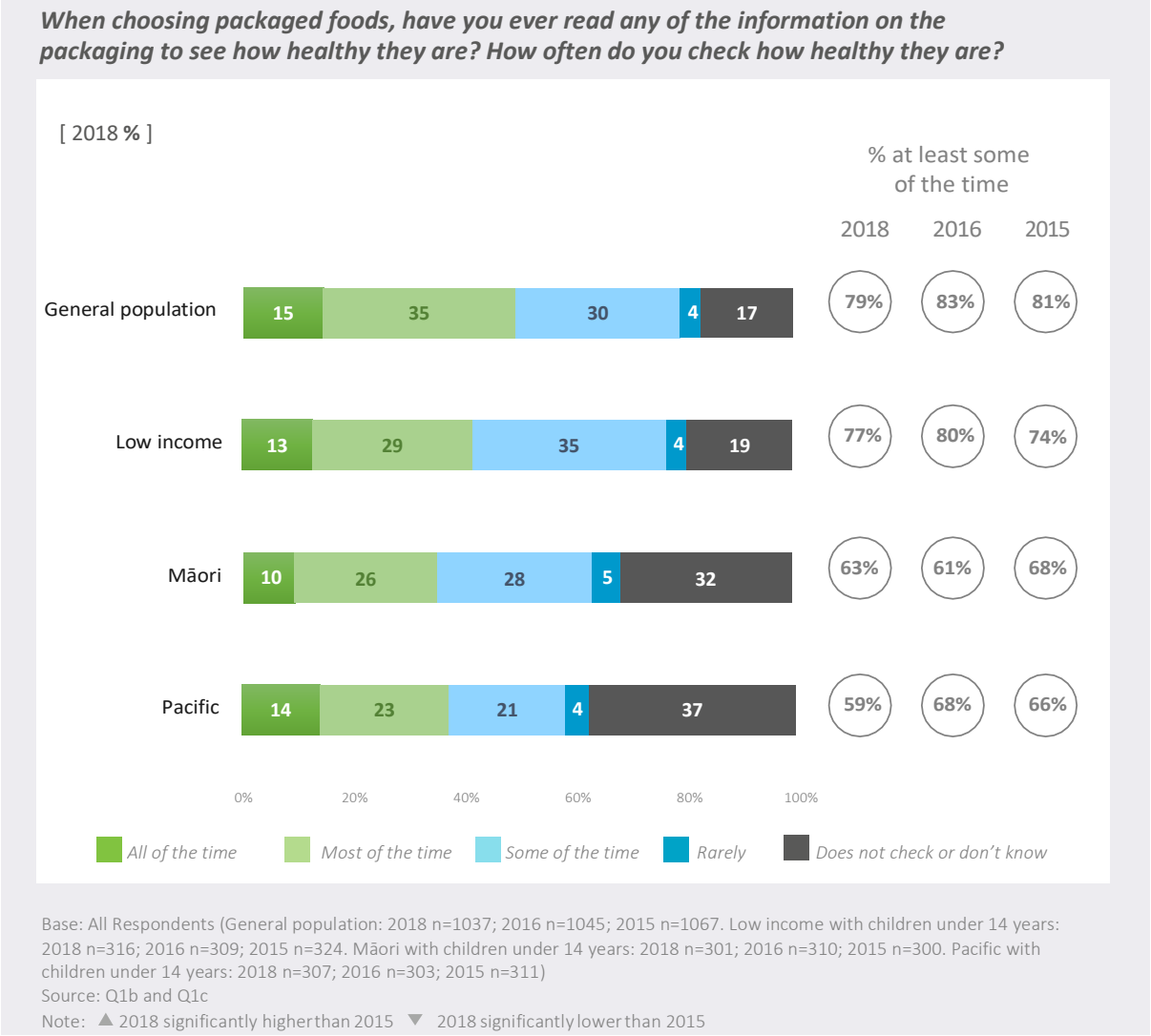
Note: Percentages in green are significantly higher than 2015. Percentages in red are significantly lower than 2015.

6.3 RESULTS

6.3.1 General views and behaviour regarding healthy food choices

Shoppers were asked whether they read information on food packages to decide how healthy a product was and, if so, how often. In 2018, 79% reported checking information at least some of the time (**Figure 6.1**). This was similar to 2015 and 2016 findings. The proportion of Māori and low income shoppers reading information on food packaging was also relatively stable (77% in 2018). While the number of Pacific shoppers reporting reading information on food packages in 2018 (59%) was significantly lower than 2016 (68%), there was no significant difference between 2018 and 2015.

Figure 6.1 Consumer use of label information



Base: All Respondents (General population: 2018 n=1037; 2016 n=1045; 2015 n=1067. Low income with children under 14 years: 2018 n=316; 2016 n=309; 2015 n=324. Māori with children under 14 years: 2018 n=301; 2016 n=310; 2015 n=300. Pacific with children under 14 years: 2018 n=307; 2016 n=303; 2015 n=311)
Source: Q1b and Q1c
Note: ▲ 2018 significantly higher than 2015 ▼ 2018 significantly lower than 2015

Checking products for nutrition information

Shoppers who read nutrition information on packages at least some of the time were asked how easy or difficult it is to decide how healthy a packaged food is. Over half of the general population (53%), low income (54%), Māori (55%) and Pacific (57%) shoppers said it is at least quite easy to determine how healthy packaged foods are. These findings were similar to 2015 baseline results.

6.3.2 Awareness of Health Star Rating

Unprompted awareness of food labels

Shoppers were asked if they could think of anything on a food package to help them decide how healthy a product is. The results indicate that awareness of the HSR system has increased since 2015 (**Table 6.2**). In the general population, 16% of shoppers identified the HSR without prompting, a significant increase from 3% in 2015. In 2018, significantly more low income (23%), Māori (18%) and Pacific (13%) shoppers mentioned the HSR unprompted compared to 2015. Close to one in four (24%) shoppers who have seen the advertising campaign mentioned the HSR without prompting compared to 9% of those who have not seen it.

However, similar to previous years, the Heart Foundation Tick remained the most commonly mentioned front of pack label without prompting in 2018 (26%), but this had significantly decreased since 2015 in the general population (32%).
Of the nutrition information displayed, the most commonly identified aspects of the label used to determine how healthy a product was among the general population were: sugar content (31%), fat content (19%), looking at the ingredients list (18%) and nutrition information panel (15%).

Table 6.2 Components of a food label that are most useful to determine how healthy a product is (unprompted)

