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

Report 1: Review of modelling undertaken for the Health Star Rating System Five Year Review

July 2020

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Summary

Subsequent to completion of the mpconsulting independent Five Year Review of the Health Star Rating (HSR) System (Review Report), the Australia New Zealand Forum on Food Regulation (the Forum) requested that Food Standards Australia New Zealand (FSANZ) undertake further modelling and provide advice on the combined impact of specific recommendations when considered in the context of all recommended HSR calculator changes proposed to be implemented. This report (Paper 1) specifically 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, as well as providing additional modelling in relation to the reclassification and rescaling of dairy foods.

Overall, modelling cited in mpconsulting's final Review Report was found to be robust and accurate. Where small differences were identified, these could be attributed to slight differences in the underlying assumptions made about the data in the HSR Technical Advisory Group (TAG) database in the modelling process.

The impact of adopting the Recommended HSR calculator resulted in approximately 22% of TAG database products being affected by increased (14%) or decreased (8%) HSRs. Reclassification, rescaling and using new calculation methods for HSR Category 1 foods (non-dairy beverages, ice confection and jelly) had a greater impact than the adjustment of sodium and total sugars HSR baseline points tables, which generally resulted in a reduction in HSRs for a smaller proportion of products across a broad range of Australian Guide to Healthy Eating (AGHE) food categories.

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.

Rescaling of HSR Category 3D cheeses and clarification of definitions resulted in an increase of 0.5 stars for almost 70% of relevant TAG database products, impacting regular and reduced fat hard ripened and processed style cheeses as well as camembert, brie and other surface ripened cheeses.

Rescaling of other HSR Category 2D dairy foods and reclassification of dairy based Custards/desserts to Category 2D, resulted in a reduction in HSRs for Cream and Cream cheese products, although these were already scoring relatively low HSRs using the Original HSR calculator. Yoghurts and soft cheeses were impacted by increases in HSR. Custards/desserts were impacted by a mixture of increased and decreased HSRs giving a better spread of HSRs across this AGHE category compared to the nutritionally similar Yoghurts and soft cheeses, overall providing better alignment with dietary guidelines. Additional options investigated relating to classification and rescaling of dairy-based products resulted in minimal effects for the Cream and Cream cheese products (with and without a reclassification to HSR Category 2); excluding the recommended reclassification and rescaling for dairy products in HSR Categories 2D and 3D did not result in better alignment with dietary guidelines compared to the Recommended HSR calculator.

Implementing the Nutri-Score System to calculate HSRs for HSR Category 1 non-dairy beverages and the reclassification of ice confectionary and jelly as Category 1 foods the Recommended HSR resulted in all products in this category receiving lower HSRs, including fruit juices.

1. Introduction

The Heath Star Rating (HSR) system was implemented as a voluntary food product front of pack labelling program in Australia in June 2014 following agreement by the Australia New Zealand Forum on Food Regulation (the Forum). The Forum also requested that a formal, independent review of the HSR system should be carried out after five years of implementation. To action this request mpconsulting were engaged from 2017-19 to undertake an independent review of the HSR system (the Review).

The Review considered if, and how well, the HSR system has met its objectives, including by reference to the impact of the HSR system, and presented ten recommendations for enhancements to the HSR system for consideration by the Forum. Overall the Forum was supportive of the recommendations outlined in the Review Report. However, the Forum also requested additional information and consideration of Recommendation 4, relating to a package of proposed changes to the way the HSR is calculated to better align foods with dietary guidelines, reflect emerging evidence, address consumer concerns and encourage positive reformulation.

The Forum requested that FSANZ undertake further modelling and provide advice on the impact of specific recommendations when considered in the context of all recommended HSR calculator changes proposed to be implemented.

1.1 Changes to the HSR calculator recommended by the Review

Recommendation 4 of the Review proposed a package of changes to the HSR calculator to:

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 (FFG) and dairy dessert type products
4e re-categorise water-based ice confections and jellies, and calculate HSRs for these products on an 'as prepared' basis[1]

In addition, recommendation 5 of the Review proposed a policy change to increase the HSRs of flavoured waters to 4.5 stars where they are nutritionally similar to plain packaged water, which is assigned an automatic 5 stars. An alternative method for calculating HSRs for all other non-dairy beverages was also proposed, based on the French Nutri-Score system that focusses only on energy, total sugars and fruit and vegetable content. These recommendations were intended to better discern water and flavoured waters from high energy drinks.

1.2 Forum request for additional modelling and advice

Following detailed consideration of the Review report, the Forum requested that FSANZ provide additional modelling and advice in relation to:

[1] 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.

- Recommendation 4b – provide further modelling and advice on the combined impact of both the recommended 25 baseline point and the stronger 30 baseline point table for total sugars.
- Recommendation 4c - provide further modelling and advice on the combined impact of both the recommended sodium baseline points table and an alternative baseline points table which takes a stronger approach to products with <900 mg/100 g sodium previously considered in the draft HSR review report.
- Recommendation 4d – provide further modelling and advice on the combined impact of re-categorisation and rescaling of dairy products.
- Recommendation 4e – include the re-categorisation of jellies and water-based ice confections in modelling of combined impacts of recommended changes to the HSR calculator.
- Recommendation 5 – provide advice on a suitable definition for drinks similar in nutritional profile to water that would be eligible to receive an automatic HSR of 4.5 stars.
- A peer review of the modelling that informed the HSR five year review report recommendations and advice on combined impacts.

The Forum also requested that FRSC determine a suitable definition for minimally processed fruits and vegetables that would be eligible to receive an automatic HSR of 5 stars (Recommendation 4a).

This report (Report 1) specifically 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, as well as providing additional modelling in relation to the reclassification and rescaling of dairy foods.

Modelling under Recommendations 4b and 4c relating to the impact of alternative total sugars and sodium HSR baseline points tables is the subject of a separate report (Report 2).

1.3 TAG Dataset and Calculator

The database of foods used by the HSR Technical Advisory Group (TAG) for modelling proposed changes during the Review (the TAG database), was used by FSANZ to undertake a peer review and assess the impact of the additional modelling. While noting that there are some limitations relating to the TAG database, it was used in its current form for consistency and to allow comparability in results with previous work undertaken in the Review and for modelling of additional scenarios.

The TAG database includes product data for 5,885 packaged and unpackaged foods and drinks sold in Australia and New Zealand, provided by the food industry. Data cover the range of HSR components including energy, saturated fat, total sugar, sodium, protein and fruit, vegetable, nut and legume (FVNL) and fibre content data for all foods where applicable.

Each food was assigned four different classifications for analysis and reporting purposes. These include a:

- HSR category
- food category based on the Australian Guide to Healthy Eating (AGHE), such as fats and oils, breakfast cereals, dairy beverages, fruits and vegetables
- 5-digit classification based on the classification system developed for reporting food and nutrient intakes from the 2011-13 Australian Health Survey (AHS)

- 'Five Food Group'[2] (FFG) or 'Discretionary'[3] food classification based on the criteria used to develop the AHS Discretionary Food List, which were based on the 2013 Australian Dietary Guidelines (ADGs).

Individual products within a 5-digit AHS classification may be split across one or more AGHE categories. In addition, a 5-digit classification may contain a mix of FFG and discretionary foods (e.g. Breakfast cereals and Snacks).

As the AHS Discretionary Food List was based on the ADGs it was used to assess alignment of HSR ratings with these guidelines, which provide advice on consumption of different types of foods, not individual food products. There are limitations to this approach in that the AHS Discretionary Food List was also not intended to cover individual products, rather food groups at the 5-digit AHS classification level and, in a few cases, individual foods (8-digit classification level). Despite these limitations, in this analysis it was considered the best option available for an assessment of the impact of recommended changes to the original HSR calculator and also provides consistency with previous modelling undertaken by the TAG and mpconsulting.

The majority of products in the TAG database are in HSR Categories 1 and 2 and represent 40 of the 42 AGHE categories (Table 1). While the database includes only a small sub-set of products available for consumption in Australia and New Zealand, the database captures a wide range of products that are eligible to carry a HSR within the majority of AGHE categories. The TAG database thus represents foods with diverse nutrient profiles and as such is considered suitable for use in determining the potential impact of recommended changes to the original HSR calculator.

Table 1 Types of products represented in the TAG database

HSR Category	No. of products	Representation of products
Category 1, 1D	980	Fruit and/or vegetables juices and drinks, and dairy beverages are well represented, while more limited data are available for other non-dairy beverages such as cordials and carbonated beverages (especially reduced sugar and intense sweetened products) and flavoured waters.
Category 2, 2D	4,368	Bread, breakfast cereals, dairy foods, fruit, vegetables and meat are well represented, with more limited data available for dips, pizza and yeast spreads. Bakery products/cakes, biscuits, confectionary, sauces/condiments/meal bases have reasonable numbers, however represent a smaller proportion of the wide range and individual variety of products available for consumption in these food categories.
Category 3, 3D	537	Fats, oils and cheeses are well represented

For more information on the products in the TAG database refer to Attachment 1.

[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] Used in the ADGs 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.

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

2.1 Review of modelling

As part of its consideration of the recommendations from the Review, the Forum requested that FSANZ undertake a peer review of the modelling undertaken by mpconsulting during the Review.

A considerable amount of modelling using the TAG database and HSR calculator was undertaken over the duration of the Review to assist in determining the effect of proposed calculator amendments. Detailed modelling was undertaken by the TAG in response to specific requests from the Health Star Rating Advisory Committee (HSRAC) relating to anomaly submissions and issues raised by stakeholders. Detailed modelling and associated reports prepared by the TAG are available on the mpconsulting website in relation to specific food categories such as snack bars, confectionery, fats, oils and oil based spreads, non-dairy beverages, salty snacks and hot potato products etc. In addition, the TAG also provided detailed analysis of specific components or proposed components of the HSR calculator including protein, sodium, sugars (added and total), fibre, calcium etc.

Advice provided by the TAG supported the HSR review. In addition, in finalising its review mpconsulting also undertook its own modelling using the TAG database and HSR calculator to assess the impact of specific issues and overall impact of all changes recommended in its review report.

In undertaking its peer review of modelling as requested by the Forum, FSANZ has limited the scope to assessing the accuracy of the modelling presented in the final Review Report using the TAG database and HSR calculator only. We have not reviewed the relevance of the options considered by mpconsulting or assessed the pros and cons of the final recommendations to amend the calculator.

2.2 Review of modelling provided in Chapters four and five of the Review Report

Chapters four and five of the Review Report contain an analysis of a number of specific recommendations to amend the HSR calculator. FSANZ used the original version of the HSR calculator (as has been used for the last five years) and the calculator incorporating all changes recommended in the review (refer to Section 3) to replicate the modelling undertaken by mpconsulting. Using this method we were able to confirm the accuracy of specific values cited in chapters 4 and 5 of the Review Report in relation to:

- the effect of more strongly penalising total sugars in the calculator by implementing a 25 HSR baseline point total sugars table
- the effect of more strongly penalising sodium in the calculator by reducing the maximum sodium concentrations used to determine HSR baseline points
- the effect of reclassification of dairy products in HSR Categories 2D and 3D
- the effect of application of the Nutri-Score System to non-dairy beverages in HSR Category 1
- the overall impact of all recommended changes to the HSR calculator.

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

3.1 Approach

The Forum requested that FSANZ provide advice on the combined impact of all recommended changes to the HSR calculator. In order to undertake this work the current HSR calculator was updated to reflect all of the changes as recommended in the Five Year Review, as described in Table 2 below.

The TAG database was used to assess the impact of all recommended changes by comparing the HSRs of database products derived using the original HSR calculator with the HSRs of those same database products derived using the updated calculator.

So as to be clear in discussing the combined impact of all recommended changes the two scenarios described above are called:

- Original – the HSR calculator as developed and has been used to date.
- Recommended – based on the original calculator and incorporating all changes as recommended in the Review Report and summarised below in Table 2.

Table 2 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 p49 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

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**
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*
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.

3.2 Outcomes of modelling

3.2.1 Impact on all categories except non-dairy beverages

Overall, as summarised in Table 3 below a total of 22% of all products, except non-dairy beverages, in the TAG database were affected by modelling of Recommended HSR

calculator changes combined (details provided in Appendix 2 Table 8 and Table 10). Of these 16% were for FFG products and 6% for discretionary products, with most of the increased HSRs being for FFG products (14% total) and the majority of decreased HSRs being for discretionary products (6% total).

Table 3 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	445 (8%)	131 (2%)	314 (6%)
Total impacted products	1236 (22%)	901 (16%)	335 (6%)

Recommendation 4a

The policy decision to award all minimally processed fruit and vegetables a HSR of 5 resulted in an increase of HSRs for almost all fruit (97%), which, due to their total sugars content were previously scoring 4-4.5 stars. Fewer minimally processed vegetables had an increased HSR (48%) as a larger proportion of these products were already achieving a HSR of 5 since many vegetables have a lower total sugars content than fruit. In addition, a range of vegetables classified as 'processed' were identified as potentially being minimally processed hence eligible to an increase in HSR from 4 or 4.5 stars to 5 stars.

Recommendation 4d

HSR Category 3D cheeses are all flagged as FFG foods. For these cheeses a 0.5 HSR increase occurred for almost 70% of products as a result of the rescaling of criteria for assigning stars in this category (i.e. increasing the value of the HSR final score required to obtain each of the 10 HSR star points), thus increasing the proportion of cheeses with HSRs of 3 or more from 45% to 52% (Figure 1). Dietary guidelines include cheeses as one of the foods recommended to be enjoyed as part of a wide variety of nutritious food every day, although the guidelines also recommend enjoying mostly reduced fat dairy products and limiting intake of foods high in saturated fat and added salt. Rescaling of the cheese category impacted the proportion of regular fat and reduced fat products receiving a 0.5 star increase approximately equally (refer to Appendix 2, Table 16), but may be considered to improve alignment with dietary guidelines as 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 (Figure 2).

