FOOD STANDARDS
Australia New Zealand
Te Mana Kounga Kai – Ahitereiria me Aotearoa

Report 1: Summary

Review of modelling undertaken for the Health Star Rating System Five Year Review

July 2020

1. Introduction

The Health Star Rating (HSR) is a front-of-pack labelling system that rates the overall nutritional profile of packaged food and assigns it a rating from ½ a star to 5 stars. It was designed to provide a quick, easy, standard way for consumers to compare similar packaged foods. The more stars, the healthier the choice. The HSR system was implemented as a voluntary food product front-of-pack labelling program in Australia in June 2014.

When the HSR system was approved by the Australia New Zealand Forum on Food Regulation (the Forum), Ministers agreed that an independent review of the system be carried out after five years of implementation. This review of the HSR system (the Review) was completed in May 2019 and recommended a range of changes to improve the operation of the HSR calculator, drive uptake by industry and better manage and monitor the HSR system.

In its response to the Review, the Forum agreed the HSR system is a useful tool and should continue with some amendments. The Forum requested that Food Standards Australia New Zealand (FSANZ) do a peer review of the modelling provided in the Review report and provide advice on the combined impact of a proposed package of changes to the way the HSR is calculated[1] to better align foods with dietary guidelines. These changes, outlined in Recommendation four of the Review, were:

4a   allow fresh, frozen or canned fruit and vegetables (with no added salt, sugars or fat) to automatically receive a HSR of 5
4b   more strongly penalise total sugars
4c   improve sodium sensitivity to reduce the HSR of products with sodium in excess of 900 mg/100 g
4d   redefine and rescale dairy categories to better differentiate and improve comparability between four/five food group foods[2] (FFG) and dairy dessert type products
4e   re-categorise water-based ice confections and jellies as non-dairy beverages, and calculate HSRs for these products on an 'as prepared' basis[3].

Recommendation 5 of the Review proposed a new way of calculating HSRs for non-dairy beverages, to better discern water (assigned an automatic HSR of 5), and drinks similar in nutritional profile to water (to be assigned a HSR of 4.5) from high energy drinks.

This report addresses the request from the Forum to undertake a peer review of modelling in the Review Report and provide advice on the combined impact of all recommended changes to the Original HSR calculator under Recommendation 4 and 5, as well as providing additional modelling in relation to the reclassification and rescaling of dairy foods.

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[1] Health star ratings for foods in each of the six food categories (1, 1D, 2, 2D, 3, 3D) are calculated by summing positive HSR baseline profiler points for risk increasing nutrients (energy, saturated fat, total sugars and sodium) and negative HSR modifying profiler points for risk reducing components (protein, fruit, vegetable, nut and legume content, and fibre). The lower the final profiler points score, the higher the HSR.

[2] Used to refer to both the Australian Five Food Groups and the New Zealand Four Food Groups, referring to the basic (or core) food groups from which people are recommended to choose the majority of their food every day.

[3] In June 2018 the Forum agreed to limit the application of the HSR system to food products 'as sold', i.e. that the HSR should be calculated and displayed on the basis of the product as it appears on the shelf with the exception of products which must be rehydrated with water, diluted with water, drained of water or drained of brine.

Overall summary of findings:

Peer review of the modelling
- The peer review found that the modelling undertaken in the Review report was robust and accurate.

Combined impact of all recommended changes
- The combined impact of recommended changes resulted in approximately 22% of all food products, excluding non-dairy beverages, impacted by an increased (14%) or decreased (8%) HSR.
- Most increased HSRs related to five food group FFG products (14% total) and the majority of decreased HSRs related to discretionary products (6% total).
- Adjustments to the sodium and total sugars HSR baseline points tables resulted in a reduction in HSRs for a range of products.
- Rescaling of the HSR 3D cheese category resulted in an increase of 0.5 stars for almost 70% of relevant products.
- Rescaling and reclassification of HSR Category 2D dairy foods, resulted in increased HSRs for yoghurts and soft cheeses, reduced HSRs stars for cream and cream cheese products and a mix of increased and decreased HSRs for custards/desserts.
- Reclassification of jelly and ice confectionery product categories as HSR Category 1 non-dairy beverages resulted in reductions for all of these products to a HSR of 0.5.
- Implementing an alternative approach to calculate HSRs for non-dairy beverages, resulted in a majority (94%) of these products with a decrease in HSR of 0.5 to 3 stars.
- Overall, the combined impact of recommended changes to the Original HSR calculator would result in a better alignment with dietary guidelines.

Reconsideration of recommended dairy re-categorisation and rescaling
- Excluding the recommended reclassification and rescaling for dairy products in HSR Categories 2D and 3D resulted in only small changes for all dairy food categories compared to the Original HSR calculator and did not result in a better alignment with dietary guidelines compared to the Recommended HSR calculator.