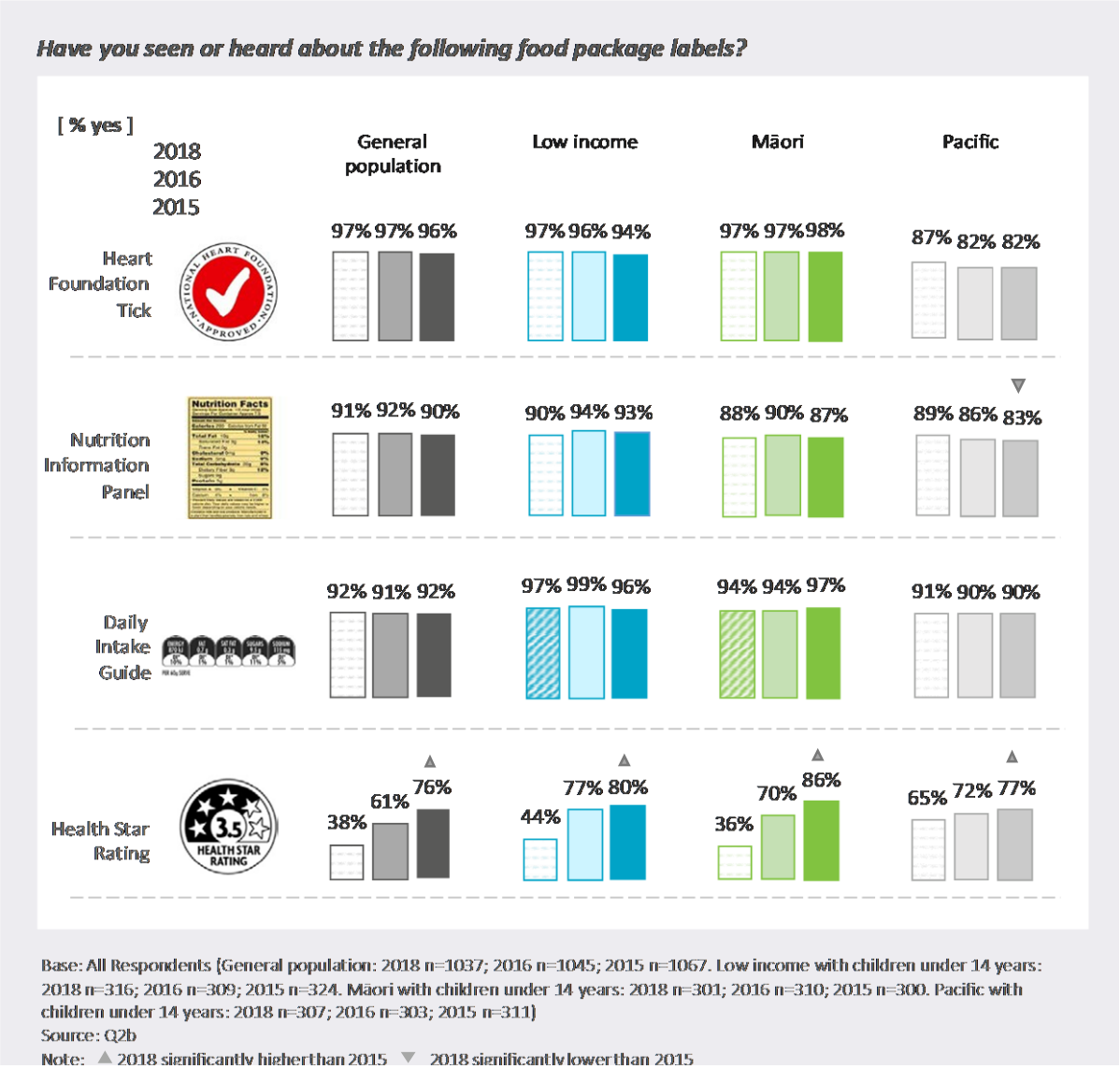
Population sub-group	General population %			Low income with children under 14 %			**Māori with children** under 14 %			Pacific with children under 14 %		
	2015	2016	2018	2015	2016	2018	2015	2016	2018	2015	2016	2018
Base (n)	1067	1045	1037	324	309	316	300	310	301	311	303	307
Independent health labels	35	40	39	47	49	41	36	46	46	16	23	24
Heart Foundation tick	32	33	26	42	39	23	33	40	35	14	15	13
Health Star Rating	3	9	16	3	15	23	1	10	18	1	8	13
Recommended Daily Intake	3	4	3	6	5	3	3	4	3	2	2	1
Nutrition Information	59	65	58	55	55	42	47	47	44	34	36	28
Sugar content/percentage of sugar	34	36	31	21	27	21	29	21	19	13	18	15
Fat content	21	22	19	17	13	11	20	15	8	15	18	9
Looking at the ingredients/contents list	18	21	18	22	17	14	13	15	15	10	6	8
Looking at the nutrition table /information / panel	15	20	15	16	17	10	9	17	13	7	9	5
Salt content	12	11	9	6	6	4	6	6	5	4	4	3
Check preservative/additive/ colouring/flavour/chemical content	10	10	6	11	12	4	7	5	4	4	1	1
Energy content (calories/kilojoules)	6	6	6	5	4	2	5	5	5	5	7	4
Amount of carbohydrates	5	5	5	3	3	3	4	2	3	3	3	2
Sodium content/percentage of sodium	5	5	4	3	3	1	7	5	3	2	2	1
Types of fat/saturated/monounsaturated fat/trans fat	5	3	4	3	2	4	2	2	2	2	1	1
Protein content	2	2	2	2	1	2	0	0	3	1	2	1
Ingredients with numbers after them	1	2	0	1	2	0	1	1	0	1	0	0
Amount of fibre	1	1	2	1	0	0	1	1	1	1	1	0

Note: Percentages in green are significantly higher than 2015. Percentages in red are significantly lower than 2015.

Prompted recognition of the HSR system

Participants were prompted with images of four different nutrition labels (Heart Foundation Tick, Nutrition Information Panel, Daily Intake Guide and HSR), and asked if they recognised the labels. In 2018, over three quarters (76%) of shoppers in the general population had seen or heard of the HSR, a significant increase from 38% in 2015 (**Figure 6.2**). This significant increase was seen across all priority groups: 80% of low income shoppers, 86% of Māori shoppers and 77% of Pacific shoppers. The recognition of other nutrition labels remained high and was comparable to the results of the 2015 baseline survey.

Figure 6.2 Prompted awareness of front of pack nutrition labels



Shoppers were more likely to recognise the HSR if they had seen the HSR campaign. In the general population, 89% of shoppers who had seen the campaign were aware of the HSR, compared to 66% of shoppers who have not seen the campaign. This proportion was similar for the three priority groups.

Shoppers in the general population reported seeing the HSR most often on food packaging (from 51% in 2015 up to 62% in 2018), or saw or heard about it via TV advertisements (from 19% in 2015 up to 29% in 2018).

6.3.3 Understandings, perceptions and correct use of Health Star Rating

Understanding of what the HSR system means

While self-reported knowledge of HSR has significantly increased for general population (5% knew at least a fair amount about the HSR in 2015 and this has risen to 14% in 2018) and priority group shoppers, there has been no significant change in the unprompted, accurate understanding of the HSR in 2018 compared to 2015. In 2018, approximately half of low income (51%), Māori (49%) and general population (49%) shoppers, and one third of Pacific shoppers (32%) provided at least one comment suggesting they have an accurate understanding of the HSR.

Shoppers in the general population and low income shoppers that have seen the campaign were more likely to provide comments suggesting an accurate understanding, compared to those who have not seen the campaign. There was no significant difference in apparent understanding among Māori and Pacific shoppers who had seen the campaign based on comments, compared to those who had not.

Those less likely to give answers indicating an accurate understanding of how to use the HSR included:

- those in the general population with an annual household income up to $50,000 (41% compared to 53% of those with a higher income). This trend was also observed within priority groups;
- those in the general population, aged 60 years and over (41% compared to 52% of those under 60 years of age).
- Those in the general population with no children aged under 14 years of age (45% compared to 59% of those with children); and
- Men in the general population (44% compared with 53% of women).

Understanding of how to use the system

Shoppers were asked a series of true or false questions to assess their understanding of the system. The results indicate that shoppers' prompted understanding of how to use the HSR remained relatively high. In 2018, 68% of the general population correctly identified that within a food category, the product with more stars is healthier, compared to 67% in 2015 and 2016. The results are also similar for the three priority groups between 2015 and 2018. However, those who have seen the 2018 campaign are more likely to answer correctly (75%) than those who have not seen the campaign (63%).