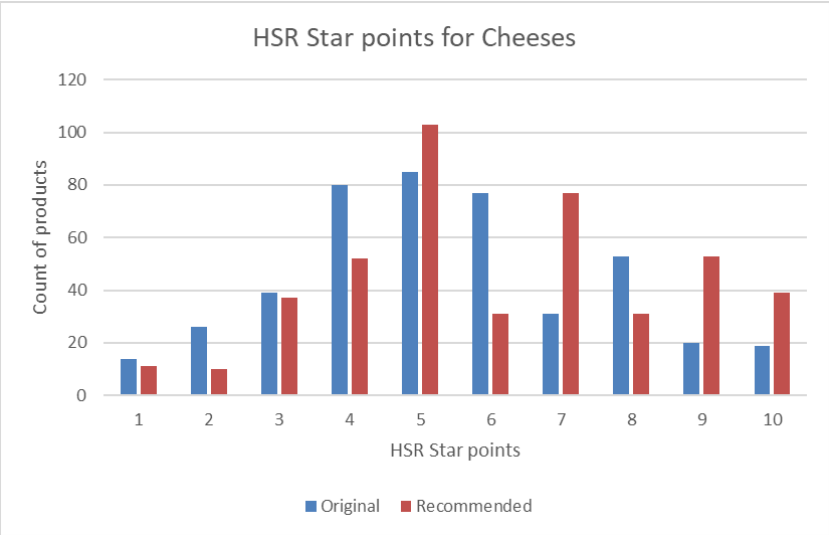

Figure 1 *Distribution of original HSR star points for Category 3D cheeses in the TAG Database, for the Original calculator and following implementation of Recommended HSR calculator changes*[4]

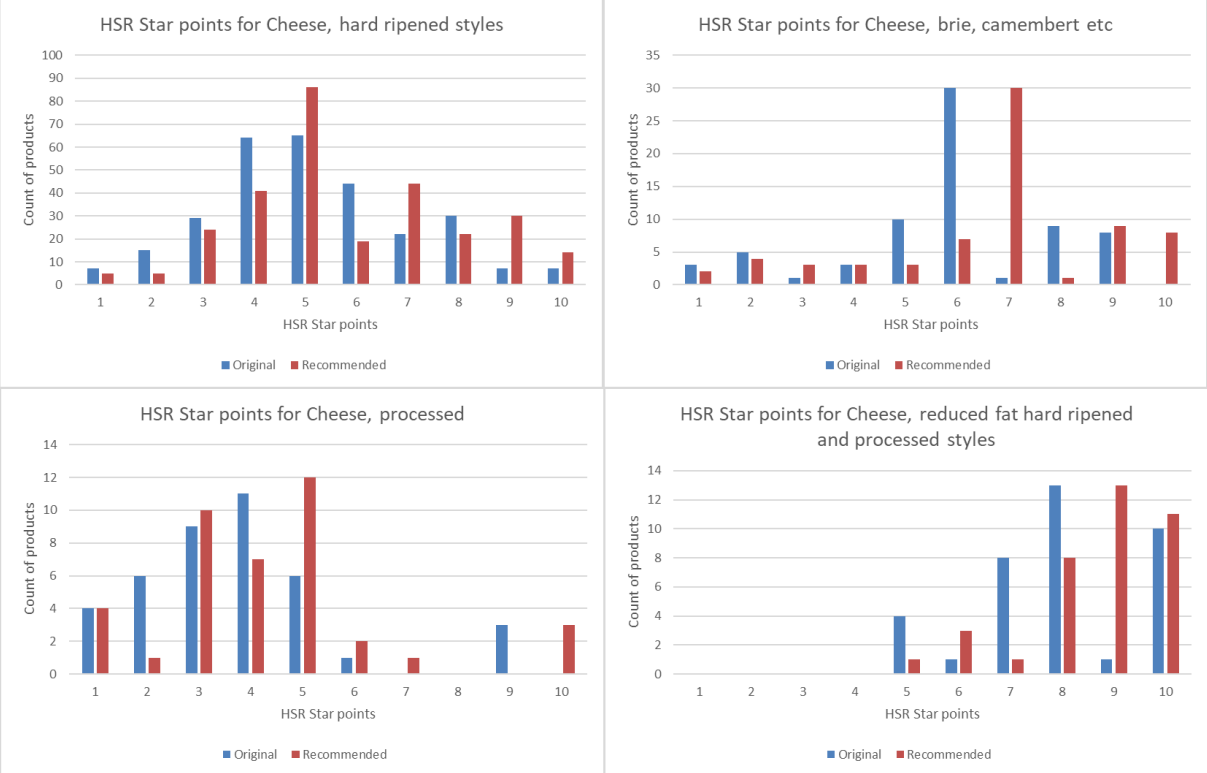

Figure 2 *Distribution of original HSR star points for Category 3D cheeses , in the TAG Database by 5-digit classifications for the Original HSR calculator and following implementation of the Recommended HSR calculator changes*

For AGHE category Yoghurts and soft cheeses (Figure 3) there was a redistribution of HSRs upwards for all products in this category as a result of reclassification of other dairy foods (Cream, Cream cheese and Custards/desserts) as Category 2D foods for HSR calculation purposes, and rescaling of that category.

[4] 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 the ten increments in health star ratings displayed on food labels (½ to 5 stars)

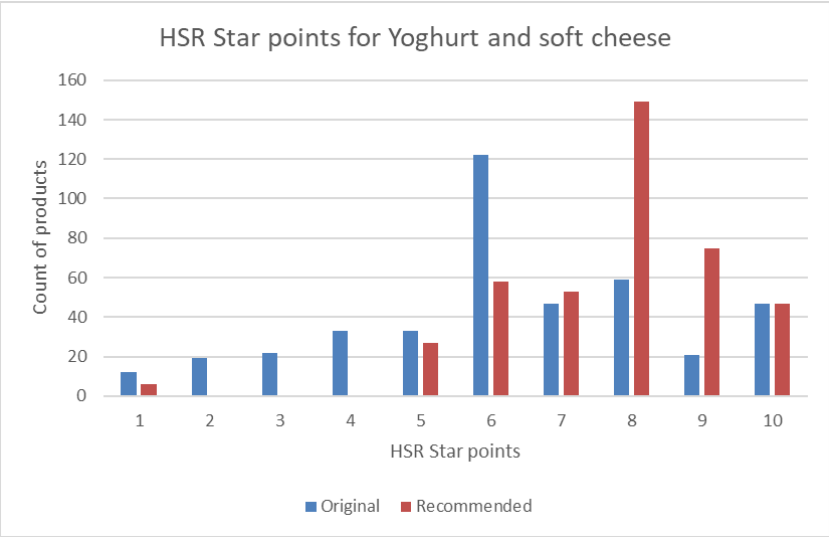

Figure 3 *Distribution of original HSR star points for AGHE category Yoghurts and soft cheeses in the TAG Database for the Original HSR calculator and following implementation of the Recommended HSR calculator changes*

Reclassification of AGHE categories Cream, Cream cheese and Custards/desserts as HSR Category 2D dairy foods for HSR calculation purposes resulted in a range of adjusted scores.

Almost all affected Creams (88%) and Cream cheese (70%) had a decreased HSR when all changes in the Recommended HSR calculator were implemented (Figure 4), reducing to the lowest rating of 0.5 stars. However, the majority of these products already had relatively low HSRs at ≤2 using the Original HSR calculator. Four products had an increase in HSR from 3.5 to 4 using the Recommended HSR calculator. These were all lite/extra lite cream cheese products with <3.5 g saturated fat /100 g. There is therefore a wide range of HSRs across this category, with differentiation in products in line with dietary guidelines.

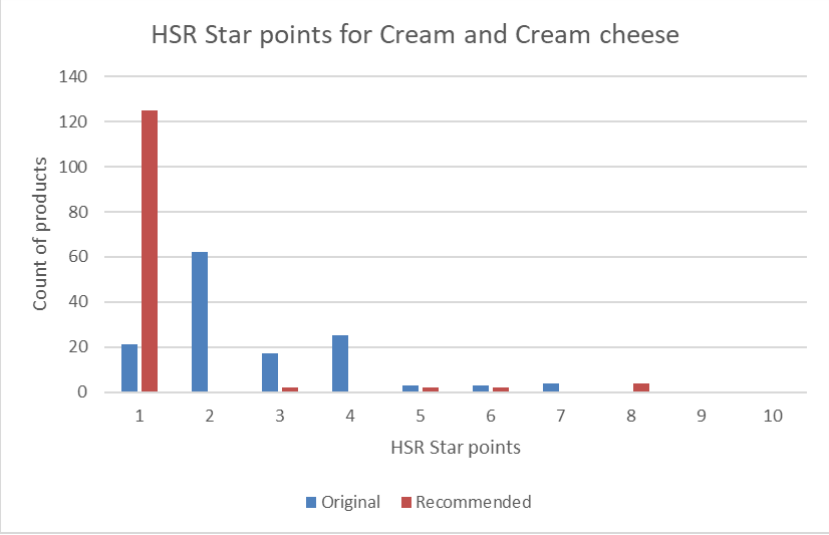

Figure 4 *Distribution of original HSRs for AGHE categories Cream and Cream cheese in the TAG Database, and following implementation of Recommended HSR calculator changes*

For Custards/desserts, reclassification to Category 2D for calculation purposes resulted in increased HSRs for 44% and decreased HSRs for 23% of these products (Figure 5), giving a broader distribution of HSRs across this AGHE category when previously there had been a large number with HSRs of 3-3.5. The reclassification of Custards/desserts has resulted in better comparability of similar products with similar nutrient profiles which are sold side-by-

side in the supermarket refrigerator (e.g. yoghurts and custards). This was the desired outcome when this issue was considered as an anomaly by the HSR Advisory Committee and the recommendation was made to reclassify Custards/desserts.

Overall, dairy foods were affected primarily by the reclassification of some products and rescaling of the HSR Category 2D, but recommended changes to total sugars baseline points tables also have an impact for some products (Recommendation 4b).

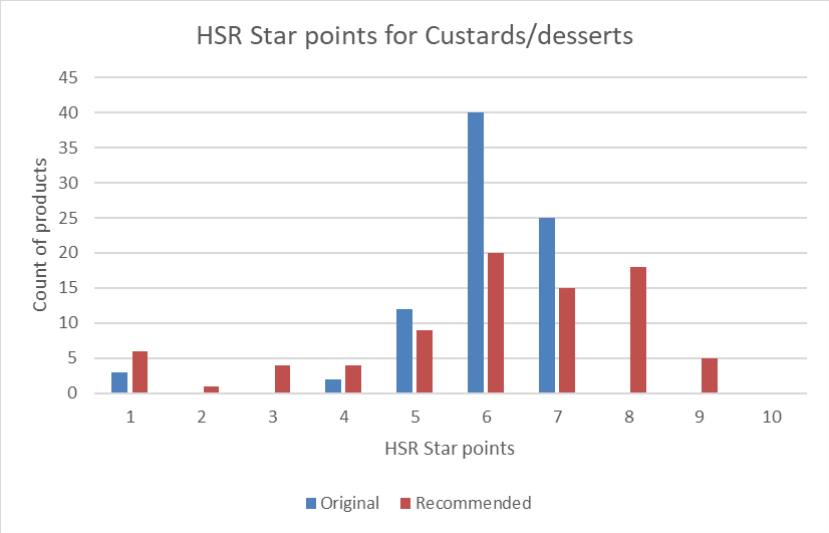

Figure 5 *Distribution of original HSR star points for AGHE category Custards/desserts in the TAG Database for the Original HSR calculator and following implementation of the Recommended HSR calculator changes*

Recommendation 4e

Reclassification of AGHE Jelly and Ice confectionery as HRS Category 1 Non-dairy beverages[5] for the purpose of HSR calculations resulted in reductions for all products in these categories to a HSR of 0.5 when the Recommended HSR calculator was implemented (Figure 6).

[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.

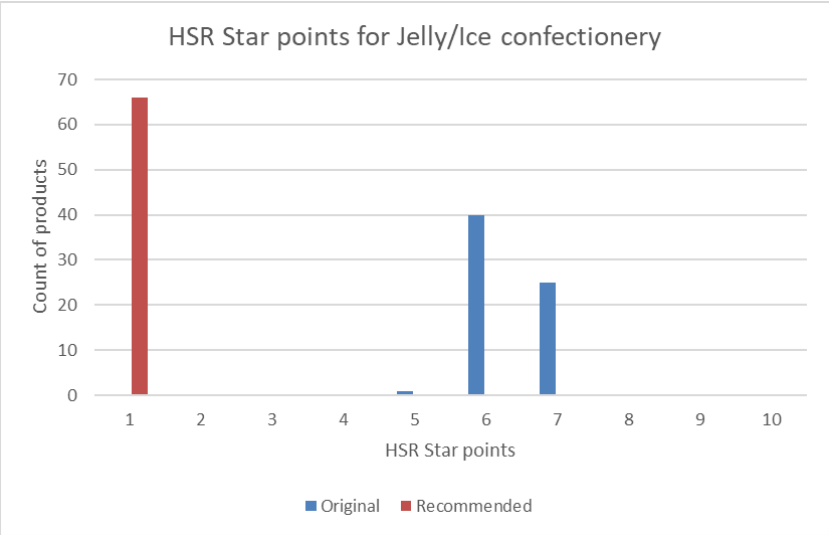

Figure 6 *Distribution of original HSR star points for AGHE categories Ice confectionery and Jelly in the TAG Database for the Original HSR calculator and following implementation of the Recommended HSR calculator changes*

Recommendation 4b and 4c

For all other AGHE categories with decreased HSRs a range of products were affected by implementation of the Recommended HSR calculator, the majority 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 (56 affected products with >900 mg sodium/100 g across HSR Categories 1D and 2, compared with 154 affected products with ≤900 mg sodium/100 g).

3.2.2 Impact on Non-dairy beverages (Recommendation 5)

As a result of implementation of the recommended approach to calculating HSRs for non-dairy beverages, based on the Nutri-Score system (Recommendation 5), the majority (94%) of non-dairy beverages had a decrease in HSR of 0.5 to 3 stars (refer to Figure 7-10, below and Appendix 2 Table 9 and Table 11). The impact was greatest for Whole juices with 98% of products affected, for some by up to 3 stars reduction. While already scoring a maximum of only 1.5 stars in the Original HSR calculator, 90% percent of Other juices were impacted by implementation of the Recommended HSR calculator by up to 1 star reduction and 92% of carbonated beverages were affected by a decrease of 0.5 stars.

Diet/no sugar/intense sweetened carbonated beverages were not represented in the TAG database, however additional data on these products were collected for this analysis and HSRs determined using the Original HSR calculator and the Recommended HSR calculator. All products assessed had 1-12 kJ energy/100 mL and 0-2 g total sugars /100 mL and received an original HSR of 2. These low energy drinks had increased HSRs of 3-3.5 stars when the Recommended HSR calculator was applied.