2. Peer review of HSR modelling undertaken in the Review Report

Modelling undertaken as part of the Review used the database of food products developed and used by the HSR Technical Advisory Group (the TAG database). While noting it has some limitations, to be consistent FSANZ used the same TAG database and HSR calculator to assess the accuracy of the modelling. Overall, FSANZ found the modelling in the final Review report was robust and accurate. Where small differences were identified, these could be attributed to slight differences in the underlying assumptions made about the data.

3. Impact of all recommended changes compared to original HSR calculator

In order to determine the impact of all recommended changes to the HSR calculator, FSANZ used the current HSR calculator (the original scenario) which was then updated to reflect all of the changes, outlined above, as recommended in the Review (the recommended scenario).

A summary of all recommended changes to the Original HSR calculator can be found in Table 1 of the Appendix.

Impact on all food categories except non-dairy beverages

As summarised in Table 1 below, the impact of using the recommended HSR calculator, compared to the original calculator, resulted in approximately 22% of TAG database products being affected by an increased (14%) or decreased (8%) HSR. Of these, 16% were for FFG products and 6% were for discretionary[4] products. Most of the increased HSRs related to FFG products (14% total) and the majority of decreased HSRs related to discretionary products (6% total), indicating that the recommended changes to the Original HSR calculator would result in a better alignment with dietary guidelines.

Table 1   *Summary of impacts on HSR Category 1D, 2, 2D, 3 and 3D products as a result of recommended changes to the HSR calculator*

	All TAG database products (% of total)	FFG products (% of total)	Discretionary products (% of total)
Total products	5522	3477 (63%)	2045 (37%)
Products with increased HSR	791 (14%)	770 (14%)	21 (<1%)
Products with decreased HSR	447 (8%)	132 (2%)	315 (6%)
Total impacted products	1238 (22%)	902 (16%)	336 (6%)

Recommendation 4a

The policy decision to award minimally processed fruits and vegetables a HSR of 5 resulted in increased HSRs for a range of fruits and vegetables in the TAG database that had lower stars (4-4.5) in the Original HSR calculator, generally due to their total sugars concentrations.

Recommendation 4b and 4c

Adjustments to the sodium and total sugars HSR baseline points tables in the Recommended HSR calculator resulted in a reduction in HSRs for a range of products. The majority of these reductions were as a result of the updated total sugars HSR baseline points table, given that changes to the sodium HSR baseline points table were limited to products with >900 mg sodium/100 g.

Recommendation 4d

Rescaling of the HSR 3D cheeses category and clarification of definitions resulted in an increase of 0.5 stars for almost 70% of relevant products in the TAG database, impacting regular and reduced fat hard ripened and processed style cheeses as well as camembert, brie and other surface ripened cheeses. A greater proportion (65%) of reduced fat products receive 4.5-5 stars in the Recommended calculator, compared to 30% in the Original HSR calculator thereby improving alignment with dietary guidelines. Rescaling of this category increased the proportion of cheeses with HSRs ≥3 from 45% to 52%.

Rescaling and reclassification of other HSR Category 2D dairy foods including yoghurts and soft cheeses, custards/desserts, cream and cream cheese, resulted in reduced HSRs to as low as 0.5 stars for cream and cream cheese products, although these were already scoring relatively low HSRs at ≤2 using the original HSR calculator.

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[4] Used in the Australian Dietary Guidelines to refer to foods and drinks not necessary to provide the nutrients the body needs, but that may add variety. However, many of these are high in saturated fats, sugars, salt and/or alcohol, and are therefore described as energy dense.

HSRs for yoghurts and soft cheeses increased, while custards/desserts were impacted by a mixture of increased (44%) and decreased (23%) HSRs giving a better spread of HSRs across this category compared to the nutritionally similar Yoghurts and soft cheeses, overall providing better alignment with dietary guidelines.

Recommendation 4e

Reclassification of Jelly and Ice confectionery product categories as HSR Category 1 Non-dairy beverages[5] for the purpose of HSR calculations resulted in reductions for all products in these categories from a HSR of 2.5-3.5 to a HSR of 0.5 when the Recommended HSR calculator was implemented.

Impact on Non-dairy beverages (Recommendation 5)

As a result of implementing an approach similar to the Nutri-Score System to calculate HSRs for non-dairy beverages, the majority (94%) of these products had a decrease in HSR of 0.5 to 3 stars. The greatest impact was for whole juices with 98% of products affected, with up to a 3 stars reduction for some products.

Overall, reclassification, rescaling and using new calculation methods (non-dairy beverages, ice confectionery and jelly) had a greater impact on HSRs than the adjustment of sodium and total sugars baseline points tables, which generally resulted in a reduction in HSRs for a smaller proportion of products across a broad range of AGHE categories.