Compared to baseline, similar proportions of shoppers in the general population understood that not all packaged products are required to have a HSR (38% in 2018 compared to 34% in 2015). However, this was not the case for Māori shoppers who were significantly more likely to understand that not all packaged foods require a HSR (45% in 2018 compared to 27% in 2015). Within the general population and priority groups, in 2018 compared to baseline, there were no significant differences in understanding that: if a product has five stars, it does not mean you can eat as much of it as you want; the HSR system was developed by food experts; and the HSR system is backed by government (**Figure 6.3).**

Figure 6.3 Consumer understanding of different HSR aspects

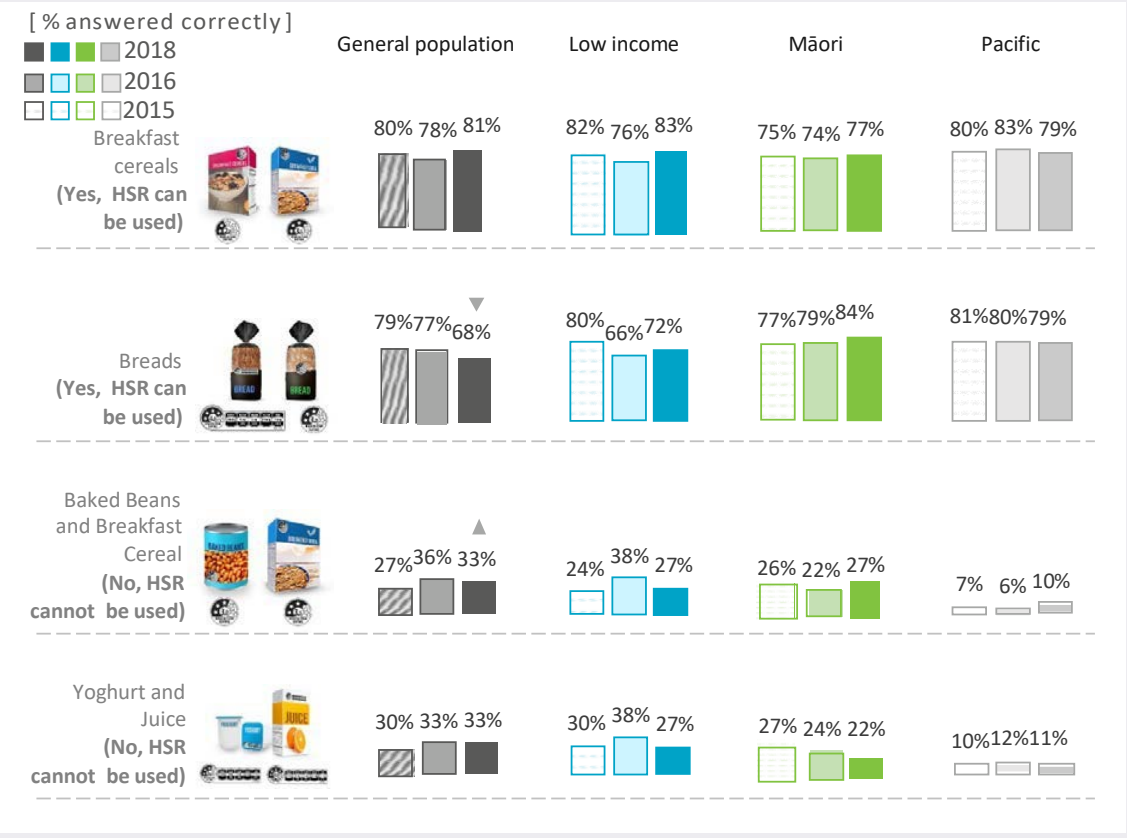
Ability to use HSR to select the healthier option

Shoppers were presented with pairs of products to test their understanding of how to use the HSR to select the healthier option within a category. In the first scenario, comparisons between products within the same category were tested. The second scenario tested shoppers' ability to select the healthier option between two products, based on the number of stars on the HSR.

Compared to 2015, more shoppers understood that the HSR should not be used to compare products in different categories (**Figure 6.4**). For example, shoppers in the general population were more likely to understand that HSR cannot be used to compare baked beans and breakfast cereals (27% in 2015 compared with 33% in 2018). Interestingly, in 2018 general population shoppers were less likely to understand that the HSR can be used to compare two bread products (down from 79% in 2015 to 68% in 2018), however in this scenario one bread product displayed a HSR with energy and prescribed nutrient icons (Option 1) and one displayed only the HSR graphic (Option 4). Priority group results are all consistent with baseline.

General population and low income shoppers who have seen the campaign were more likely to understand that that the HSR should not be used to compare products in different categories (75% compared with 63% of those who have not seen the campaign).

Figure 6.4 Consumer understanding of which foods should be compared using HSR



Base: All Respondents who answered (General population: 2018 n=516~521; 2016 n=518~527; 2015 n=1067. Low income with children under 14 years: 2018 n=156~160; 2016 n=153~156; 2015 n=324. Māori with children under 14 years: 2018 n=145~156; 2016 n=154~156; 2015 n=300;. Pacific with children under 14 years: 2018 n=147~160; 2016 n=145~158; 2015 n=311)
Source: Q3c
Note: ▲ 2018 significantly higher than 2015 ▼ 2018 significantly lower than 2015

Most shoppers appeared to understand how to use the HSR for selecting the healthier option based on the number of stars on a products (**Figure 6.5**). A higher proportion of shoppers recognised the margarine with the greater number of stars to be the healthier option (71% in 2018 up from 59% in 2015). Similarly, around two-thirds of shoppers (66% in 2018) understood that breads displaying the same number of stars were equally healthy (64% in 2015).

Figure 6.5 Consumer understanding of HSR on similar foods

Base: All Respondents who answered (General population: 2018 n=498~529; 2016 n=496~527; 2015 n=1067. Low income with children under 14 years: 2018 n=155~163; 2016 n=136~168; 2015 n=324. Māori with children under 14 years: 2018 n=134~169; 2016 n=149~160; 2015 n=300. Pacific with children under 14 years: 2018 n=147~161; 2016 n=147~159; 2015 n=311)
Source: Q3d
Note: ▲ 2018 significantly higherthan 2015 ▼ 2018 significantly lower than 2015
Note: There are no 2015 results for the juice scenario.

Perceptions of the HSR

To understand how shoppers currently perceive the HSR, they were asked whether they agree or disagree with a number of statements. Trust, confidence and believability of the HSR have remained consistent in 2018 compared to 2015. Nearly half (44%) of shoppers in the general population thought the HSR is something companies use to sell more products, 47% felt confident using the HSR and 40% trusted the HSR. Those who had seen the campaign were more likely to express trust (43%) than those who had not seen the campaign (37%). Fifty two percent of shoppers who had seen the campaign expressed confidence in HSR, compared with 42% who had not seen the campaign.

Results have remained broadly consistent for the priority groups, although low income shoppers were more likely to feel confident using the HSR (53% in 2018, up from 42% in 2015), and Māori shoppers were now more likely to trust in the HSR (39% in 2018, up from 29% in 2015).

Ease of use

Perceptions around ease of use in the HSR have improved since 2015. In 2018, over six in 10 shoppers in the general population agreed:

- it is easy to find the HSR on packaged food (62% compared to 51% in 2015)
- it is easy to understand (63% compared to 58% in 2015)
- it makes it easier to decide which packaged foods are healthier (61% in 2018, similar to 60% in 2015).

Low income shoppers were more likely to agree with all these statements in 2018 compared with 2015, and Māori shoppers were more likely to agree it is easy to find the HSR on packaging in 2018 than in 2015. There were no significant changes for Pacific shoppers. Shoppers in the general population who had seen the campaign were more likely to agree the HSR makes it easier to decide which packaged foods are healthier (66%) compared with those who had seen the 2015 campaign (56%).