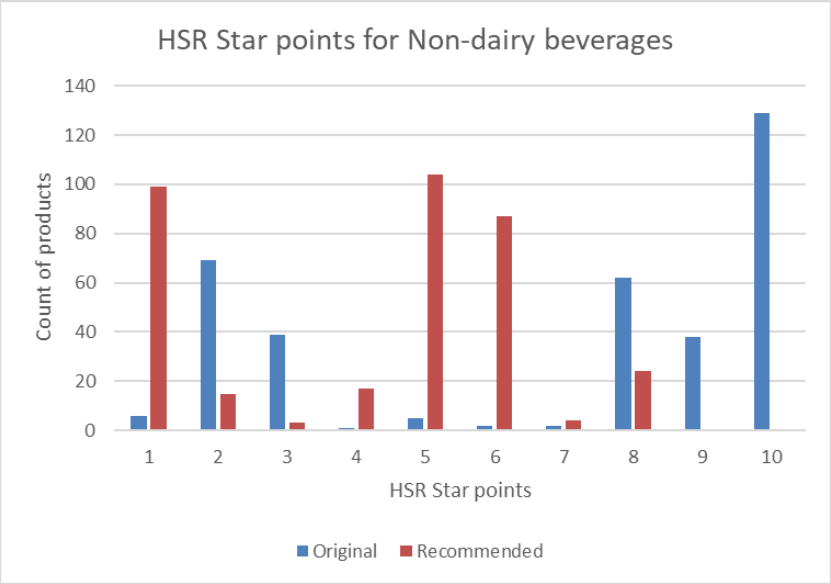

Figure 7 *Distribution of original HSR star points for HSR Category Non-dairy beverages in the TAG Database for the Original HSR calculator and following implementation of the Recommended HSR calculator changes*

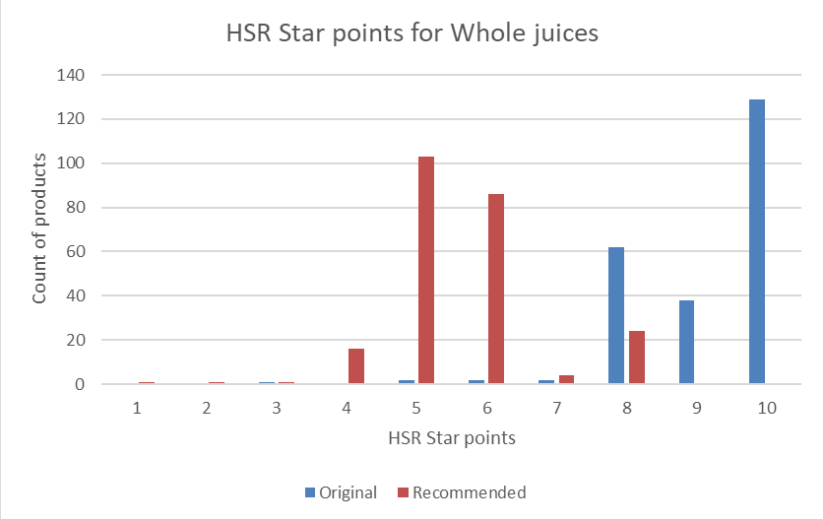

Figure 8 *Distribution of original HSR star points for AGHE Category Whole juices in the TAG Database for the Original HSR calculator and following implementation of the Recommended HSR calculator changes*

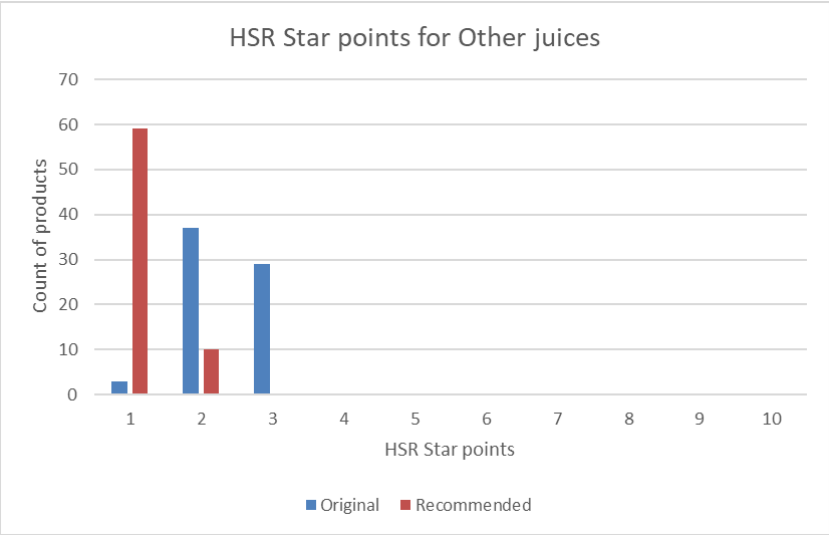

Figure 9 *Distribution of original HSR star points for AGHE Category Other juices in the TAG Database for the Original HSR calculation and following implementation of the Recommended HSR calculator changes*

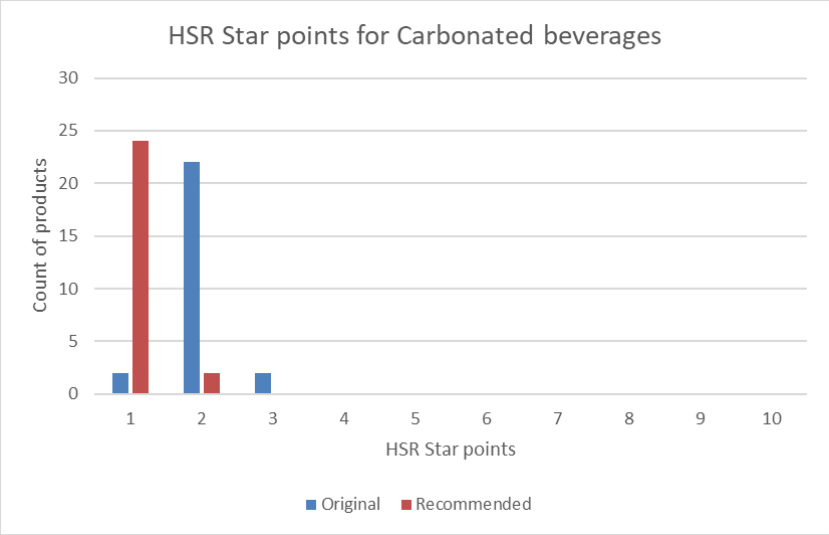

Figure 10 *Distribution of original HSR star points for AGHE Category Carbonated beverages in the TAG Database for the Original HSR calculation and following implementation of the Recommended HSR calculator changes*

3.2.3 Impact of Recommended HSR calculator on FFG and discretionary flagged foods

One option for assessing the impact of implementing the Recommended HSR calculator is to determine the effect on FFG and discretionary foods. The intention of making recommended changes to the Original HSR calculator was that there would be greater consistency of HSRs of individual foods with advice given in dietary guidelines. FFG foods would generally be expected to score higher HSRs than discretionary foods.

Each product in the TAG database was assigned a FFG/discretionary food flag, For 5522 products in the database in HSR Categories 1D, 2, 2D, 3 and 3D, 63% were flagged as FFG and 37% were discretionary foods, with 16% FFG products and 6% for discretionary products affected by implementing the Recommended HSR calculator. Most of the products with increased HSRs were FFG (14% total) and the majority of products with decreased HSRs were discretionary products (6% total), refer to Table 3. Based on the Original HSR

calculator FFG foods were already achieving an overall higher average HSR compared to discretionary foods. This differentiation between FFG and discretionary foods increased slightly when the Recommended HSR calculator was implemented, with the overall average HSR for FFG foods increasing by 0.1 stars and the average HSR for discretionary foods decreasing by 0.1 stars (Table 4).

Table 4 *Average HSRs for FFG and Discretionary foods for Original and Recommended HSR calculators for products in HSR Categories 1D, 2, 2D, 3 and 3D.*

	Count of products	Proportion of total products	Average HSR Original HSR calculator	Average HSR Recommended HSR calculator
FFG foods	3477	63	3.6	3.7
Discretionary foods	2045	37	2.3	2.2
Total	5522	100	3.1	3.2

Another general indicator of alignment with the dietary guidelines is the number of FFG products that may be scoring relatively low HSRs and discretionary foods that may be scoring relatively high HSRs. In order to be consistent with previous work on alignment with dietary guidelines carried out by the TAG a HSR of <3 was used to identify potential FFG outliers, and a HSR of ≥3 is used to identify potential discretionary food outliers.

Overall, for products in HSR Categories 1D, 2, 2D, 3 and 3D, implementation of all changes in the Recommended HSR calculator reduces the total number of FFG/discretionary outliers, with fewer FFG products in the TAG database receiving a HSR of <3, and fewer discretionary products receiving a HSR of ≥3, refer to Figure 11.

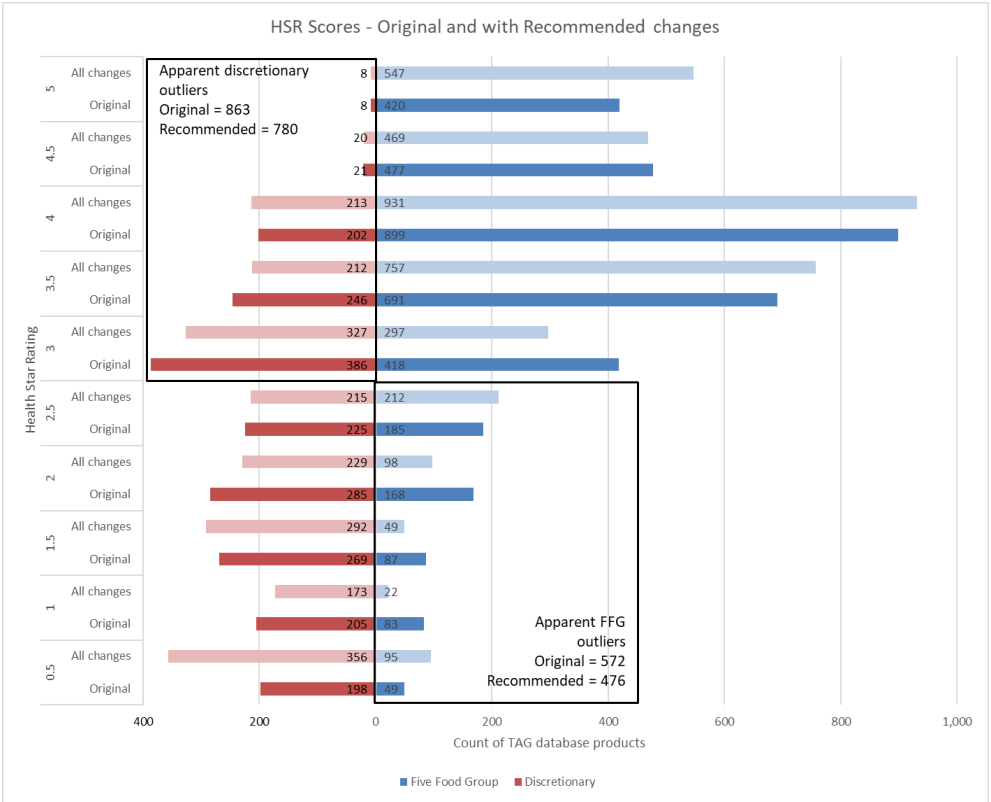

Figure 11 *Distribution of HSRs for all products in the TAG Database except Non-Dairy Beverages in HSR Category 1 by FFG and discretionary flags for Original HSR calculator and the Recommended HSR calculator changes*

For Non-dairy beverages in HSR Category 1, alignment with the dietary guidelines has decreased as a result of implementing the recommended approach to calculating HSRs for

this category (Figure 12). A greater number of FFG products have a HSR of <3. This is primarily as a result of the reduction in HSRs for Whole fruit juice and Other juice, with HSRs for a proportion of products decreasing to 2.5. However, this may be of less concern as while fruit juice is flagged as a FFG food, dietary guidelines also recommend that fruit should mostly be eaten fresh and raw due to its higher fibre content, with juice to be diluted for young children.

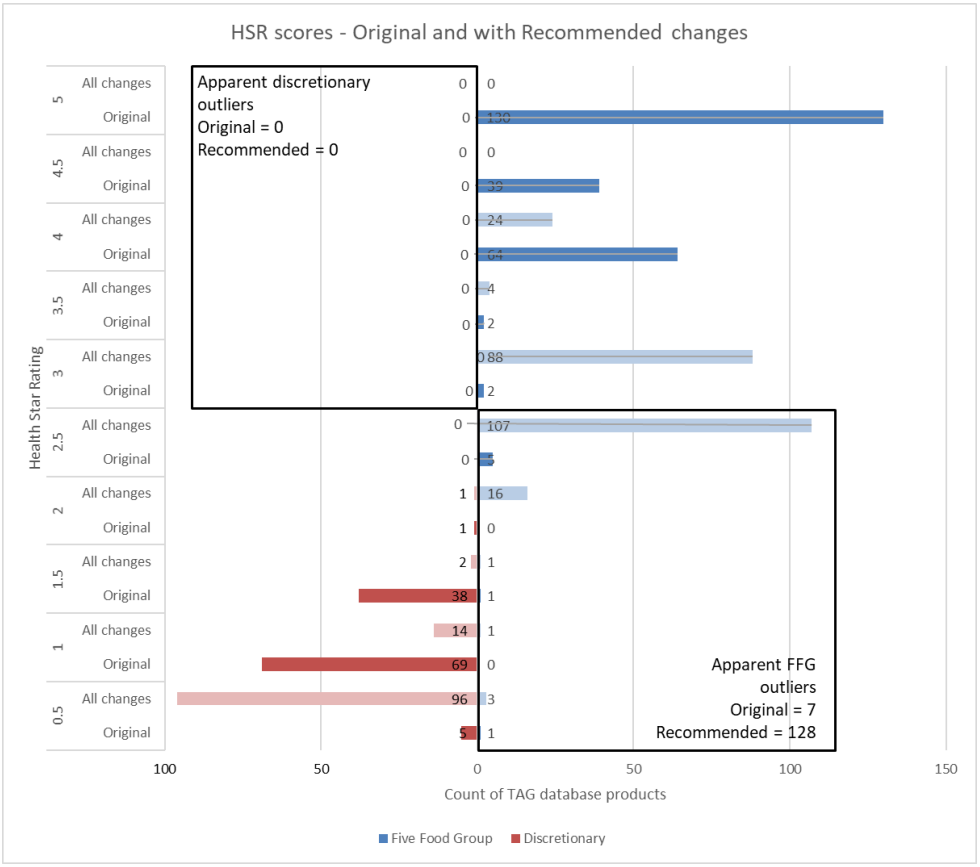

Figure 12 Distribution of HSR for Non-Dairy beverages in HSR category 1 in the TAG Database by FFG and discretionary flags for Original HSR calculator and the Recommended HSR calculator changes

3.2.4 Impact of Recommended HSR calculator on AGHE food categories

In order to provide a better indication of the types of products that were affected by all recommended changes to the HSR calculator, an analysis was undertaken by broad AGHE categories and broken down into their allocated 5-digit AHS classification. As summarised in Table 5, modelling of all changes combined (Recommended HSR calculator) by AGHE food categories resulted in no changes to HSRs for products in nine AGHE categories, increased HSRs for four categories, decreased HSRs for 15 categories and a mixture of increased and decreased HSRs for the remaining six AGHE categories (summary of AGHE categories given in Appendix 2, Table 8-Table 11).

Table 5 Summary of impacts on AGHE categories in HSR Categories 1D, 2, 2D, 3 and 3D as a result of Recommended changes to the HSR calculator

No changes to HSRs	Increased HSRs only	Decreased HSRs only	Increased and decreased HSRs
Bread	Cheese	Breakfast cereals	Dairy beverages
Pasta/flour/grains	Yoghurts and soft cheese	Bakery/cake mixes	Cream
Dairy alternative beverages	Unprocessed fruits	Biscuits	Cream cheese
Dairy beverage dry mixes	Unprocessed vegetables	Confectionery	Custards/desserts
Fats and oils		Dressings	Processed fruit
Dips		Ice confectionery	Processed vegetables
Pizza		Ice cream	
Soups/stocks		Jelly	
Plant protein		Meals/meal bases	
		Miscellaneous foods	
		Sauces/condiments	
		Snacks	
		Yeast spread	
		Meats/fish	
		Nuts	

Details of affected 5-digit classifications for core AGHE categories are provided in Appendix 2 Table 16 for 'core' AGHE categories and Table 17 for 'non-core' AGHE categories.

For 'core' AGHE categories, within which FFG products generally fall, the most changes at the AHS 5-digit classification level were seen in:

- Unprocessed fruits and Unprocessed vegetables where the policy decision was that all minimally processed fruits and vegetables should receive a HSR of 5
- Cheese, hard cheese ripened styles with 193 of 290 products affected by an increase in HSR of 0.5 stars
- Yoghurt, flavoured or added fruit, full fat, with 98 of 102 products affected by an increase in HSR of 0.5-1 stars
- Yoghurt, flavoured or added fruit, reduced fat, with 84 of 93 products affected by an increase in HSR of 0.5-1 stars
- Yoghurt, flavoured or added fruit and/or cereal, high fat (>4 g/100g fat), with all 71 products affected by an increase in HSR of 0.5-2 stars
- Cheese, camembert, brie and other surface ripened cheeses, with 58 of 70 products affected by an increase in HSR of 0.5 stars.