4. Reconsideration of recommended dairy re-categorisation and rescaling

The Forum also requested that FSANZ provide advice on whether it was necessary to re-categorise and rescale dairy categories in combination with the recommended adjustments to HSR baseline point tables for individual nutrients.

Outcomes from the Original HSR calculator were compared to the Recommended HSR calculator which was adjusted to remove reclassification and rescaling of products in HSR categories 2D and 3D.

Excluding the recommended reclassification and rescaling for dairy products in HSR Categories 2D and 3D resulted in only small changes for all dairy food categories. Yoghurt and soft cheeses (13%), Cream cheese (7%) and Custards/desserts (6%) products were all affected by a 0.5 star reduction, however, no Cream products were impacted. The reduction in HSR was as a result of the recommended changes to the total sugars HSR baseline points tables only as all products had a sodium concentration of <900 mg/100 g.

This option did not result in better alignment with dietary guidelines compared to the Recommended HSR calculator.

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[5] Note that while Jelly and Ice confectionery were reclassified as Category 1 Non-dairy beverages for HSR calculation purposes, analysis of the impact of the recommended changes on these AGHE categories has still been included in Category 2.

Appendix

Table 1   *Summary of all changes to the Original HSR calculator as recommended in the HSR System Five Year Review Report*

	Recommendation in Review Report	Original HSR calculator parameters		Recommended HSR calculator parameters	
		Category 1, 1D, 2 and 2D	**Category 3 and 3D**	**Category 1, 1D, 2 and 2D**	**Category 3 and 3D**
4A	Automatic HSR of 5 for unprocessed or minimally processed fruit and vegetables (refer p 49 of Review Report)	As per HSR Category 2 other foods	N/A	Eligible fruits and vegetables in HSR Category 2 automatically receive HSR of 5	N/A
4B	Total sugars baseline points table adjusted (refer p 52 of Review Report)	22 point table increasing from 1 point at 5.01 g total sugars /100 g to 22 points at 99.01 g/100g (4-5 g total sugars /100g increments per point)	10 point table increasing from 1 point at 5.01 g total sugars /100 g to 10 points at 45.01 g/100g (4-5 g total sugars /100g increments per point)	25 point table for HSR Category 1D, 2 and 2D increasing from 1 point at 5.01 g total sugars /100g to 25 points at 99.01 g/100 g (3.92 g total sugars /100g increments per point)	No change from Original
4C	Sodium baseline points table adjusted (refer p 53 of Review Report)	30 point table increasing from 1 point at 90.01 mg sodium/100 g to 30 points at 8106.01 mg/100g (90 mg sodium /100g increments per point up to 10 points, then exponentially increasing increments to 30 points)	30 point table increasing from 1 point at 90.01 mg sodium /100 g to 30 points at 2700.01 mg/100g (90 mg sodium /100g increments per point)	30 point table for AHS Category 1D, 2 and 2D Points as for Category 3 and 3D (90 mg sodium/100g increments per point)	No change from Original
4D	Redefine and rescale dairy categories (refer p 56 of Review Report)	HSR Category 2D includes yoghurts, soft cheeses (calcium <320 mg/100 g), dairy foods with ≤25% non-dairy ingredients	HSR Category 3D Includes cheese and processed cheese (calcium >320 mg/100g)	HSR Category 2D includes yoghurts, soft cheeses (calcium <320 mg/100 g), **spoonable** dairy foods with ≤25% non-dairy ingredients, e.g. cream, cream cheeses, custards, dairy desserts, mascarpone, evaporated milk, ricotta etc, Rescale conversion of HSR final score to star rating*	HSR Category 3D includes cheese and processed cheese, **including surface ripened cheeses** (calcium >320 mg/100g). Rescale conversion of HSR final score to star rating*

Recommendation in Review Report		Original HSR calculator parameters		Recommended HSR calculator parameters	
		Category 1, 1D, 2 and 2D	Category 3 and 3D	Category 1, 1D, 2 and 2D	Category 3 and 3D
4E	Reclassification of ice confection and jelly (refer p 57 Review Report)	Classified under HSR Category 2 – other foods	N/A	Classified under HSR Category 1 – Non- dairy beverages (jelly made up ready to eat)	N/A
5	Non-dairy beverages (refer p 65 Review Report)	As per HSR Category 1	N/A	New approach to HSR Category 1 non-dairy beverages based on French Nutri-Score System	N/A

*In the HSR calculator star points from 1-10 are assigned to the HSR final score for a food product according to the scaling criteria employed for each HSR food category, the star points translate to ten increments in health star ratings displayed on food labels (½ to 5 stars). The HSR final score is obtained by summing HSR baseline points for risk increasing nutrients and HSR modifying points for risk reducing components.