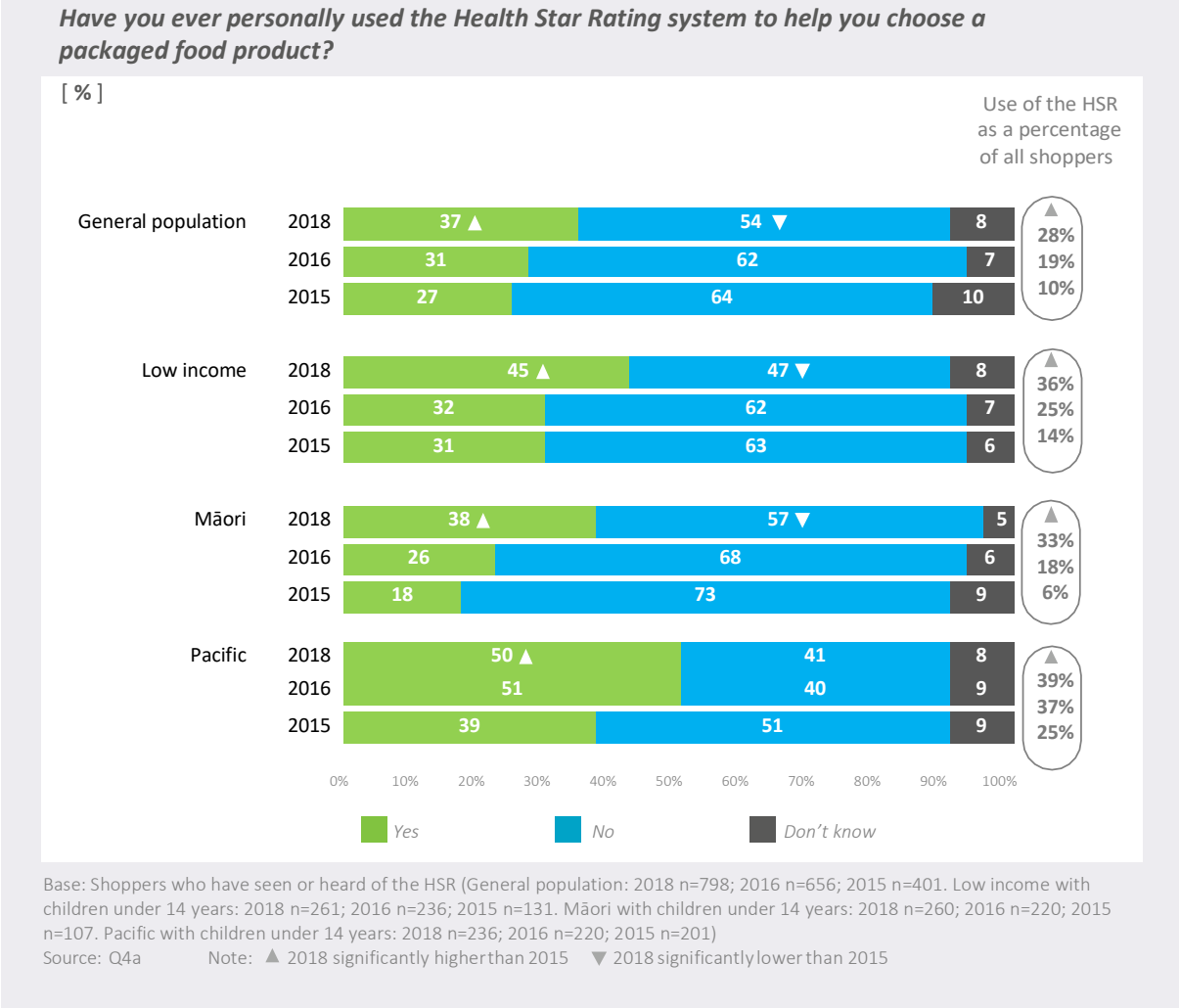
6.3.4 Use of the Health Star Rating

Across groups of shoppers, use of the HSR has significantly increased since 2015 (**Figure 6.6).**

Among shoppers in the general population who are aware of the HSR, 37% report using the HSR to help choose a packaged food compared to 27% in 2015. This equates to 28% of all shoppers in the general population group, which is significantly more than in 2015 (10%).

Use of the HSR has also significantly increased as a percentage of all shoppers for low income (36% in 2018 compared to 14% in 2015), Māori (33% in 2018 compared to 6% in 2015) and Pacific (39% in 2018 compared to 25% in 2015).

Figure 6.6 Use of the HSR



Base: Shoppers who have seen or heard of the HSR (General population: 2018 n=798; 2016 n=656; 2015 n=401. Low income with children under 14 years: 2018 n=261; 2016 n=236; 2015 n=131. Māori with children under 14 years: 2018 n=260; 2016 n=220; 2015 n=107. Pacific with children under 14 years: 2018 n=236; 2016 n=220; 2015 n=201)
Source: Q4a Note: ▲ 2018 significantly higher than 2015 ▼ 2018 significantly lower than 2015

Shoppers in the general population were more likely to report using the HSR if they had seen the 2018 campaign (38%) compared to those who have not (21%). Reported use was also higher for low income and Pacific shoppers who had seen the campaign. No statistically significant difference was found for Māori shoppers who had seen the campaign.

General population shoppers who were younger (18 to 29 years old) were more likely to use the HSR compared to overall shoppers (43% of younger shoppers compared to 28% of overall shoppers).Those with children aged under 14 years were also more likely to use the HSR compared with overall shoppers (34% of parents with children under 14 years, compared to 28% of overall shoppers).

Shoppers who said they used the HSR were also asked to think about a time they used the HSR and what type of food this was used for (**Table 6.3**). The HSR was most commonly reported to be used to choose breakfast cereals for all groups of shoppers. Shoppers in the general population were significantly more likely to report using the HSR for selecting muesli bars in 2018 than they were in 2016 (39% compared to 27%). The type of products that low income, Māori and Pacific shoppers report using the HSR for was consistent with 2016 findings.

Table 6.3 Type of products for which shoppers used the HSR

Food category	General population (%)		Low income with children under 14 (%)		**Māori with children** under 14 (%)		Pacific with children under 14 (%)	
	2016	2018	2016	2018	2016	2018	2016	2018
Base (n)	211	306	77	111	56	97	113	119
Breakfast cereal	74	68	63	72	77	63	74	79
Muesli bars	27	39	30	40	36	42	37	31
Snack foods	17	23	20	17	32	32	30	29
Canned food	15	20	17	14	14	19	28	29
Margarine/butter	18	19	6	18	25	25	30	29
Yoghurt	17	17	16	15	12	22	30	29
Bread	14	15	7	16	16	19	30	35
Biscuits	9	14	11	19	7	15	16	19
Nuts	12	9	11	4	15	8	22	19
Confectionary	6	6	4	9	3	13	8	8
Milk	4	6	4	11	6	8	27	23
Meat products	3	4	4	4	8	11	21	19
Other	6	1	0	1	0	3	1	3
None/no comment	0	0	0	0	0	0	0	0
Don't know	2	10	2	5	2	6	11	5

Note: Percentages in green are significantly higher than 2016. Percentages in red are significantly lower than 2016.

Using the HSR to compare products

While the majority of all shoppers in the survey believe the HSR can be used to compare food products of different categories, the majority of those who say they are using the HSR, indicate they are using it to compare similar types of food products. These findings are consistent with 2015 baseline results for all groups of shoppers.

Of the shoppers who reported they had used the HSR to compare products, the majority reported choosing the product with more stars. This is similar to the 2015 findings for shoppers in the general population (88% in 2018 compared to 83% in 2015). The results are also similar for low income, Māori and Pacific shoppers.

Intention to use HSR

Consistent with 2015, across all population groups in 2018, 46% to 62% of shoppers said they're at least quite likely to use the HSR in the future. There was no difference between those who had seen the campaign and those who had not. The exception was low income shoppers, where those who had seen the campaign were more likely to say they were quite likely to use the HSR in the future.

Main barriers to using HSR

Of the general population shoppers who stated that they were 'quite unlikely' or 'very unlikely' to use the HSR, the main barrier to using the HSR was a belief that other nutrition information is more important than the HSR (49%). Among the general population, 32% also agreed with the statement "I don't believe the Health Star Rating" (32%).