Other notable changes at the 5-digit classification level for 'core' AGHE categories included:

- Breakfast cereal, rice based, fortified, with 5 of 16 products affected by a reduction of HSR of 0.5 stars, 4 of these 5 cereals were flagged as discretionary
- Breakfast cereal, mixed grain, fortified, sugars >20 g/100g,with 7 of 20 products affected by a 0.5-1.5 star reduction, 1 of these 7 cereals was flagged as discretionary
- Ham with 11 of 29 products affected by a 0.5-1 star reduction, all of which were flagged as discretionary.

For 'non-core' AGHE categories, within which discretionary products generally fall, the most changes at the 5-digit classification level were seen in:

- Cheese, unripened styles, including cream and cottage cheese, regular fat, with 33 of 46 products affected by a 0.5-1.5 star reduction, all products flagged as FFG
- Cheese, unripened styles, including cream and cottage cheese, reduced fat, with 16 of 16 products affected by a mixture of an increase or decrease in star ratings, all products were flagged as FFG
- Cream, regular and increased fat, with 29 of 33 products affected by a 0.5-1 star reduction, all products flagged as discretionary
- Dairy desserts, smooth or gelatine-based dairy desserts, with 27 of 47 products affected by a mixture of increased and decreased HSRs, all products flagged as discretionary
- Custard, fat content <4 g/100 g, with 21 of 25 products affected by a 0.5-1 star increase and 3 by a 0.5 star reduction, all products were flagged as FFG
- Lollies and other confectionery, sugar sweetened, with 20 of 40 products affected by a 0.5 star reduction, all products were flagged as discretionary
- Sugar-based desserts (jelly), all 19 products affected by a 2.5-3 star reduction due to reclassification as HSR Category 1 foods (jelly made up ready to eat), all products were flagged as discretionary
- Water ice confection, gelato, sorbet, with all 46 products affected by a 2-3 star reduction, due to reclassification as HSR Category 1 foods, all products were flagged as discretionary.

For non-dairy beverages (Appendix 2 Table 19), the most affected 5-digit classifications were:

- Fruit juices, commercially prepared, with 185 of 188 products affected by a 0.5-3 star reduction, all products were flagged as FFG
- Fruit and vegetable juice blends, with 40 of 42 products affected by a 0.5-2.5 star reduction except for one product with a 0.5 star increase, all products were flagged as FFG
- Fruit juices, fortified, with all 10 products affected by a 1.5-2.5 star reduction, all products were flagged as FFG
- Soft drinks, non-cola, with 13 of 15 products affected by a 0.5 star reduction, all products were flagged as discretionary.

4. Reconsideration of recommended dairy re-categorisation and rescaling

4.1 Approach

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

The impact of implementing recommended changes relating to HSR Category 3D Cheeses is discussed under Section 3.2.1. As discussed under that section, it appears that the rescaling of 3D generally increases alignment with dietary guidelines. This is the only recommended change to the 3D Cheese category and is not discussed further.

In order to address the Forum request in relation to Category 2D dairy foods additional scenarios were modelled to determine the outcomes if none or only some of the recommendations of the Review Report relating to this category were implemented in association with the combined impact of all other recommended changes.

Outcomes from the Original HSR calculator were compared to the Recommended HSR calculator with the following adjustments relating to additional changes for dairy-based products:

- Dairy Scenario 1 - All recommended changes except Cream and Cream cheese – this scenario models recommended changes to sodium and sugars HSR baseline points tables, rescaling of Cheese, reclassification of Custards/desserts to HSR Category 2D and rescaling of that category. It does not include the reclassification of Cream and Cream cheese to the HSR Category 2D Yoghurts and soft cheeses.
- Dairy Scenario 2 - All changes except dairy (HSR Categories 2D, 3D) – this scenario models recommended changes to sodium and sugars HSR baseline points tables, but does not include any other recommended changes relating to dairy-based products.

Note that the above scenarios and therefore this analysis is limited to affecting the following AGHE dairy categories only:

- Yoghurt and soft cheese
- Cream
- Cream cheese
- Custard/desserts

4.2 Outcomes of modelling

4.2.1 Original HSR calculator compared with all recommended changes except reclassification of Cream and Cream cheese (Dairy Scenario 1)

Under Dairy Scenario 1, HSR outcomes for AGHE categories Yoghurts and soft cheeses and for Custards/desserts remain the same (Figure 13) as for the Recommended HSR calculator discussed in section 3.2.1 above.

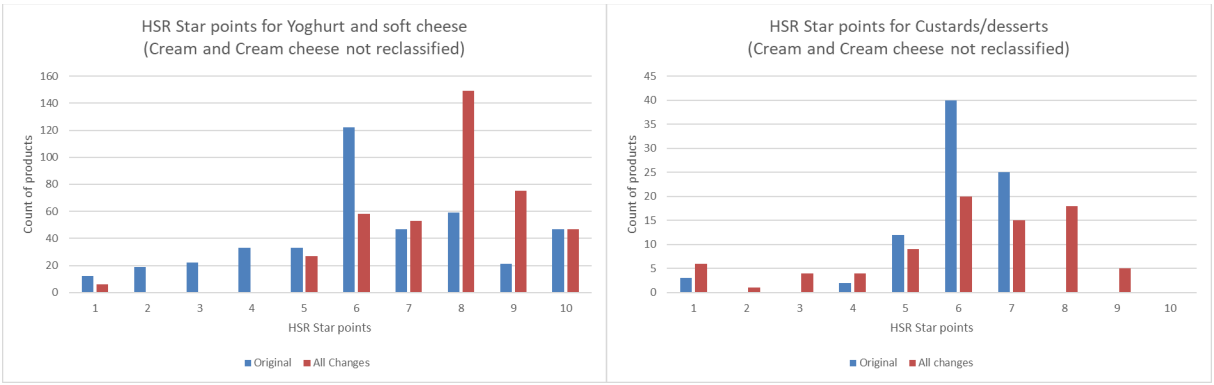

Figure 13 Distribution of HSR star points for the Original HSR calculator for AGHE Categories Yoghurt and soft cheese and Custards/desserts in the TAG Database and following implementation of all recommended HSR calculator changes except reclassification of Cream and Cream cheese

If the AGHE categories Cream and Cream cheese are not reclassified as HSR Category 2D dairy foods, there remains a small impact on HSRs (Figure 14) as a result of the recommended changes to the total sugars points tables, given that the recommended changes to the sodium points table did not affect products with <900 mg sodium/100 g. This impact was limited to Cream cheese products, five (7%) of which had a reduction from 1 to 0.5 stars.

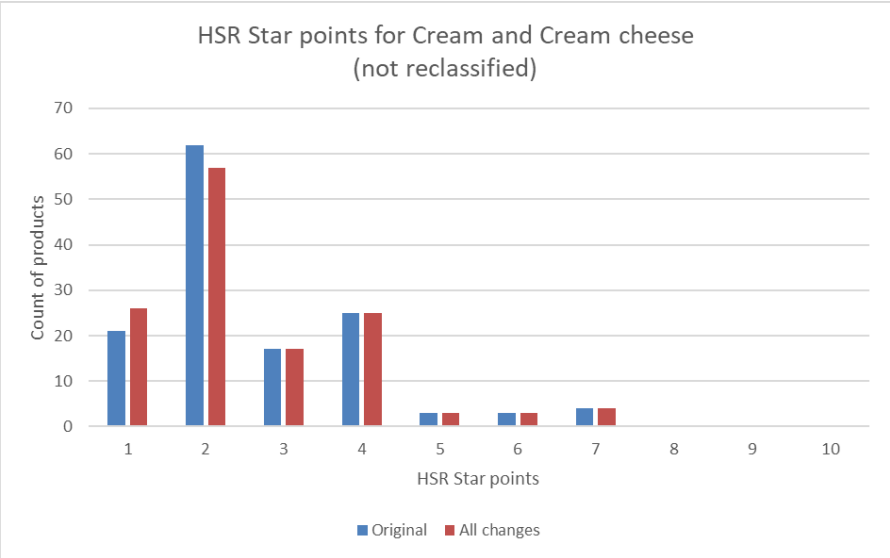

Figure 14 *Distribution of HSR star points for the Original HSR calculator for AGHE Categories Cream and Cream cheese in the TAG Database and following implementation of all recommended HSR calculator changes except reclassification of Cream and Cream cheese*

4.2.2 Original HSR calculator compared with all recommended changes except dairy (Dairy Scenario 2)

In Dairy Scenario 2, removing all recommended changes relating to reclassification and rescaling dairy products from the updated calculator results in only small changes for all dairy food categories, relating the impact of recommended changes to the total sugars and sodium HSR baseline points tables only. For AGHE category Yoghurt and soft cheeses (Figure 15), 56 products (13%) were impacted by proposed changes to the total sugars HSR baseline points table as all affected products had <900 sodium mg/100 g. All affected products had a reduction of 0.5 stars.

Similarly for AGHE category Custards/desserts (Figure 16), 5 products (6%) were affected by a 0.5 star reduction.

No Cream products were impacted as a result of Dairy Scenario 2, and only 5 Cream cheese products (7%) were impacted by a reduction of 0.5 stars (Figure 17). The reduction in HSR for cream cheese products was as a result of the recommended changes to the total sugars HSR baseline points tables as all product had a sodium concentration of <900 mg/100 g.

Additional modelling indicate that the option of not reclassifying and rescaling HSR Categories 2D and 3D (Dairy Scenario 2) resulted in a much smaller overall impact for dairy foods in the TAG database, with changes limited to foods affected by the recommendation to amend the total sugars HSR baseline points tables. No Category 2D dairy foods were affected by the recommended amendments to the sodium HSR baseline points table.

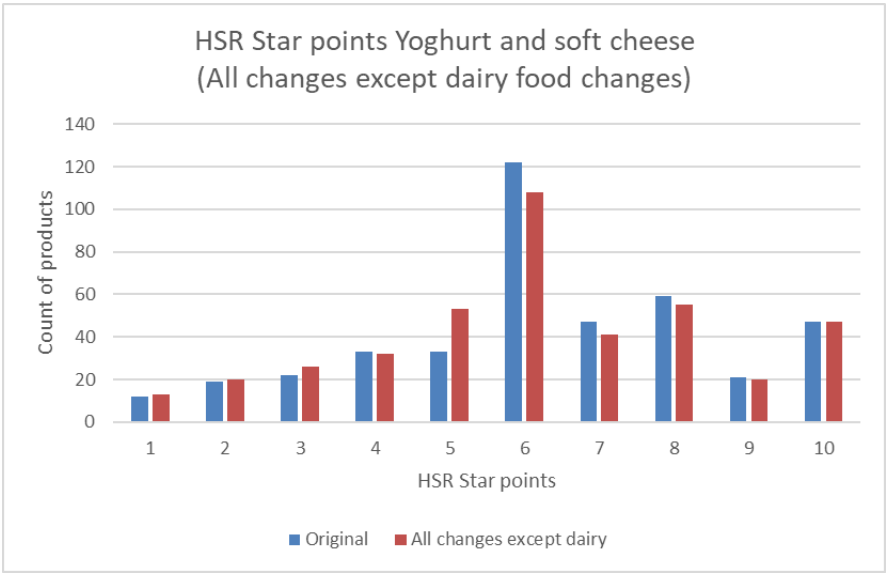

Figure 15 *Distribution of HSR star points for the Original HSR calculator for AGHE Category Yoghurt and soft cheese in the TAG Database, and following implementation of all recommended HSR calculator changes except dairy (HSR Categories 2D, 3D)*

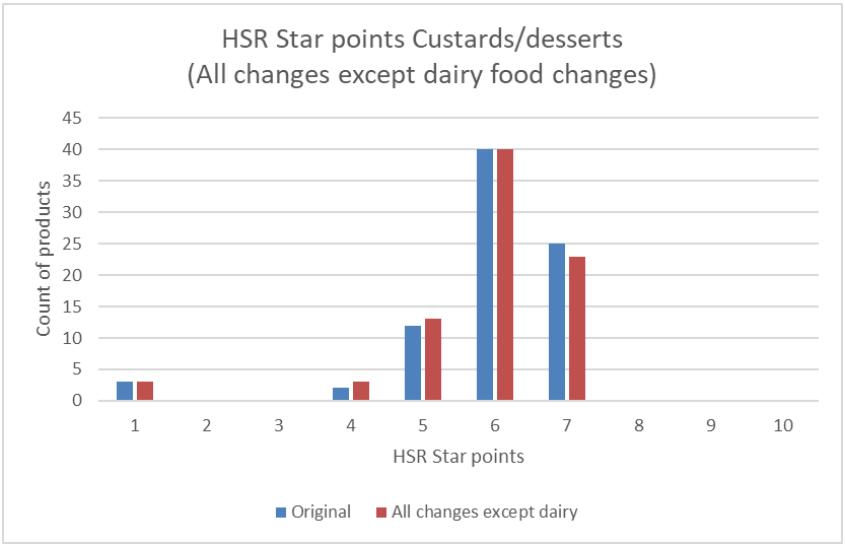

Figure 16 *Distribution of HSR star points for the Original HSR calculator for AGHE Category Custards/desserts in the TAG Database, and following implementation of all recommended HSR calculator changes except dairy (HSR Categories 2D, 3D)*

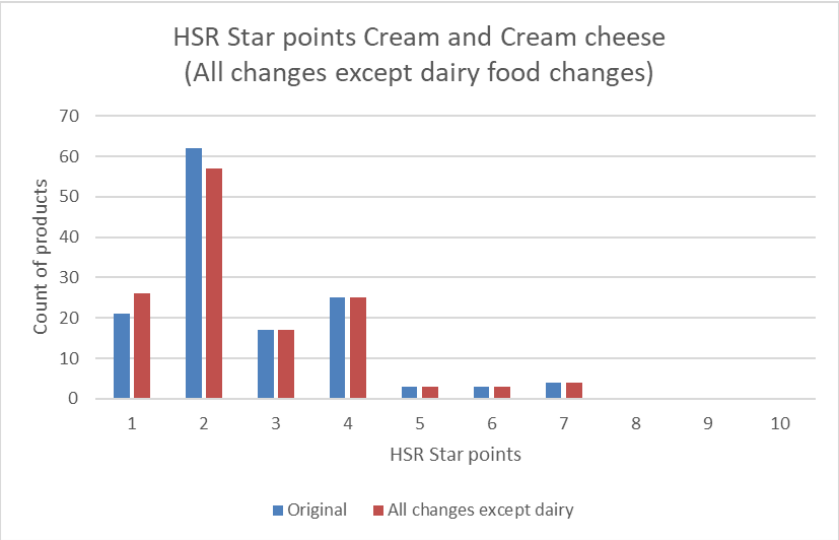

Figure 17 Distribution of HSR star points for the Original HSR calculator for AGHE Category Cream and Cream cheese in the TAG Database, and following implementation of all recommended HSR calculator changes except dairy (HSR Categories 2D, 3D)

The option investigated relating to not implementing the recommended reclassification and rescaling of dairy foods categories (Dairy Scenario 2) had minimal effects and did not result in better alignment with dietary guidelines compared to the Recommended HSR calculator.

5. Conclusion

Overall, modelling cited in mpconsulting's final Review Report was found to be robust and accurate. Where small differences were identified, these could be attributed to slight differences in the underlying assumptions made about the data in the TAG database in the modelling process.

The implementation of all changes (Recommended HSR calculator) resulted in more FFG flagged foods with higher HSRs and more discretionary flagged foods with lower HSRs in the TAG database, broadly indicating that the recommended changes to the Original HSR calculator would result in a better alignment with dietary guidelines and improved discernment within broad food categories for FFG and discretionary flagged foods.

The impact of adopting all recommended changes to the HSR calculator recommended by the HSR System Five Year Review resulted in approximately 22% of TAG database products being affected by increased (14%) or decreased (8%) HSRs. Reclassification, rescaling and using new calculation methods (non-dairy beverages, ice confectionery and jelly) had a greater impact 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.

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 were otherwise receiving lower stars (4-4.5) in the Original calculator generally due to their relatively higher total sugars concentrations.

Rescaling of HSR Category 3D cheeses and clarification of definitions resulted in an increase of 0.5 stars for almost 70% of relevant TAG database products, impacting regular and reduced fat hard ripened and processed style cheeses as well as camembert, brie and other surface ripened cheeses.

Rescaling and reclassification of other HSR Category 2D dairy foods including Yoghurts and soft cheeses, Custards/desserts, Cream and Cream cheese resulted in a reduction in HSRs for Cream and Cream cheese products, although these were already scoring relatively low HSRs. Yoghurts and soft cheeses were impacted by increases in HSR while Custards/desserts were impacted by a mixture of increased and decreased HSRs giving a better spread of HSRs across this AGHE category compared to the nutritionally similar Yoghurts and soft cheeses overall providing better alignment with dietary guidelines.

Additional options investigated relating to classification and rescaling of dairy-based products resulted in minimal effects for the Cream and cream cheese products (with and without a reclassification to HSR Category 2); excluding the recommended reclassification and rescaling for dairy products in HSR Categories 2D and 3D did not result in better alignment with dietary guidelines compared to the Recommended HSR calculator.

Implementing the Nutri-Score System to calculate HSRs for HSR Category 1 non-dairy beverages and recategorisation of ice confectionary and jelly as Category 1 non-dairy beverages resulted in all products in this category receiving lower scores, including fruit juices.

Appendix 1 TAG database

Table 6 Summary counts and descriptions for each AGHE category in the TAG database

AGHE Categories	No. of Products	% of Total Products	Types of products included
HSR Category 1: Beverages - non-dairy			
Cordial	6	0.10	Sugar sweetened cordials
Carbonated beverages	26	0.44	Sugar sweetened soft drinks
Dry beverage mixes	3	0.05	Hot chocolate, coffee sachets
Flavoured water	9	0.15	Flavoured mineral water
Ice confectionery	46	0.78	Sorbet, icy poles and other frozen ice products
Jelly	20	0.34	Sugar sweetened jelly
Lifestyle drinks	4	0.07	Energy drinks
Other juices	69	1.17	Fruit drinks
Water	6	0.10	Unflavoured packaged still water
Whole juices	240	4.08	Fruit and fruit and vegetable juices
HSR Category 1D: Beverages - dairy			
Dairy beverages	485	8.24	Plain and flavoured dairy milks (includes regular, reduced fat, skim and fortified products)
Dairy beverage dry mixes	2	0.03	Dairy milk powder
Dairy alternative beverages	64	1.09	Plain and flavoured soy, rice, oat, almond and coconut milk (includes regular and reduced fat, sweetened and unsweetened, fortified and unfortified products)
HSR Category 2: Other Foods			
Bread	226	3.84	Bread and bread rolls (including white, wholemeal, rye, mixed seeds and grains, low carb, gluten free, added fibre), wraps, muffins
Breakfast cereal	300	5.10	Ready to eat breakfast cereals and porridge
Pasta/flour/grains	185	3.14	Rice and other grains, pasta, noodles and flours (including gluten free options)
Meats/fish	328	5.57	Fresh and frozen chicken, meat (beef, lamb, pork, kangaroo, and fish/seafood including crumbed/coated processed products, canned fish, processed meat
Nuts	76	1.29	Nuts and nut pastes
Plant protein	104	1.77	Baked beans, meat substitutes, legumes and lentils
Processed fruit	124	2.11	Canned/packaged, frozen, dried & pre-cut fruit, jam & fruit pastes

AGHE Categories	No. of Products	% of Total Products	Types of products included
Unprocessed fruit	33	0.56	Fresh fruit
Processed vegetables	299	5.08	Canned/packaged, frozen, dried & pre-cut vegetables, salads, antipasto, pickled/fermented vegetables
Unprocessed vegetables	62	1.05	Fresh vegetables
Bakery/cake mixes	122	2.07	Crumpets, pancakes, pastry, puddings, cakes and muffins, pavlovas, pies, doughnuts, garlic bread
Biscuits	258	4.38	Sweet and savoury biscuits
Confectionery	94	1.60	Chocolate and sugar based confectionery
Dips	28	0.48	Cream, cheese, yoghurt and nut based dips
Dressings	95	1.61	Mayonnaise, aioli and salad dressings (including regular, reduced fat and fat free)
Ice cream	179	3.04	Dairy and non-dairy plain and flavoured ice creams (including tub and individual stick/cone varieties)
Meals/meal bases	292	4.96	Canned spaghetti, frozen & shelf stable meals, casserole/curry/stir-fry bases
Miscellaneous	25	0.42	Salt, pepper, herbs, spices, condensed milk
Pizza	3	0.05	Frozen pizza
Sauces/condiments	344	5.85	Gravy, sauce, marinades, pasta sauce, tomato paste, salsa (includes regular and reduced salt products)
Snacks	310	5.27	Cheese and crackers, muesli bars, breakfast cereal bars, chips, extruded snacks, ice cream cones, popcorn, tuna based snack packs
Soups/stocks	245	4.16	Dried, condensed and ready to eat soups and liquid stocks (includes low salt varieties)
Yeast spread	4	0.07	Regular and reduced salt yeast based spreads
HSR Category 2D: Dairy foods			
Cream	68	1.16	Cream and sour cream (regular and reduced fat & lactose free)
Cream cheese	67	1.14	Plain and flavoured cream cheese (regular, reduced fat and spreadable)
Custards/desserts	82	1.39	Custard, creamed rice, crème caramel, mousse, panna cotta and other dairy desserts
Yoghurt, soft cheese (Ca <320 mg)	415	7.05	Greek, natural and flavoured dairy yoghurts (including regular, low fat and intense sweetened, added fibre), non-dairy (coconut) and lactose free yoghurts, ricotta and cottage cheese (regular and reduced fat).
HSR Category 3: Fats, oils & oil based spreads			
Fats & oils	94	1.60	Oils & butter, dairy blend and margarine spreads (including reduced fat and sodium options)
HSR Category 3D: Cheese			
Cheese	443	7.53	Plain, flavoured and smoked natural cheddar cheese, processed cheddar cheese, fetta, parmesan, mozzarella, edam, colby, swiss, gouda, blue, gruyere, harvarti, brie, camembert, goats and cheese spreads
TOTAL	**5885**		

Table 7 Summary of baseline and modifying component content in each AGHE category in the TAG database

	Energy (kJ/100 g)		Protein (g/100 g)		Saturated fat (g/100 g)		Total sugars (g/100 g)		Sodium (mg/100 g)		Fibre (g/100 g)	
AGHE Categories	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**
HSR Category 1: Beverages - non-dairy												
Cordial	152	114 - 218	0.2	0 - 1	0.2	0 - 1	8.4	6.5 - 12.6	4	1 - 8	N/A	N/A
Carbonated beverages	188	124 - 236	0.0	0 - 0	0	0 - 0	11.0	7.3 - 13.9	7	2 - 11	N/A	N/A
Dry beverage mixes	657	144 - 1640	2.7	1.1 - 5.4	0.7	0.2 - 1.3	28.8	3.8 - 77.1	105	65 - 160	N/A	N/A
Flavoured water	147	64 - 182	0.0	0 - 0.1	0.0	0 - 0	8.4	3.3 - 10.5	8	2 - 12	N/A	N/A
Ice confectionery	298	165 - 525	0.2	0 - 1.3	0.1	0 - 2.5	16.2	9.7 - 26.6	9	0 - 20	N/A	N/A
Jelly	265	230 - 393	1.0	1 - 1.1	0.0	0 - 0	14.6	13.1 - 22.1	37	27 - 78	N/A	N/A
Lifestyle drinks	217	194 - 284	1.1	0 - 4.4	0.1	0 - 0.5	10.8	8.8 - 11.4	40	32 - 64	N/A	N/A
Other juices	193	129 - 1450	0.3	0 - 0.9	0.0	0 - 0.1	10.6	7.4 - 56	8	1 - 17	N/A	N/A
Water	0	0 - 0	0.0	0 - 0	0.0	0 - 0	0.0	0 - 0	0	0 - 0	N/A	N/A
Whole juices	175	85 - 430	0.5	0 - 1	0.0	0 - 0.1	8.9	1.4 - 20.9	16	1 - 295	N/A	N/A
HSR Category 1D: Beverages - dairy												
Dairy beverages	259	130 - 670	3.4	0.6 - 8	1.3	0 - 6.2	7.0	1.8 - 17.3	47	14 - 125	0.1	0 - 1.8
Dairy beverage dry mixes	150	148 - 151	3.5	3.4 - 3.5	0.1	0.1 - 0.1	5.4	5.3 - 5.5	39	33 - 45	0.0	0 - 0
Dairy alternative beverages	192	69 - 298	1.9	0.15 - 4.2	0.5	0.1 - 2.2	3.1	0 - 7.4	50	22 - 90	0.5	0 - 1.8
HSR Category 2: Foods												
Bread	1047	691 - 1620	9.2	3.4 - 15.8	0.7	0 - 4.4	2.7	0.1 - 20.8	437	205 - 798	5.0	1.8 - 10.8
Breakfast cereal	1576	490 - 2130	10.1	3.1 - 21.9	1.3	0 - 8.4	16.9	0 - 41.3	176	0 - 710	9.2	0 - 40
Pasta/flour/grains	949	260 - 1561	6.2	0.3 - 22.2	0.9	0 - 6	1.2	0 - 7.5	130	0 - 795	2.9	0 - 45.4
Meats/fish	632	187 - 2016	18.5	5 - 31.9	1.6	0 - 14.8	1.1	0 - 9.5	482	22 - 7895	0.3	0 - 3.7
Nuts	2525	680 - 3080	19.4	2.4 - 30.3	8.2	0.1 - 57.7	7.7	2.1 - 57.2	170	0.9 - 680	6.5	0 - 15.4
Plant protein	524	104 - 1310	9.7	1.6 - 24.4	0.7	0 - 10	2.1	0 - 7.4	336	1 - 1050	5.1	0.6 - 11.9
Processed fruit	661	85 - 1530	1.0	0 - 8.5	0.2	0 - 2	29.8	4 - 72	28	0 - 700	2.8	0 - 13.9
Unprocessed fruit	206	100 - 385	0.8	0.3 - 1.4	0.0	0 - 0.1	9.1	1.8 - 16.2	2	0 - 17	2.2	0.6 - 6.1
Processed vegetables	289	39 - 1410	2.3	0 - 8.2	0.4	0 - 6.8	3.3	0 - 40	242	0 - 3500	2.8	0 - 14.7
Unprocessed vegetables	149	40 - 855	2.0	0.4 - 6.1	0.1	0 - 5.1	2.5	0.3 - 7.7	21	1 - 212	3.0	0.5 - 16.9

	Energy (kJ/100 g)		Protein (g/100 g)		Saturated fat (g/100 g)		Total sugars (g/100 g)		Sodium (mg/100 g)		Fibre (g/100 g)	
AGHE Categories	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**	**Range**
Bakery/cake mixes	1275	439 - 1942	5.9	2 - 20.2	4.5	0 - 16.3	20.9	0.1 - 89.8	402	30 - 1360	1.6	0 - 4.5
Biscuits	1903	1418 - 2330	7.3	2.8 - 14.4	7.0	0.1 - 22.8	19.1	0.1 - 52.5	487	5 - 1620	3.4	0 - 14.4
Confectionery	1801	1335 - 2410	4.5	0 - 16.5	8.4	0 - 29.8	56.8	27.9 - 93.4	85	4 - 1020	0.8	0 - 10.8
Dips	912	256 - 2180	5.3	2.8 - 10.7	5.7	0.3 - 12.6	5.1	0.3 - 10.5	383	182 - 665	0.7	0 - 2
Dressings	1200	180 - 3163	0.7	0 - 2.5	3.1	0 - 10	12.6	1.1 - 27.2	807	23 - 1700	0.0	0 - 0.8
Ice cream	974	328 - 1596	3.7	0.1 - 7	7.2	0.1 - 18.6	21.8	7.9 - 34.3	70	0.9 - 230	0.3	0 - 6.3
Meals/meal bases	588	140 - 1802	7.0	0.5 - 24.4	1.3	0 - 10.7	4.0	0 - 41.6	757	57 - 9600	0.9	0 - 8.3
Miscellaneous	870	0 - 2660	5.1	0 - 20.5	4.0	0 - 33.1	22.6	0 - 72.1	9410	5 - 39259	1.4	0 - 26.2
Pizza	1185	1030 - 1400	12.0	9.1 - 13.9	4.6	3 - 5.7	2.1	0.9 - 2.9	603	525 - 743	2.6	2.3 - 3.3
Sauces/condiments	427	96 - 2430	2.0	0 - 13.7	0.9	0 - 22	10.3	0.1 - 63.4	905	5 - 29000	0.9	0 - 19.1
Snacks	1792	176 - 2650	9.4	1 - 39.4	5.8	0 - 22	15.6	0.1 - 73.9	387	1 - 2700	5.1	0 - 26.1
Soups/stocks	168	15 - 349	1.4	0.1 - 7.4	0.5	0 - 3.1	1.8	0 - 8.8	297	17 - 627	0.5	0 - 3.5
Yeast spread	801	690 - 950	23.6	17.4 - 26	0.9	0.4 - 1	4.8	2 - 11.2	3110	2380 - 3450	8.6	7.8 - 9.3
HSR Category 2D: Dairy foods												
Cream	1169	150 - 2140	2.5	1 - 6	19.5	2 - 36.8	3.7	0.9 - 8.6	53	10 - 290	0.0	0 - 0.2
Cream cheese	1211	548 - 1910	7.8	1.7 - 19.6	16.7	3.2 - 34.7	6.2	1.9 - 16.3	446	19 - 1630	0.1	0 - 1
Custards/desserts	543	256 - 1590	3.7	0.1 - 13.4	2.5	0 - 8.3	15.9	4.64 - 68.6	100	25 - 1240	0.1	0 - 3.05
Yoghurt, soft cheese (Ca <320 mg)	404	155 - 1250	5.0	1.2 - 26.1	2.2	0.07 - 17.9	10.0	0 - 20.9	69	15.6 - 527	0.3	0 - 3.2
HSR Category 3: Fats, oils & oil based spreads												
Fats & oils	2616	711 - 3713	0.6	0 - 24	26.7	4.2 - 93	0.6	0 - 2.6	306	0 - 876	0.0	0 - 0
HSR Category 3D: Cheese												
Cheese	1493	502 - 2030	23.0	11.6 - 43.3	18.7	1 - 31.3	1.0	0 - 10.3	817	185 - 1950	0.0	0 - 0

Appendix 2 Modelling all recommended changes to Original HSR calculator using the Recommended calculator