The belief that other nutrition information was more important also applied for low income shoppers (42%). The main barriers for Māori and Pacific shoppers were price (44% and 46%, respectively buy products based on price) and a desire to buy what they know their family will eat (33% and 37%, respectively buy what they know their family will eat). These results were consistent with 2015.

6.3.5 Health Star Rating Campaign Recognition

The campaign featured cereal boxes, bought to life, contemplating the features and benefits of the HSR system. 2018 results show they were widely liked by audiences, with 73% of shoppers in the general population feeling the advertisements were easy to understand (66% for 2016

campaign). This is broadly consistent across all priority groups: low income (73%), Māori (72%) and Pacific (63%).

Overall recognition of the advertising campaign among shoppers in the general population was significantly higher for the 2018 campaign (45%) than it was for the 2016 campaign (12%). This was also the case for low income, Māori and Pacific shoppers. These increases are likely due to the change in advertising medium. The 2016 campaign included online video advertisements and adshel posters, whereas the 2018 campaign included television advertisements that typically have a wider reach than online advertising.

Survey shoppers were played one of the 2018 HSR television commercials, and shown images of two 2018 adshel posters near the end of the survey and asked if they had seen these or a similar version.

Shoppers (across all groups) who recognised the campaign advertising were most likely to say they have seen it when watching television. Recognition of the television advertisements exceeded the Colmar Brunton norm of 36% across all groups, with 42% of general population and low income shoppers, 48% of Māori shoppers and 56% of Pacific shoppers recognising the advertisement. Recognition of the HSR adshels adverts amongst shoppers in the general population was 18%, also exceeding the Colmar Brunton norm for outdoor advertising at 13%.

7 Nutrient status

7.1 INTRODUCTION

This area of enquiry monitors the nutrient status of products carrying the HSR over time. The National Institute for Health Innovation was commissioned by NZFS to report on nutrient status using their Nutritrack database.

7.2 METHODOLOGY

Outcomes for this area of enquiry of the monitoring report were divided into three key areas:

1. distribution of health star ratings across all products, and by food category;
2. nutrient content of products labelled with the HSR over time, and in comparison with non-HSR labelled products; and
3. determination of reformulation prior to and post introduction of the HSR system.

As described in the General Methodology section and Section 4.2, analysis for this section was largely conducted using the Nutritrack database and Nielsen Homescan® Panel database. Full details of the methods and results for this section can be found in the report prepared by the National Institute for Health Innovation[23].

7.3 RESULTS

7.3.1 Distribution of Health Star Rating

Since 2015, the most commonly displayed star rating was 4.0 stars (24.7% in 2018). In 2018, over three quarters (76.5%) of products with a HSR graphic displayed 3.0 to 5.0 star ratings (n=1,947/2,545), and less than a quarter (23.5%) displayed 0.5 to 2.5 star ratings (n=598) (**Figure 7.1**). Compared with 2015, there have been small increases in proportions of products displaying 0.5 to 3.0 star ratings and a relative reduction in proportions of products with 4.0 and 5.0 star rating.

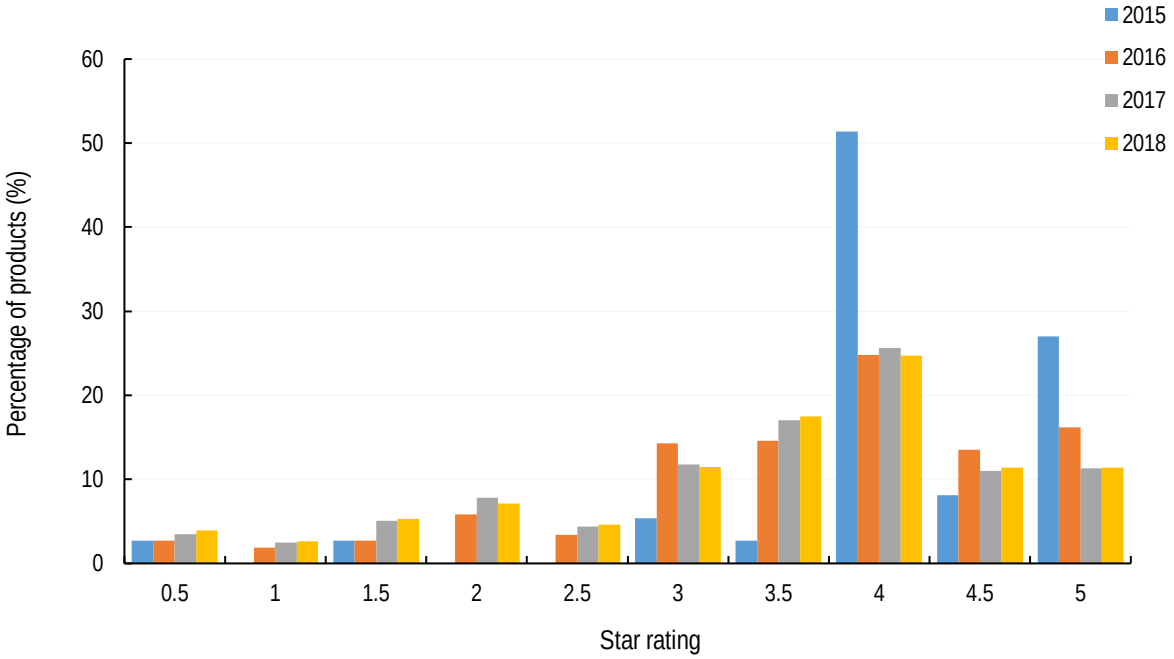
This pattern is seen for most food groups, except for bread and bakery products, confectionary, non-alcoholic beverages, snack foods, and sugar, honey and related products where lower ratings were more common (**Figure 7.2**).

Amongst products that displayed the HSR graphic in 2018, the overall median star rating was 3.5. The median star rating was also at least 3.5 stars for the majority of food groups, except for: bread and bakery products, confectionary, edible oils, non-alcoholic beverages, snack foods, and sugar and related products. The lowest median star ratings were for sugar and related products at 0.5 stars and confectionary at 1.5 stars.

There is little variation in star ratings for convenience foods, special foods and sugar and related products. In 2018, there was 243 convenience foods with a star rating, 56% of which had a rating of 3.5 stars. A total of 35 special foods displayed a star rating, 65% of which had a star rating of 4.5. Eighty percent of the 15 sugar and related products that display a star rating, had a rating of 0.5 stars.