Analysis by AGHE Category

Table 8 Effect of all recommended changes on HSR categories 1D, 2, 2D, 3 and 3D

AGHE Category	Count of Product	Count of affected products	% products affected	Count of products with increased HSR	% products with increased HSR	Count of products with decreased HSR	% products with decreased HSR	Original HSR Star Points			Recommended HSR Star Points		
								Average	Maximum	Minimum	Average	Maximum	Minimum
Core Cereals – bread	226	0	0	0	0	0	0	7.7	10	5	7.7	10	5
Core Cereals - breakfast	300	43	14	0	0	43	14	7.9	10	3	7.8	10	3
Core Cereals - pasta/flour/grains	185	0	0	0	0	0	0	7.3	10	4	7.3	10	4
Core Dairy alternative-beverages	64	0	0	0	0	0	0	8.3	10	6	8.3	10	6
Core Dairy - beverages	485	16	3	3	1	13	3	8	10	2	8	10	3
Core Dairy - beverages dry mix/milk powder	2	0	0	0	0	0	0	9	9	9	9	9	9
Core Dairy – cheese	443	304	69	304	69	0	0	5.4	10	1	6.1	10	1
Core Dairy - yoghurt, soft cheese	415	336	81	336	81	0	0	6.3	10	1	7.7	10	1
Dairy Non-core foods - cream	68	61	90	1	1	60	88	2.9	7	1	1.4	8	1
Dairy Non-core foods - cream cheese	67	50	75	3	4	47	70	2.4	7	1	1.3	8	1
Fats, oils & oil based spreads	94	0	0	0	0	0	0	4.7	10	1	4.7	10	1
Fruit – processed	124	23	19	1	1	22	18	6.5	10	3	6.4	10	3
Fruit – unprocessed	33	32	97	32	97	0	0	9	10	8	10	10	10
Non-core foods - bakery/cake mixes	122	14	11	0	0	14	11	4.1	8	1	4	8	1
Non-core foods - biscuits	258	17	7	0	0	17	7	3.6	9	1	3.5	9	1
Non-core foods - confectionery	94	26	28	0	0	26	28	2.2	4	1	1.9	4	1
Non-core foods - custard/desserts	82	55	67	36	44	19	23	5.9	7	1	6	9	1
Non-core foods – dips	28	0	0	0	0	0	0	5.2	8	3	5.2	8	3
Non-core foods - dressings	95	5	5	0	0	5	5	3.4	7	2	3.3	6	2
Non-core foods - ice confectionery	46	46	100	0	0	46	100	6.3	7	5	1	1	1

AGHE Category	Count of Product	Count of affected products	% products affected	Count of products with increased HSR	% products with increased HSR	Count of products with decreased HSR	% products with decreased HSR	Original HSR Star Points			Recommended HSR Star Points		
								Average	Maximum	Minimum	Average	Maximum	Minimum
Non-core foods - ice cream	179	19	11	0	0	19	11	4.3	7	1	4.2	7	1
Non-core foods – jelly	20	20	100	0	0	20	100	6.6	7	6	1	1	1
Non-core foods - meals/meal bases	292	7	2	0	0	7	2	6.6	9	1	6.6	9	1
Non-core foods - miscellaneous	25	2	8	0	0	2	8	3.8	10	1	3.6	10	1
Non-core foods - pizza	3	0	0	0	0	0	0	4.7	6	4	4.7	6	4
Non-core foods - sauces/condiments	344	25	7	0	0	25	7	5.5	10	1	5.4	10	1
Non-core foods - snacks	310	28	9	0	0	28	9	4.9	10	1	4.9	10	1
Non-core foods - soups/stocks	245	0	0	0	0	0	0	6.6	8	6	6.6	8	6
Non-core foods - yeast spread	4	4	100	0	0	4	100	3.8	5	3	2	3	1
Protein - meats/fish	328	17	5	0	0	17	5	7.3	10	1	7.3	10	1
Protein – nuts	76	1	1	0	0	1	1	7.9	10	1	7.9	10	1
Protein – plant	104	0	0	0	0	0	0	8.8	10	5	8.8	10	5
Vegetables - processed	299	55	18	45	15	10	3	8.5	10	3	8.6	10	1
Vegetables - unprocessed	62	30	48	30	48	0	0	9.5	10	8	10	10	10
Total	**5522**	**1236**	**22**	**791**	**14**	**445**	**8**	**6.3**	**10**	**1**	**5.7**	**10**	**1**

Notes: - updated HSRs for ice confectionery and jelly derived using new non-dairy beverage calculator for HSR Category 1
Blue shading – no changes to any HSRs as a result of recommended changes to HSR calculator
Green shading – increases in HSRs only as a result of recommended changes to the HSR calculator

Table 9 Effect of all recommended changes on HSR Category 1 Non-dairy beverages

AGHE Category	Count of Product	Count of affected products	% products affected	count of products with increased HSR	% products with increased HSR	count of products with decreased HSR	% products with decreased HSR	Original HSR calculator HSR Star Points			Recommended HSR calculator HSR Star Points		
								Average	Maximum	Minimum	Average	Maximum	Minimum
flavoured water	9	8	89	1	11	7	78	2.9	5	2	2	6	1
Fruit - other juices	69	62	90	0	0	62	90	2.4	3	1	1.1	2	1
Fruit - whole juices	240	235	98	2	1	233	97	9.2	10	3	5.6	8	1
Non-core foods - beverage dry mixes	3	2	67	0	0	2	67	2.7	4	1	2	3	1
Non-core foods - carbonated beverages	26	24	92	0	0	24	92	2	3	1	1.1	2	1
Non-core foods - cordial	6	5	83	1	17	4	67	2.7	3	2	2	4	1
Non-core foods - lifestyle	4	4	100	0	0	4	100	2.8	5	2	1	1	1
Total	**357**	**340**	**95**	**4**	**1**	**336**	**94**	**6.9**	**10**	**1**	**4.2**	**8**	**1**

Table 10 Change in HSR star points for AGHE categories affected by implementing the Recommended HSR calculator, for HSR Categories 1D, 2, 2D, 3 and 3D

AGHE Category	Count of Product	Count of affected products	% products affected	Count of products with increased HSR	% products with increased HSR	count of products with decreased HSR	% products with decreased HSR	-6	-5	-4	-3	-2	-1	1	2	3	4
Core Cereals - bread	226	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Core Cereals - breakfast	300	43	15	0	0	44	15	0	0	0	2	7	34	0	0	0	0
Core Cereals - pasta/flour/grains	185	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Core Dairy alternative-beverages	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Core Dairy - beverages	485	16	3	3	1	13	3	0	0	0	0	0	13	2	0	1	0
Core Dairy - beverages dry mix/milk powder	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Core Dairy - cheese	443	304	69	304	69	0	0	0	0	0	0	0	0	304	0	0	0
Core Dairy - yoghurt, soft cheese	415	336	81	336	81	0	0	0	0	0	0	0	0	131	160	39	6
Dairy Non-core foods - cream	68	61	90	1	1	60	88	0	0	0	14	10	36	1	0	0	0
Dairy Non-core foods - cream cheese	67	50	75	3	4	47	70	0	0	0	11	9	27	3	0	0	0
Fats, oils & oil based spreads	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Fruit - processed	124	23	19	1	1	22	18	0	0	0	0	0	22	1	0	0	0
Fruit - unprocessed	33	32	97	32	97	0	0	0	0	0	0	0	0	30	2	0	0
Non-core foods - bakery/cake mixes	122	14	11	0	0	14	11	0	0	0	0	0	14	0	0	0	0
Non-core foods - biscuits	258	17	7	0	0	17	7	0	0	0	0	0	17	0	0	0	0
Non-core foods - confectionery	94	26	29	0	0	27	29	0	0	0	0	0	26	0	0	0	0
Non-core foods - custard/deserts	82	55	67	36	44	19	23	0	0	1	3	4	11	31	5	0	0
Non-core foods - dips	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-core foods - dressings	95	5	5	0	0	5	5	0	0	0	0	0	5	0	0	0	0

AGHE Category	Count of Product	Count of affected products	% products affected	Count of products with increased HSR	% products with increased HSR	count of products with decreased HSR	% products with decreased HSR	-6	-5	-4	-3	-2	-1	1	2	3	4
Non-core foods - ice confectionery	46	46	100	0	0	46	100	14	31	1	0	0	0	0	0	0	0
Non-core foods - ice cream	179	19	11	0	0	19	11	0	0	0	0	0	19	0	0	0	0
Non-core foods - jelly	20	20	100	0	0	20	100	11	9	0	0	0	0	0	0	0	0
Non-core foods - meals/meal bases	292	7	2	0	0	7	2	0	0	0	0	0	7	0	0	0	0
Non-core foods - miscellaneous	25	2	8	0	0	2	8	0	0	0	0	1	1	0	0	0	0
Non-core foods - pizza	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-core foods - sauces/condiments	344	25	7	0	0	25	7	0	0	0	0	1	24	0	0	0	0
Non-core foods - snacks	310	28	9	0	0	28	9	0	0	0	0	0	28	0	0	0	0
Non-core foods - soups/stocks	245	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Non-core foods - yeast spread	4	4	100	0	0	4	100	0	0	0	0	3	1	0	0	0	0
Protein - meats/fish	328	17	5	0	0	17	5	0	0	0	0	3	14	0	0	0	0
Protein - nuts	76	1	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0
Protein - plant	104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vegetables - processed	299	55	18	45	15	10	3	0	0	0	0	1	9	36	9	0	0
Vegetables - unprocessed	62	30	48	30	48	0	0	0	0	0	0	0	0	29	1	0	0
Total	**5522**	**1238**	**22**	**791**	**14**	**447**	**8**	**25**	**40**	**2**	**30**	**39**	**309**	**568**	**177**	**40**	**6**

Note: - updated HSRs for ice confectionery and jelly derived using new non-dairy beverage calculator for HSR Category 1

Table 11 Change in HSR star points for AGHE categories affected by implementing the Recommended HSR calculator, for HSR Category 1 Non-dairy beverages

AGHE Category	Count of products	Count of affected products	Proportion of affected products	Count of products with increased HSR	% products with increased HSR	Count of products with decreased HSR	% products with decreased HSR	-6	-5	-4	-3	-2	-1	1	2
flavoured water	9	8	89	1	11	7	78	0	0	0	0	2	5	1	0
Fruit - other juices	69	62	90	0	0	62	90	0	0	0	0	23	39	0	0
Fruit - whole juices	240	235	98	2	1	233	97	3	49	83	75	20	3	1	1
Non-core foods - beverage dry mixes	3	2	67	0	0	2	67	0	0	0	0	0	2	0	0
Non-core foods - carbonated beverages	26	24	92	0	0	24	92	0	0	0	0	0	24	0	0
Non-core foods - cordial	6	5	83	1	17	4	67	0	0	0	0	1	3	1	0
Non-core foods - lifestyle	4	4	100	0	0	4	100	0	0	1	0	0	3	0	0
Total	**357**	**340**	**95**	**4**	**1**	**336**	**94**	**3**	**49**	**84**	**75**	**46**	**79**	**3**	**1**

Analysis by FFG and Discretionary food flags

Table 12 Effect of Recommended HSR calculator on HSR categories1D, 2, 2D, 3 and 3D by AGHE category and FFG and Discretionary food flag

	All	Five Food Group (FFG)						Discretionary					
AGHE Category	Count of products	Count	% of all products	Count with increased HSR	% total FFG with increased HSR	Count with decreased HSR	% of total FFG with decreased HSR	Count	% of all products	Count with increased HSR	% total Discretionary with increased HSR	Count with decreased HSR	% of total Discretionary with decreased HSR
Core Cereals - bread	226	217	96	0	0	0	0	9	4	0	0	0	0
Core Cereals - breakfast	300	275	92	0	0	34	12	25	8	0	0	9	36
Core Cereals - pasta/flour/grains	185	185	100	0	0	0	0	0	0	0	0	0	0
Core Dairy alternative-beverages	64	64	100	0	0	0	0	0	0	0	0	0	0
Core Dairy - beverages	485	461	95	3	1	13	3	24	5	0	0	0	0
Core Dairy - beverages dry mix/milk powder	2	2	100	0	0	0	0	0	0	0	0	0	0
Core Dairy - cheese	443	443	100	304	69	0	0	0	0	0	0	0	0
Core Dairy - yoghurt, soft cheese	415	412	99	333	81	0	0	3	1	3	100	0	0
Dairy Non-core foods - cream	68	4	6	0	0	4	100	64	94	1	2	56	88
Dairy Non-core foods - cream cheese	67	67	100	3	4	47	70	0	0	0	0	0	0
Fats, oils & oil based spreads	94	48	51	0	0	0	0	46	49	0	0	0	0
Fruit - processed	124	94	76	1	1	11	12	30	24	0	0	11	37
Fruit - unprocessed	33	33	100	32	97	0	0	0	0	0	0	0	0
Non-core foods - bakery/cake mixes	122	13	11	0	0	2	15	109	89	0	0	12	11
Non-core foods - biscuits	258	70	27	0	0	1	1	188	73	0	0	16	9
Non-core foods - confectionery	94	0	0	0	0	0	0	94	100	0	0	26	28
Non-core foods - custard/desserts	82	33	40	20	61	6	18	49	60	16	33	13	27
Non-core foods - dips	28	0	0	0	0	0	0	28	100	0	0	0	0
Non-core foods - dressings	95	4	4	0	0	1	25	91	96	0	0	4	4
Non-core foods - ice confectionery	46	0	0	0	0	0	0	46	100	0	0	46	100
Non-core foods - ice cream	179	0	0	0	0	0	0	179	100	0	0	19	11
Non-core foods - jelly	20	1	5	0	0	1	100	19	95	0	0	19	100
Non-core foods - meals/meal bases	292	171	59	0	0	3	2	121	41	0	0	4	3

	All	Five Food Group (FFG)						Discretionary					
AGHE Category	Count of products	Count	% of all products	Count with increased HSR	% total FFG with increased HSR	Count with decreased HSR	% of total FFG with decreased HSR	Count	% of all products	Count with increased HSR	% total Discretionary with increased HSR	Count with decreased HSR	% of total Discretionary with decreased HSR
Non-core foods - miscellaneous	25	13	52	0	0	1	8	12	48	0	0	1	8
Non-core foods - pizza	3	1	33	0	0	0	0	2	67	0	0	0	0
Non-core foods - sauces/condiments	344	11	3	0	0	0	0	333	97	0	0	25	8
Non-core foods - snacks	310	34	11	0	0	1	3	276	89	0	0	27	10
Non-core foods - soups/stocks	245	136	56	0	0	0	0	109	44	0	0	0	0
Non-core foods - yeast spread	4	0	0	0	0	0	0	4	100	0	0	4	100
Protein - meats/fish	328	221	67	0	0	1	0	107	33	0	0	16	15
Protein - nuts	76	74	97	0	0	1	1	2	3	0	0	0	0
Protein - plant	104	104	100	0	0	0	0	0	0	0	0	0	0
Vegetables - processed	299	224	75	44	20	4	2	75	25	1	1	6	8
Vegetables - unprocessed	62	62	100	30	48	0	0	0	0	0	0	0	0
Total	**5522**	**3477**	**63**	**770**	**22**	**131**	**4**	**2045**	**37**	**21**	**1**	**314**	**15**

Note: - updated HSRs for ice confectionery and jelly derived using new non-dairy beverage calculator

Table 13 Count of products at each HSR for HSR category 1D, 2, 2D, 3 and 3D, by FFG and Discretionary food flags

	Original HSR calculator			Recommended HSR calculator		
HSR rating	FFG	Discretionary	Total	FFG	Discretionary	Total
0.5	49	198	247	95	356	451
1	83	205	288	22	173	195
1.5	87	269	356	49	292	341
2	168	285	453	98	229	327
2.5	185	225	410	212	215	427
3	418	386	804	297	327	624
3.5	691	246	937	757	212	969
4	899	202	1101	931	213	1144
4.5	477	21	498	469	20	489
5	420	8	428	547	8	555
Total	**3477**	**2045**	**5522**	**3477**	**2045**	**5522**