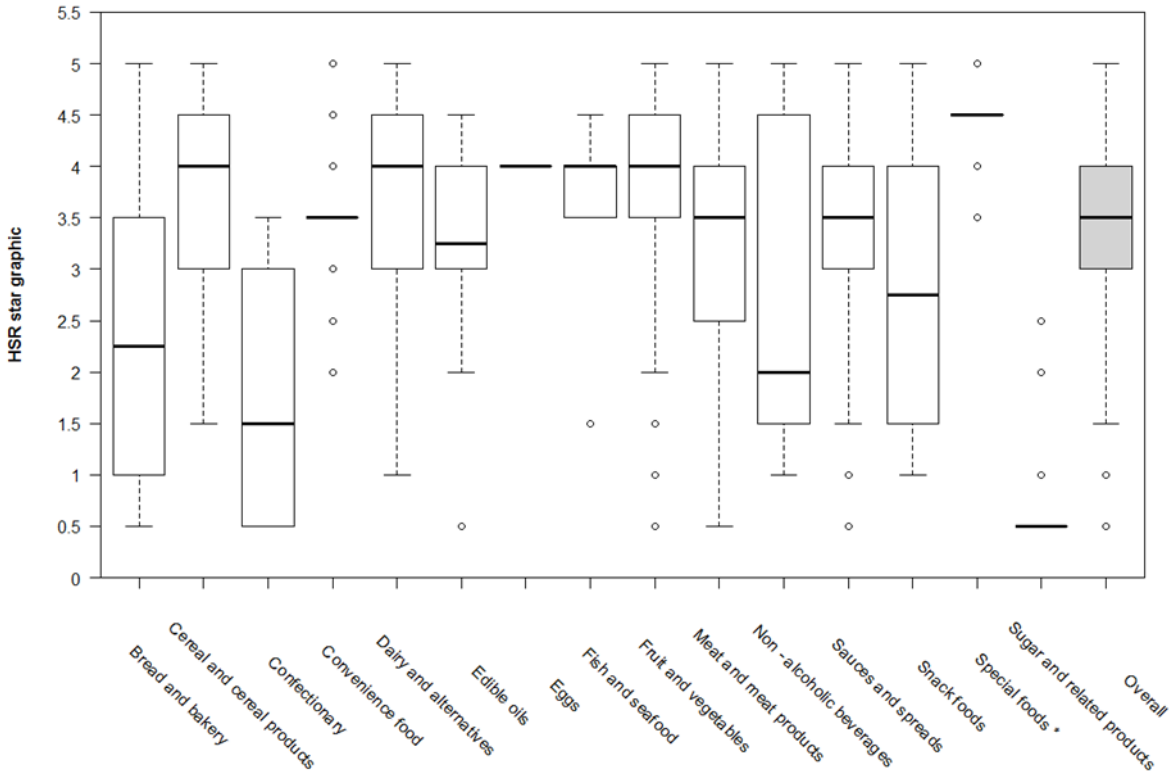
[23] National Institute for Health Innovation (2018) The Health Star Rating (HSR) system in New Zealand 2014-2018: System Uptake and nutrient content of foods by HSR status. Auckland: Auckland UniServices Ltd.

Figure 7.1 Percentage of products displaying each Health Star Rating (2015 to 2018)*



*2015 n=37, 2016 n=788, 2017 n=1,811 and 2018 n=2,545.

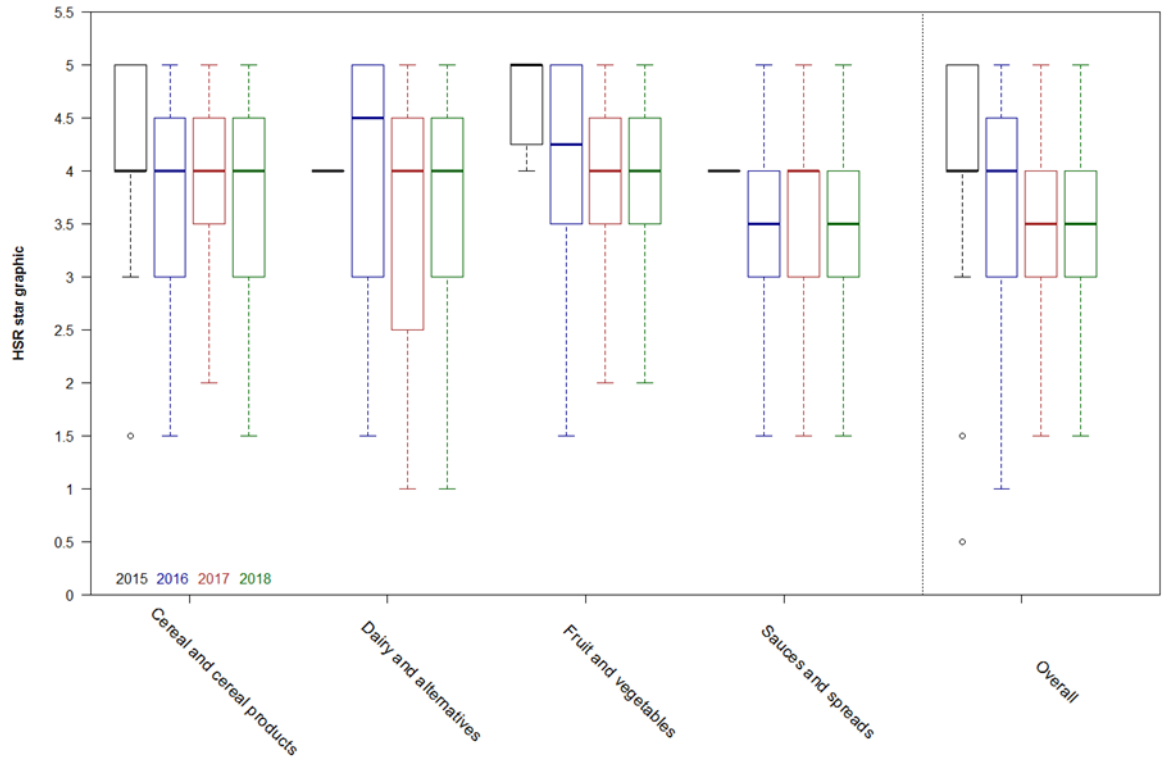
Figure 7.2 Median Health Star Rating overall and by food group, for products displaying the HSR in 2018



Note: Box represents the interquartile range (IQR), whiskers extend to the most extreme data point, which is no more than 1.5 times the IQR from the box, and circles beyond the whiskers are extreme values. The line within the box represents the median HSR for each food group in year 2018.

The distribution of the HSR graphic data for the four food groups with the highest absolute uptake of the HSR graphics are shown in **Figure 7.3**. The 2018 median star rating was 4.0 for cereal and cereal products, dairy and alternatives and packaged fruit and vegetables, and 3.5 for sauces and spreads. Since 2015, the median has either remained the same or decreased as uptake across the range of products has increased.

Figure 7.3 Median HSR overall and four food groups with highest absolute uptake of HSR star graphic labels (2015 to 2018)



Note: Box represents the interquartile range (IQR), whiskers extend to the most extreme data point which is no more than 1.5 times the IQR from the box, and the circles beyond the whiskers are extreme values. The line within the box represents the median of the HSR for each food group in years 2015 and 2018.

7.3.2 Nutrient content of Health Star Rating and non-Health Star Rating labelled products (2015 to 2018)

Table 7.1 summarises the nutrient content of foods by HSR status in 2015 to 2018. Products that display the HSR in 2018 contained significantly less energy, saturated fat, sodium, total sugar and protein on average, compared to products that did not display the HSR[24]. These findings were similar for 2017 data, weighted by household purchasing. Differences between HSR and non-HSR products could reflect reformulation, selective application of HSR to already healthier products, or a combination of these.

Products that displayed the HSR Option 5 (primarily non-alcoholic beverages) were significantly lower in average energy, sodium, fibre and protein, compared to products that displayed Options 1 to 4. However, these products displaying Option 5 contained significantly more saturated fat and sugar per 100g on average, compared to products using Options 1 to 4.

Regression analysis showed that the trend in average energy density and protein content of HSR products has significantly decreased by 20% since 2015 (baseline). A similar trend was

[24] 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.

observed for average fibre content, which has significantly decreased by 18% in HSR products. This likely reflects the difference in the types of products using the HSR system in 2018 compared to when it was first introduced, as well as the increased uptake of HSR use. During this time, the average energy density, saturated fat and sodium content of non-HSR labelled products increased significantly.

Table 7.1 Mean nutrient content of HSR and non-HSR labelled products in 2015 – 2018

Nutrient per 100g	2015		2016		2017		2018	
(n, mean (SD))	HSR	Non-HSR	HSR	Non-HSR	HSR	Non-HSR	HSR	Non-HSR
Energy (kJ/)	*37*	*13156*	*787*	*13453*	*2056*	*11985*	*2985*	*11247*
	1139.2 (859)	1073.4 (774.2)	1203.9 (811.6)	1096.3 (789.9)	1083.8 (833.1)	1107.6 (780.6)	1016.1 (834.6)	1156.1 (775.2)
Saturated fat (g)	*37*	*13021*	*788*	*13328*	*2056*	*11923*	*2985*	*11163*
	2 (3.1)	4.8 (7.5)	2.9 (5.2)	5.1 (7.8)	3.6 (5.9)	5.3 (8.2)	3.4 (6.1)	5.6 (8.4)
Sugar (g)	*37*	*13045*	*788*	*13363*	*2056*	*11937*	*2985*	*11187*
	7.3 (8.8)	13.9 (19.9)	11.4 (13.7)	13.8 (19.7)	12.8 (18.1)	13.7 (19.6)	11.7 (16.8)	14.3 (20.1)
Sodium (mg)	*36*	*12867*	*786*	*13233*	*2059*	*11902*	*2972*	*11163*
	206.7 (272.9)	468.7 (1131.6)	302 (546.6)	456 (1080)	340.3 (743.9)	475.1 (1119.8)	333.4 (751.9)	522.6 (1398.4)
Protein (g)	*37*	*13165*	*788*	*13456*	*2056*	*11983*	*2985*	*11242*
	8.9 (6.9)	7.1 (7.3)	8.3 (6.9)	7.2 (7.4)	7.4 (7)	7.2 (7.5)	7 (7.1)	7.3 (7.5)
Fibre (g)*	*27*	*3104*	*496*	*3126*	*983*	*2822*	*1303*	*2803*
	4.7 (3.8)	4.8 (5.5)	5.8 (5.1)	5.2 (7)	5.3 (6.3)	4.9 (5.6)	5 (5.7)	5.3 (5.8)

SD: standard deviation

*Fibre values were not available for many products because it is not mandatory to list fibre on a NIP.

7.3.3 Reformulation of products displaying the Health Star Rating

Analysis was undertaken to determine if the differences in nutrition composition of products available on the New Zealand market was due to product reformulation on HSR labelled products. In order to do this, a comparison was undertaken of the nutrient status of those HSR labelled products available in 2018 that were also available in the first quarter of 2014, prior to the adoption of the HSR system in New Zealand (**Table 7.2**). Differences in reformulation between HSR labelled products and unlabelled products were estimated.

Reformulation was defined as a minimum 5% change in at least one key nutrient (energy, saturated fat, sugar, sodium, protein or fibre). Under this definition, 79% of products displaying HSR labels in 2018 (n=929) and were available in 2014 had been reformulated since 2014.

There was a statistically significant reduction in sodium content in HSR products available in both 2014 and 2018, compared to non-HSR labelled products. However, this difference (-12.5mg/100g) was small; equivalent to a 2% reduction in overall sodium content.

Reformulation of HSR and non-HSR products was also assessed when weighted by household purchase volumes. As household purchasing data was not available for 2018 at the time of writing this report this analysis compared products that were available in both 2017 and 2014. While the Nielsen Homescan® panel showed a similar pattern to the crude analysis, there

were no significant differences between HSR and non-HSR products.

Table 7.2 Composition of HSR and non-HSR foods in 2014 and 2018 (crude analysis)

Nutrient per 100g (Mean (SD/95%CI)	HSR				Non-HSR				Difference between HSR and non-HSR
	n	2014	2018	Mean difference	n	2014	2018	Mean difference	
Energy (kJ)	1169	927.6 (791.8)	928 (794.1)	0.33 (-3.5,4.2)	5374	1121.2 (780.5)	1119.6 (779.3)	-1.55 (-3.9,0.8)	1.9 (-2.6,6.4)
Saturated fat (g)	1169	2.8 (5)	2.7 (5)	-0.05 (-0.1,0.003)	5327	5.3 (8.3)	5.3 (8.3)	-0.03 (-0.1,-0.01)*	-0.02 (-0.1,0.04)
Sugar (g)	1168	10.9 (16)	10.7 (15.6)	-0.23 (-0.4,-0.1)*	5330	13.4 (19.7)	13.3 (19.7)	-0.09 (-0.2,-0.02)*	-0.1 (-0.3,0.01)
Sodium (mg)	1167	302.1 (371.8)	289.8 (352.2)	-12.29 (-17.3,-7.3)*	5282	529 (1287.6)	529.2 (1293.3)	0.22 (-4.6,5.1)	-12.5 (-19.5,-5.6)*
Protein (g)	1168	6.7 (6.7)	6.6 (6.7)	-0.06 (-0.1,-0.01)*	5379	7.1 (7.4)	7.1 (7.4)	-0.02 (-0.05,0.01)	-0.04 (-0.1,0.02)
Fibre (g)	325**	5 (4.6)	5.1 (4.3)	0.13 (-0.1,0.4)	1109	5.2 (5.8)	5.2 (5.5)	0.05 (-0.04,0.1)	0.1 (-0.2,0.4)

SD: Standard deviation
95% CI: 95% confidence interval
*Indicates significant p-values <0.05
**Number of products for which information on fibre content was available. Fibre values were not available for many products because it is not mandatory to list fibre on the NIP.

Appendix 1: Health Star Rating system Style Guide assessment checklist

Questions	Answer
Does the product display a HSR?	Yes No
Is the product one that is permitted to display a HSR system graphic	Yes No
Is the product one that is intended to display a HSR system graphic	Yes No
Which HSR system graphic does the product display?	Option1 Option 2 Option 3 Option 4 Option 5
Questions for all HSR Options (1 to 5)	
Is the HSR system graphic or Energy icon on the front of the pack?	Yes No
Is the HSR system graphic or Energy icon presented with contrasting background and text?	Yes No
Does the product contain a daily intake guide (DIG/Guideline Daily Amount)?	Yes No
If the product displays a DIG/Guideline Daily Amount is it in a manner that will not mislead the consumer that the two systems are linked?	Yes No N/A
Does the product display a Heart Foundation Tick?	Yes No
Where is the Heart Foundation Tick located?	Misleading Close to HSR FOP Not front N/A
Is the product a multipack?	Yes No
If the product is a multipack, how is the HSR system graphic displayed?	Single Average Multiple One variant Other N/A
Is it legible? Has sufficient space been provided to be able to read the energy and nutrient names and values clearly?	Yes No
Questions for HSR which display either the Energy icon only (Option 5) or HSR with an energy or nutrient declaration (Options 1 to 3)	
Is the HSR based on the 'form of the food' i.e. as prepared?	Yes No
Does the energy value reflect that stated in the NIP?	Yes No
Has the Energy value been recorded in the correct unit (kJ)?	Yes No
Has the Energy value been recorded to the correct number of significant figures?	Yes No
Does the energy icon display %DI?	Yes No
If %DI used, is this displayed as per pack or per serve?	Per pack Per serve Per [reference portion] Other

	N/A
If %DI used, has this been done correctly?	Yes No N/A
Is the nominated reference measure appropriate? i.e. per 100 g/100 ml/ pack or per serve	Yes, per 100 g Yes, per 100 mL Yes, per 100 g prepared Yes, per [reference portion] Yes, per pack Yes, per serve No
If the reference measure is not appropriate, please specify the problem	Free text
Is the nominated reference measure placed correctly? For HSR graphic horizontal display, to the right hand side of the graphic; for the vertical display, at the bottom of the graphic. For Energy icon, either above or below the energy icon	Yes No
If per serve is used, is the same serve size specified in the NIP?	Yes No N/A
Questions for all products displaying a HSR icon (Options 1 to 4)	
Is the HSR system graphic a rating from 0.5 to 5 stars?	Yes No
Does the HSR system graphic value match the numerical rating value?	Yes No
Are the words 'Health Star Rating' displayed prominently below the HSR element of the graphic?	Yes No
Is the HSR graphic used elsewhere on pack?	Yes No
If so, does the HSR value match that used on the front of pack?	Yes No
Is the rest of the second HSR option compliant?	Yes No N/A
Does the HSR tail match the Style Guide?	Yes No N/A
Questions for HSR Options 1 to 3 only	
Is the HSR graphic larger than the nutrition information element?	Yes No
Is the HSR graphic vertical/horizontally presented?	Horizontal Vertical
Do the energy icon (and nutrient icons) sit to the right of the HSR graphic?	Yes No
Questions for HSR Options 1 and 2 only	
Have the prescribed nutrients (saturated fat, sugars and sodium) been included?	Yes No
Are the energy and nutrient icons arranged in the correct order? Energy | Sat fat | Sugars | Sodium	Yes No
Do the nutrient values presented in the HSR graphic match those listed in the NIP?	Yes No
If no, which nutrient (s) are incorrect?	Free text
Have the nutrient values been presented in the correct units?	Yes No
Have the nutrient values been recorded to the correct decimal places?	Yes No
If no, which nutrient (s) are incorrect?	Free text
Do the prescribed nutrients (saturated fat, sugar, or sodium) use the terms 'low' in the lower band?	Yes, sat fat Yes sugar Yes, sodium Yes, sat fat + sugar Yes, sat fat + sodium