Note: includes ice confectionery and jelly

Table 14 Effect of Recommended changes on HSR category 1 Non-dairy beverages, by AGHE category and FFG and Discretionary food flags

	All	Five Food Group (FFG)						Discretionary					
AGHE Category	**Count of products**	**Count of FFG**	**% of All**	**count increased HSR**	**Proportion of total FFG increased**	**count of FFG with decreased HSR**	**Proportion of total FFG decreased**	**Count of Discretionary**	**% of All**	**count increased HSR**	**Proportion of total discretionary increased**	**count decreased HSR**	**Proportion of total discretionary decreased**
flavoured water	9	2	22	1	50	0	0	7	78	0	0	7	100
Fruit - other juices	69	0	0	0	0	0	0	69	100	0	0	62	90
Fruit - whole juices	240	240	100	2	1	233	97	0	0	0	0	0	0
Non-core foods - beverage dry mixes	3	1	33	0	0	0	0	2	67	0	0	2	100
Non-core foods - carbonated beverages	26	0	0	0	0	0	0	26	100	0	0	24	92
Non-core foods - cordial	6	0	0	0	0	0	0	6	100	1	17	4	67
Non-core foods - lifestyle	4	1	25	0	0	1	100	3	75	0	0	3	100
Total	**357**	**244**	**68**	**3**	**1**	**234**	**96**	**113**	**32**	**1**	**1**	**102**	**90**

Note: excludes ice confectionery and jelly

Table 15 Count of products at each HSR for HSR category 1 Non-dairy beverages, by FFG and Discretionary food flags

	Original HSR calculator			Recommended HSR calculator		
HSR	**FFG**	**Discretionary**	**Total**	**FFG**	**Discretionary**	**Total**
0.5	1	5	6	3	96	99
1	0	69	69	1	14	15
1.5	1	38	39	1	2	3
2	0	1	1	16	1	17
2.5	5	0	5	107	0	107
3	2	0	2	88	0	88
3.5	2	0	2	4	0	4
4	64	0	64	24	0	24
4.5	39	0	39	0	0	0
5	130	0	130	0	0	0
Total	**244**	**113**	**357**	**244**	**113**	**357**

Note: excludes ice confectionery and jelly

Analysis by 5-digit classification

Table 16 Summary of AHS 5-digit food classifications affected by implementation of the Recommended HSR calculator, by AGHE 'Core' categories

AGHE category	5-digit name	Count of products	Count of affected products *(Discretionary food flag)*	Proportion of affected products (%)	Difference in HSR star points between Original and Recommended HSR calculators						
					-3	-2	-1	1	2	3	4
Breakfast cereals	Breakfast cereal, rice based, fortified	16	5 *(4)*	31	0	0	5	0	0	0	0
	Breakfast cereal, wheat based, fortified, sugars >20 g/100g	1	1	100	0	0	1	0	0	0	0
	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	31	6	19	0	1	5	0	0	0	0
	Breakfast cereal, mixed grain, fortified, sugars ≤20 g/100g	11	2	18	0	0	2	0	0	0	0
	Breakfast cereal, mixed grain, fortified, sugars >20 g/100g	20	7 *(1)*	35	2	1	4	0	0	0	0
	Breakfast cereal, mixed grain, with fruit and/or nuts	58	4	7	0	2	2	0	0	0	0
	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	39	14	36	0	3	11	0	0	0	0
	Muesli and cereal style bars, no fruit	1	1 *(1)*	100	0	0	1	0	0	0	0
	Muesli and cereal style bars, with fruit and/or nuts	5	1 *(1)*	20	0	0	1	0	0	0	0
	Muesli bar, with fruit or fruit paste filling	3	2 *(2)*	67	0	0	2	0	0	0	0
Dairy beverages	Unfortified beverage flavourings prepared with water or milk	10	1	10	0	0	1	0	0	0	0
	Milk, evaporated or condensed, undiluted	3	3	100	0	0	0	2	0	1	0
	Milk, coffee/chocolate flavoured and milk-based drinks, full fat	133	8	6	0	0	8	0	0	0	0
	Milk, other flavoured and milk-based drinks, full fat	57	4	7	0	0	4	0	0	0	0
Cheese	Cheese, hard cheese ripened styles	290	193	67	0	0	0	193	0	0	0
	Cheese, hard cheese ripened styles, reduced fat	21	16	76	0	0	0	16	0	0	0
	Cheese, unripened styles, including cream and cottage cheese, regular fat	3	2	67	0	0	0	2	0	0	0
	Cheese, camembert, brie and other surface ripened cheeses	70	58	83	0	0	0	58	0	0	0
	Cheese, processed	40	23	58	0	0	0	23	0	0	0
	Cheese, processed, reduced fat	16	10	63	0	0	0	10	0	0	0
	Cheese, not further defined	3	2	67	0	0	0	2	0	0	0
Yoghurt, soft cheese	Other beverages	3	3 *(3)*	100	0	0	0	0	3	0	0
	Yoghurt, natural, regular fat and high fat (>4 g/100g fat)	24	24	100	0	0	0	3	11	9	1
	Yoghurt, natural, reduced fat	28	16	57	0	0	0	16	0	0	0

AGHE category	5-digit name	Count of products	Count of affected products *(Discretionary food flag)*	Proportion of affected products (%)	Difference in HSR star points between Original and Recommended HSR calculators						
					-3	-2	-1	1	2	3	4
	Yoghurt, flavoured or added fruit and/or cereal, high fat (>4 g/100g fat)	71	71	100	0	0	0	3	37	26	5
	Yoghurt, flavoured or added fruit, full fat	102	98	96	0	0	0	40	57	1	0
	Yoghurt, flavoured or added fruit, reduced fat	93	84	90	0	0	0	59	25	0	0
	Yoghurt, added nutrients or other substances	38	27	71	0	0	0	2	25	0	0
	Cheese, unripened styles, including cream and cottage cheese, regular fat	18	8	44	0	0	0	3	2	3	0
	Cheese, unripened styles, including cream and cottage cheese, reduced fat	11	5	45	0	0	0	5	0	0	0
Processed fruit	Berry fruit	1	1	100	0	0	0	1	0	0	0
	Berry fruit, commercially sterile	6	1	17	0	0	1	0	0	0	0
	Tropical and subtropical fruit, commercially sterile	17	1	6	0	0	1	0	0	0	0
	Dried vine fruit	5	1	20	0	0	1	0	0	0	0
	Other dried fruit including mixed dried fruit	19	8	42	0	0	8	0	0	0	0
	Jams and conserves, sugar sweetened	20	11 *(11)*	55	0	0	11	0	0	0	0
Unprocessed fruit	Apples	3	3	100	0	0	0	3	0	0	0
	Pears	1	1	100	0	0	0	1	0	0	0
	Berry fruit	5	4	80	0	0	0	4	0	0	0
	Oranges	2	2	100	0	0	0	2	0	0	0
	Lemons and limes	1	1	100	0	0	0	1	0	0	0
	Other citrus fruit	2	2	100	0	0	0	2	0	0	0
	Peaches and nectarines	3	3	100	0	0	0	3	0	0	0
	Other stone fruit	3	3	100	0	0	0	3	0	0	0
	Pineapples	2	2	100	0	0	0	1	1	0	0
	Other tropical and subtropical fruit, inedible peel	5	5	100	0	0	0	4	1	0	0
	Other fruit	6	6	100	0	0	0	6	0	0	0
Meats/fish	Chicken	11	1	9	0	0	1	0	0	0	0
	Bacon	4	2 *(2)*	50	0	0	2	0	0	0	0
	Ham	29	11 *(11)*	38	0	2	9	0	0	0	0
	Processed delicatessen meat, mammalian	9	2 *(2)*	22	0	0	2	0	0	0	0
	Processed meat, commercially sterile (includes canned meats)	4	1 *(1)*	25	0	1	0	0	0	0	0
Nuts	Sweet spreads or sauces, chocolate/coffee flavoured	2	1	50	0	0	1	0	0	0	0
Processed vegetables	Fruit-based pickles, chutneys and relishes	2	1 *(1)*	50	0	1	0	0	0	0	0

AGHE category	5-digit name	Count of products	Count of affected products *(Discretionary food flag)*	Proportion of affected products (%)	Difference in HSR star points between Original and Recommended HSR calculators						
					-3	-2	-1	1	2	3	4
	Vegetable-based pickles, chutneys and relishes	25	5 *(5)*	20	0	0	5	0	0	0	0
	Potatoes	1	1 *(1)*	100	0	0	0	1	0	0	0
	Carrots	5	3	60	0	0	0	3	0	0	0
	Other root vegetables	10	2	20	0	0	1	1	0	0	0
	Leaf vegetables	41	22	54	0	0	0	21	1	0	0
	Stalk vegetables	9	1	11	0	0	1	0	0	0	0
	Beans	6	1	17	0	0	0	1	0	0	0
	Tomato products	22	1	5	0	0	1	0	0	0	0
	Sweetcorn	18	5	28	0	0	0	1	4	0	0
	Other fruiting vegetables	3	1	33	0	0	1	0	0	0	0
	Onion, leek and garlic	4	1	25	0	0	0	1	0	0	0
	Mixtures of two or more vegetables	59	9	15	0	0	0	7	2	0	0
	Salads, vegetable based	14	2	14	0	0	0	0	2	0	0
Unprocessed vegetables	Potatoes	2	1	50	0	0	0	1	0	0	0
	Cabbage and similar brassica vegetables	5	1	20	0	0	0	1	0	0	0
	Carrots	3	1	33	0	0	0	1	0	0	0
	Other root vegetables	6	2	33	0	0	0	2	0	0	0
	Leaf vegetables	8	6	75	0	0	0	6	0	0	0
	Stalk vegetables	3	1	33	0	0	0	1	0	0	0
	Tomato	4	4	100	0	0	0	4	0	0	0
	Pumpkin	2	2	100	0	0	0	2	0	0	0
	Squash and zucchini	2	2	100	0	0	0	2	0	0	0
	Sweetcorn	1	1	100	0	0	0	1	0	0	0
	Other fruiting vegetables	8	7	88	0	0	0	6	1	0	0
	Other vegetables	1	1	100	0	0	0	1	0	0	0
	Onion, leek and garlic	5	1	20	0	0	0	1	0	0	0
Total		**1648**	**857 *(46)***	**52**	**2**	**11**	**93**	**533**	**172**	**40**	**6**

Table 17 Summary of AHS 5-digit food classifications affected by implementation of Recommended HSR calculator by AGHE 'Non-core' categories

AGHE category	5-digit name	Count of products	Count of affected products *(FFG food flag)*	Proportion of affected products (%)	Difference in HSR star points between Original and Recommended HSR calculators					
					-4	-3	-2	-1	1	2
Cream	Cream, regular and increased fat	33	29	88	0	0	3	26	0	0
	Cream, reduced fat	8	6	75	0	3	3	0	0	0
	Cream, sour	11	11	100	0	1	1	9	0	0
	Cream, sour, reduced fat	12	11	92	0	9	0	1	1	0
	Cheese, unripened styles, including cream and cottage cheese, regular fat	3	3 *(3)*	100	0	0	3	0	0	0
	Cheese, unripened styles, including cream and cottage cheese, reduced fat	1	1 *(1)*	100	0	1	0	0	0	0
Cream cheese	Cheese, hard cheese ripened styles	1	1 *(1)*	100	0	0	0	1	0	0
	Cheese, unripened styles, including cream and cottage cheese, regular fat	46	33 *(33)*	72	0	3	4	26	0	0
	Cheese, unripened styles, including cream and cottage cheese, reduced fat	16	16 *(16)*	100	0	8	5	0	3	0
Bakery/cake mixes	Sweet breads, buns and scrolls, iced and/or filled	3	1	33	0	0	0	1	0	0
	Cakes and cake mixes, chocolate	9	1	11	0	0	0	1	0	0
	Cakes and cake mixes, other types	14	1	7	0	0	0	1	0	0
	Muffins, cake type, and muffin mixes	5	2	40	0	0	0	2	0	0
	Pancakes, crepes and dishes	6	1 *(1)*	17	0	0	0	1	0	0
	Drop scones, pikelets	2	1 *(1)*	50	0	0	0	1	0	0
	Sugar-based desserts	7	7	100	0	0	0	7	0	0
Biscuits	Sweet biscuits, plain or flavoured including short bread varieties	32	2	6	0	0	0	2	0	0
	Sweet biscuits, plain with fruit or nuts	9	3	33	0	0	0	3	0	0
	Sweet biscuits, chocolate-coated, chocolate chip	39	9	23	0	0	0	9	0	0
	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	39	1 (1)	3	0	0	0	1	0	0
	Savoury biscuits, wheat based, plain, energy >1800 kJ per 100 g	60	2	3	0	0	0	2	0	0
Confectionery	Chocolate (plain, unfilled varieties)	19	1	5	0	0	0	1	0	0
	Chocolate-based confectionery with nut fillings or additions	9	1	11	0	0	0	1	0	0
	Chocolate-based confectionery with other fillings or additions	20	2	10	0	0	0	2	0	0
	Fruit bar and fruit-based confectionery	1	1	100	0	0	0	1	0	0
	Lollies and other confectionery, sugar sweetened	40	20	50	0	0	0	20	0	0
	Other confectionery	1	1	100	0	0	0	1	0	0

AGHE category	5-digit name	Count of products	Count of affected products *(FFG food flag)*	Proportion of affected products (%)	Difference in HSR star points between Original and Recommended HSR calculators					
					-4	-3	-2	-1	1	2
Custard/desserts	Cereal flours and starches	3	2 *(2)*	67	0	0	0	0	2	0
	Yoghurt, flavoured or added fruit and/or cereal, high fat (>4 g/100g fat)	2	1 *(1)*	50	0	0	0	1	0	0
	Frozen dairy desserts, other	1	1 *(1)*	100	1	0	0	0	0	0
	Custard, fat content ≥ 4 g/100 g	2	1 *(1)*	50	0	0	0	1	0	0
	Custard, fat content <4 g/100 g	25	21 *(21)*	84	0	0	0	3	14	4
	Dairy desserts, smooth or gelatin-based dairy desserts	47	27	57	0	3	4	4	15	1
	Other milk, cheese or cream-based desserts	2	2	100	0	0	0	2	0	0
Dressings	Mayonnaise and cream-style dressings, full fat	40	2	5	0	0	0	2	0	0
	Mayonnaise and cream-style dressings, reduced or non-fat	22	2	9	0	0	0	2	0	0
	Vinegar	4	1 *(1)*	25	0	0	0	1	0	0
Ice cream	Ice cream, tub varieties, fat content >10 g/100 g	55	8	15	0	0	0	8	0	0
	Ice cream, tub varieties, fat content 4 - 10 g/100 g	31	4	13	0	0	0	4	0	0
	Ice cream, tub varieties, fat content <4 g/100 g	27	1	4	0	0	0	1	0	0
	Ice cream, individual bar, stick and cone varieties, fat content >10 g/100 g	37	4	11	0	0	0	4	0	0
	Ice cream, individual bar, stick and cone varieties, fat content 4 - 10 g/100 g	14	1	7	0	0	0	1	0	0
	Soy-based ice confection	6	1	17	0	0	0	1	0	0
Meals/meal bases	Savoury pasta/noodle and sauce dishes, saturated fat ≤5 g/100 g	70	3 *(3)*	4	0	0	0	3	0	0
	Dry savoury sauces and casserole bases and dry mixes	79	4	5	0	0	0	4	0	0
Miscellaneous foods	Sweet biscuits, plain or flavoured including short bread varieties	1	1	100	0	0	0	1	0	0
	Milk, evaporated or condensed, undiluted	6	1 *(1)*	17	0	0	1	0	0	0
Sauces/condiments	Savoury sauces, not tomato based, commercial	107	15	14	0	0	0	15	0	0
	Savoury sauces, tomato based, commercial	89	3	3	0	0	0	3	0	0
	Savoury pastes	5	1	20	0	0	0	1	0	0
	Stock cubes and seasonings	17	6	35	0	0	1	5	0	0
Snacks	Sweet biscuits, chocolate-coated, chocolate or cream filled	2	1	50	0	0	0	1	0	0
	Dried meats	3	1	33	0	0	0	1	0	0
	Peanut products	9	1 *(1)*	11	0	0	0	1	0	0
	Other snacks	37	1	3	0	0	0	1	0	0