	Yes, sugar + sodium Yes, all No
If the prescribed nutrients use the term 'low' has this been done correctly?	Yes No, Sat fat No, sugar No, sodium No, multiple N/A
If no, please state the problem	Free text
Questions for HSR Options 1 only	
If Option 1 has been used, what nutrient has been listed?	Calcium Dietary fibre Folate Iron Magnesium Omega 3 Protein Vitamin A Vitamin C Vitamin D Vitamin E Zinc Thiamin Other
If other, what nutrient has been listed?	Free text
Does the optional nutrient meet FSC source claim requirements?	Yes No
If Option 1 has been used, has the optional nutrient used the 'high' descriptor in the lower band?	Yes No N/A
If Option 1 has been used and the 'high' descriptor used for the optional nutrients, has it been used correctly?	Yes No, calcium No, fibre No, folate No, iron No, magnesium No, omega 3 No, protein No, vitamin A No, Vitamin C No, vitamin D No, vitamin E No, zinc No, thiamin No, other N/A
If no, please state the problem	Free text
Other notes	Free text field

Appendix 2: Nutritrack food groups, categories and sub-categories

Food group	Category	Sub-category
Bread and bakery products	Biscuits	Savoury (including gluten-free and plain dry
		Sweet (filled and unfilled)
	Bread	White (including gluten-free)
		Wholemeal (including gluten-free)
		Mixed grain
		Fruit
		Other (flat, rolls, pizza, bagel, crumpets)
	Cakes, muffins and pastries (savoury and sweet)	Cake mixes
		Cakes
		Muffins
		Pastries
Cereal and cereal products	Breakfast cereals	Hot cereal
		Ready to eat
	Cereal bars	Cereal-based bars
		Gluten-free bars
		Nut-based bars
		Puff-based bars
	Flavoured cereals	Canned pasta
		Flavoured couscous
		Flavoured noodles
		Flavoured rice
		Packet pasta
	Unflavoured cereals	Fresh pasta
		Gnocchi
		Plain couscous
		Plain dry gluten-free pasta
		Plain dry pasta
		Plain noodles
		Plain rice
	Unprocessed cereals	Bread mixes
		Breadcrumbs
		Chia
		Cornflour
		Flour
		LSA mixes and similar products
		Polenta
		Quinoa
		Wheatgerm
		Other plain cereals
Confectionary	Chocolate and sweets	Chocolate-based confectionary
		Sugar-based
		Sugar-free sweets
	Jelly	
Convenience foods	Meal kits	
	Other frozen foods	
	Pizza	Meat-based toppings
		Vegetarian toppings
	Pre-prepared salads and sandwiches	Salads
		Sandwiches
		Sushi
	Ready meals	Ambient ready meals
		Chilled ready meals
		Frozen ready meals
	Soup	Canned soup

		Chilled soup
		Dry soup mix
		Plain soup mixes
Dairy and alternatives	Cheese	Cheese variety packs
		Hard cheese
		Paneer
		Processed cheese
		Sheep/goat milk cheese
		Soft cheese
		Soy cheeses
	Cream	Buttermilk
		Fresh cream
		Mascarpone cheese
		Reduced cream
		Sour cream
		Thickened cream
		Whipped cream
	Desserts	Dessert mixes
		Prepared desserts
	Ice cream and edible ices	Edible ices
		Frozen yoghurt
		Ice cream
		Soy-based ice cream
	Milk and milk alternatives	Coconut milk and cream
		Dairy milk
		Lactose-free milk
		Probiotic drinks
		Rice milk
		Soy milk
		Other milk
	Yoghurt and yoghurt drinks	Drinking yoghurt
		Flavoured yoghurt
		Fruit-based yoghurt
		Lactose-free yoghurt
		Natural yoghurt
		Soy yoghurts
		Yoghurt dry mix
		Yoghurt variety pack
Edible oils and oil emulsions	Butter, margarine and oils	Butter
		Flavoured butter spread (e.g. garlic)
		Margarine
		Unsalted butter
		Other edible oils
Eggs		
Fish and seafood products	Canned fish and seafood	Canned fish
		Canned seafood
	Chilled fish and seafood	Chilled fish
		Chilled seafood
	Frozen fish and seafood	Frozen fish
		Frozen seafood
	Other (marinated mussels and other)	Marinated mussels
		Other fish
Fruit and vegetables	Fresh packaged fruit and vegetables	
	Herbs and spices	Crushed garlic, ginger and chilli
		Seasoning
	Jam and marmalades	Jam
		Marmalade
	Nuts and seeds	Salted nuts

		Unsalted nuts
	Processed fruit	Canned fruit (in juice/syrup)
		Coconut and other fruit products
		Dried fruit
		Frozen fruit
		Fruit bars
	Processed vegetables	Canned vegetables
		Frozen potato products
		Other frozen vegetables
		Other vegetables (dried/pickled)
Meat and meat products	Meat alternatives	Meat-free bacon
		Meat-free products
		Tofu
	Processed meat	Bacon
		Canned meat
		Dried meat
		Frozen meat
		Kebabs
		Meat burgers
		Pate and meat spreads
		Raw flavoured meats
		Raw unflavoured meats
		Roast chicken
		Salami and cured meats
		Sausages and hotdogs
		Sliced meat (excluding salami and other cured meats)
		Whole hams and similar products
		Other meat products
Non-alcoholic beverages	Beverage mixes	
	Coffee and tea	Cocoa powder
		Coffee
		Hot chocolate
		Other flavourings for milk (e.g. Nesquik)
		Tea
	Cordials	Sugar-free cordials
		Sugar-sweetened cordials
	Electrolyte drinks	Sugar-free electrolyte drinks
		Sugar-sweetened electrolyte drinks
	Energy drinks	Sugar-free energy drinks
		Sugar-sweetened energy drinks
	Fruit and vegetables	Fruit juice
		Vegetable juice
	Soft drinks	Sugar-free soft drinks
		Sugar-sweetened soft drinks
	Waters	Coconut water
		Sparkling water
		Still water
		Other flavoured water
Sauces and spreads	Mayonnaise and salad dressings	Dressings
		Mayonnaise
	Sauces	Gravies and stocks
		Meal-based sauces
		Table sauces
		Other sauces
	Spreads	Dips
		Peanut butter and nut-based spreads
		Savoury spreads (including relishes and pickles)
		Other spreads
Snackfoods	Crisps and snacks	Corn chips

		Extruded snacks
		Gluten-free corn chips
		Gluten-free snacks
		Popcorn
		Potato crisps
		Pretzels
		Salt and vinegar
		Snack packs
		Variety packs
		Wholegrain chips
		Other snackfoods
Special foods	Breakfast beverages	
	Diet drink mixes	
	Diet soup mixes (meal replacements)	
Sugars, honey and related products	Condensed caramel	
	Dessert additions	
	Dessert toppings	
	Honey	
	Icing	
	Sugar	
	Sweeteners	
	Syrup	
	Other sugar-based products	