AGHE category	5-digit name	Count of products	Count of affected products *(FFG food flag)*	Proportion of affected products (%)	Difference in HSR star points between Original and Recommended HSR calculators					
					-4	-3	-2	-1	1	2
	Fruit bar and fruit-based confectionery	11	7	64	0	0	0	7	0	0
	Muesli and cereal style bars, no fruit	20	2	10	0	0	0	2	0	0
	Muesli and cereal style bars, with fruit and/or nuts	40	8	20	0	0	0	8	0	0
	Muesli and cereal style bars, added coatings or confectionery	54	5	9	0	0	0	5	0	0
	Muesli bar, with fruit or fruit paste filling	11	1	9	0	0	0	1	0	0
	Snack bar, other	4	1	25	0	0	0	1	0	0
Yeast spread	Yeast extracts	4	4	100	0	0	3	1	0	0
Total		**1333**	**313 *(89)***	**23**	**1**	**28**	**28**	**216**	**35**	**5**

Table 18 Summary of Jelly and Ice confection AHS 5-digit food classifications affected by implementation of Recommended HSR calculator, by AGHE non-core categories

AGHE category	5-digit name	Count of products *(FFG food flag)*	Count of affected products	Proportion of affected products (%)	Difference in HSR star points between Original and Recommended HSR calculators		
					-6	-5	-4
Ice confectionery	Water ice confection, gelato, sorbet	46	46	100	14	31	1
Jelly	Citrus fruit, commercially sterile	1	1 *(1)*	100	0	1	0
	Sugar-based desserts	19	19	100	11	8	0
Total		**66**	**66 *(1)***	**100**	**25**	**40**	**1**

Notes: - updated HSRs for ice confectionery and jelly derived using new non-dairy beverage calculator

Table 19 Summary of AHS 5-digit food classifications affected by implementation of the Recommended HSR calculator for AGHE Non-dairy beverages categories

AGHE category	5-digit name	Count of products	Count of affected products *(FFG food flag)*	Proportion of affected products (%)	Difference in HSR star points between 'Original' and 'Recommended'							
					-6	-5	-4	-3	-2	-1	1	2
Flavoured water	Flavoured mineral waters	7	7	100	0	0	0	0	2	5	0	0
	Purchased packaged water including mineral water	2	1 (1)	50	0	0	0	0	0	0	1	0
Other juices	Fruit drinks (ready to drink or made from concentrate)	64	57	89	0	0	0	0	23	34	0	0
	Fruit drink, prepared from dry powder	5	5	100	0	0	0	0	0	5	0	0
Whole juices	Fruit juices, commercially prepared	188	185 *(185)*	98	3	38	64	68	10	1	0	1
	Fruit juices, fortified	10	10 *(10)*	100	0	4	2	4	0	0	0	0
	Fruit and vegetable juice blends	42	40 *(40)*	95	0	7	17	3	10	2	1	0
Beverage dry mixes	Unfortified beverage flavourings prepared with water or milk	2	2	100	0	0	0	0	0	2	0	0
Carbonated beverages	Soft drinks, non-cola	15	13	87	0	0	0	0	0	13	0	0
	Soft drinks, cola	6	6	100	0	0	0	0	0	6	0	0
	Flavoured mineral waters	5	5	100	0	0	0	0	0	5	0	0
Cordial	Cordial concentrate	6	5	83	0	0	0	0	1	3	1	0
Lifestyle drinks	Energy drinks	3	3	100	0	0	0	0	0	3	0	0
	Milk, coffee/chocolate flavoured and milk-based drinks, reduced fat	1	1 *(1)*	100	0	0	1	0	0	0	0	0
Total		**356**	**340 *(237)***	**96**	**3**	**49**	**84**	**75**	**46**	**79**	**3**	**1**

Appendix 3 Modelling of reclassification and rescaling of dairy categories

Analysis by AGHE Category

Table 20 Summary of dairy options: Effect of implementing the Recommended HSR calculator, and Dairy scenarios for impacted AGHE dairy-based food categories only and total HSR categories (excluding HSR Category 1)

AGHE Category	Count of Products	Count of products impacted	% products impacted	Count of products with increased HSR	% products with increased HSR	Count of products with decreased HSR	% products with decreased HSR	Original HSR Calculator Star Points			Recommended or Scenario HSR calculator Star Points		
								Average	Maximum	Minimum	Average	Maximum	Minimum
Cheese													
Recommended HSR calculator	443	304	69	304	69	0	0	5.4	10	1	6.1	10	1
Except Cream/Cream cheese (Dairy Scenario 1)	443	304	69	304	69	0	0	5.4	10	1	6.1	10	1
Except dairy recommendations (Dairy Scenario 2)	443	0	0	0	0	0	0	5.4	10	1	5.4	10	1
Yoghurt, soft cheese													
Recommended HSR calculator	415	336	81	336	81	0	0	6.3	10	1	7.7	10	1
Except Cream/Cream cheese (Dairy Scenario 1)	415	336	81	336	81	0	0	6.3	10	1	7.7	10	1
Except dairy recommendations (Dairy Scenario 2)	415	56	13	0	0	56	13	6.3	10	1	6.1	10	1
Cream													
Recommended HSR calculator	68	61	90	1	1	60	88	2.9	7	1	1.4	8	1
Except Cream/Cream cheese (Dairy Scenario 1)	68	0	0	0	0	0	0	2.9	7	1	2.9	7	1
Except dairy recommendations (Dairy Scenario 2)	68	0	0	0	0	0	0	2.9	7	1	2.9	7	1
Cream cheese													
Recommended HSR calculator	67	50	75	3	4	47	70	2.4	7	1	1.3	8	1
Except Cream/Cream cheese (Dairy Scenario 1)	67	5	7	0	0	5	7	2.4	7	1	2.4	7	1
Except dairy recommendations (Dairy Scenario 2)	67	5	7	0	0	5	7	2.4	7	1	2.4	7	1
Custard/desserts													
Recommended HSR calculator	82	55	67	36	44	19	23	5.9	7	1	6	9	1
Except Cream/Cream cheese (Dairy Scenario 1)	82	55	67	36	44	19	23	5.9	7	1	6	9	1
Except dairy recommendations (Dairy Scenario 2)	82	5	6	0	0	5	6	5.9	7	1	5.9	7	1
Total products	**5522**	**1238**	**22**	**791**	**14**	**447**	**8**	**6.3**	**10**	**1**	**5.7**	**10**	**1**

AGHE Category	Count of Products	Count of products impacted	% products impacted	Count of products with increased HSR	% products with increased HSR	Count of products with decreased HSR	% products with decreased HSR	Original HSR Calculator Star Points			Recommended or Scenario HSR calculator Star Points		
								Average	Maximum	Minimum	Average	Maximum	Minimum
Recommended HSR calculator (HSR Categories 1D, 2, 2D, 3, 3D)													
Except Cream/Cream cheese (Dairy Scenario 1)	**5522**	**1132**	**20**	**787**	**14**	**345**	**6**	**6.3**	**10**	**1**	**5.7**	**10**	**1**
Except dairy recommendations (Dairy Scenario 2)	**5522**	**495**	**9**	**108**	**2**	**387**	**7**	**6.3**	**10**	**1**	**5.7**	**10**	**1**

Analysis by FFG and Discretionary Flag

Table 21 Summary of dairy options: Effect of implementing the Recommended HSR calculator, and Dairy scenarios for impacted AGHE dairy-based food categories only and total HSR categories (excluding HSR Category 1) by FFG and discretionary flag

	All	Five Food Group (FFG)						Discretionary					
AGHE Category	**Count of products**	**Count of FFG**	**% of all products**	**count increased HSR**	**% total FFG increased**	**count decreased HSR**	**% total FFG decreased**	**Count**	**% of all products**	**count increased HSR**	**% total discretionary increased**	**count decreased HSR**	**% total discretionary decreased**
Cheese Recommended HSR calculator	443	443	100	304	69	0	0	0	0	0	0	0	0
Except Cream/Cream cheese (Dairy Scenario 1)	443	443	100	304	69	0	0	0	0	0	0	0	0
Except dairy recommendations (Dairy Scenario 2)	443	443	100	0	0	0	0	0	0	0	0	0	0
Yoghurt, soft cheese – Recommended HSR calculator	415	412	99	333	81	0	0	3	1	3	100	0	0
Except Cream/Cream cheese (Dairy Scenario 1)	415	412	99	333	81	0	0	3	1	3	100	0	0
Except dairy recommendations (Dairy Scenario 2)	415	412	99	0	0	56	14	3	1	0	0	0	0
Cream Recommended HSR calculator	68	4	6	0	0	4	100	64	94	1	2	56	88
Except Cream/Cream cheese (Dairy Scenario 1)	68	4	6	0	0	0	0	64	94	0	0	0	0
Except dairy recommendations (Dairy Scenario 2)	68	4	6	0	0	0	0	64	94	0	0	0	0
Cream cheese Recommended HSR calculator	67	67	100	3	4	47	70	0	0	0	0	0	0
Except Cream/Cream cheese (Dairy Scenario 1)	67	67	100	0	0	5	7	0	0	0	0	0	0
Except dairy recommendations (Dairy Scenario 2)	67	67	100	0	0	5	7	0	0	0	0	0	0
Custard/desserts – Recommended HSR calculator	82	33	40	20	61	6	18	49	60	16	33	13	27
Except Cream/Cream cheese (Dairy Scenario 1)	82	33	40	20	61	6	18	49	60	16	33	13	27
Except dairy recommendations (Dairy Scenario 2)	82	33	40	0	0	2	6	49	60	0	0	3	6
Total products – Recommended HSR	**5522**	**3477**	**63**	**770**	**22**	**132**	**4**	**2045**	**37**	**21**	**1**	**315**	**15**

	All	Five Food Group (FFG)						Discretionary					
AGHE Category	Count of products	Count of FFG	% of all products	count increased HSR	% total FFG increased	count decreased HSR	% total FFG decreased	Count	% of all products	count increased HSR	% total discretionary increased	count decreased HSR	% total discretionary decreased
calculator (HSR Categories 1D, 2, 2D, 3, 3D)													
Except Cream/Cream cheese (Dairy Scenario 1)	**5522**	**3477**	**63**	**767**	**22**	**86**	**2**	**2045**	**37**	**20**	**0**	**259**	**13**
Except dairy recommendations (Dairy Scenario 2)	**5522**	**3477**	**63**	**107**	**3**	**138**	**4**	**2045**	**37**	**1**	**0**	**249**	**12**

Table 22 Count of products at each HSR by FFG and Discretionary food flag, for the Original HSR calculator, and for 'Recommended' and 'Recommended except dairy' changes

	Original			Recommended			Recommended excluding dairy		
HSR	FFG	Discretionary	Total	FFG	Discretionary	Total	FFG	Discretionary	Total
0.5	49	198	247	95	356	451	58	301	359
1	83	205	288	22	173	195	81	207	288
1.5	87	269	356	49	292	341	89	291	380
2	168	285	453	98	229	327	170	241	411
2.5	185	225	410	212	215	427	216	223	439
3	418	386	804	297	327	624	403	337	740
3.5	691	246	937	757	212	969	705	220	925
4	899	202	1101	931	213	1144	850	198	1048
4.5	477	21	498	469	20	489	377	19	396
5	420	8	428	547	8	555	527	8	535
Total	**3477**	**2045**	**5522**	**3477**	**2045**	**5522**	**3477**	**2045**	**5522**

Appendix 4 Glossary and Definition of Terms

Table 23 Simple naming of Australian Guide to Healthy Eating (AGHE) categories

HSR Category	Simple HSR name	Simple AGHE name	TAG Database name
1	Non-dairy beverages	Carbonated beverages	Non-core foods - carbonated beverages
		Cordials	Non-core foods - cordial
		Dry beverage mixes	Non-core foods - beverage dry mixes
		Flavoured waters	flavoured water
		Ice Confectionery	Non-core foods - ice confectionery
		Jelly	Non-core foods - jelly
		Lifestyle drinks	Non-core foods - lifestyle
		Other Juices	Fruit - whole juices
		Water	Water
		Whole juices	Fruit - other juices
1D	Dairy beverages	Dairy alternative beverages	Core Dairy alternative- beverages
		Dairy beverage dry mix	Core Dairy - beverages dry mix/milk powder
		Dairy beverages	Core Dairy - beverages
2	Foods	Breads	Core Cereals - bread
		Breakfast cereals	Core Cereals - breakfast
		Pasta/flour/grains	Core Cereals - pasta/flour/grains
		Cream	Dairy Non-core foods - cream
		Cream cheese	Dairy Non-core foods - cream cheese
		Processed fruit	Fruit - processed
		Unprocessed fruit	Fruit - unprocessed
		Bakery/cake mixes	Non-core foods - bakery/cake mixes
		Biscuits	Non-core foods - biscuits
		Confectionery	Non-core foods - confectionery
		Dips	Non-core foods - dips
		Dressings	Non-core foods - dressings
		Ice cream	Non-core foods - ice cream
		Meals/meal bases	Non-core foods - meals/meal bases
		Miscellaneous	Non-core foods - miscellaneous
		Pizza	Non-core foods - pizza
		Sauces/condiments	Non-core foods - sauces/condiments
		Snacks	Non-core foods - snacks
		Soups/stocks	Non-core foods - soups/stocks
		Yeast spread	Non-core foods - yeast spread
		Meat/fish	Protein - meats/fish
		Nuts	Protein - nuts
		Plant protein	Protein - plant
		Processed vegetables	Vegetables - processed
		Unprocessed vegetables	Vegetables - unprocessed
2D	Dairy foods	Custards/desserts	Non-core foods - custard/desserts
		Yoghurt, soft cheese	Core Dairy - yoghurt, soft cheese
3	Fats and oils	Fats & oils	Fats, oils & oil based spreads
3D	Cheeses	Cheeses	Core Dairy - cheese

Glossary and Definition of HSR System Terms

Term	Definition
AGHE	The Australian Guide to Healthy Eating, included in *Eat for Health: Australian Dietary Guidelines, NHMRC 2013*
As sold	The food as sold such that the food can be prepared with other food or consumed as sold.
As consumed	The food as consumed including foods that are required to be prepared according to directions prior to consumption.
Baseline points (in Schedule 5)	In Schedule 5, baseline points are calculated as part of the nutrient profiling score. Baseline points are allocated for the energy, saturated fatty acids, sugar and sodium present in foods and beverages, in accordance with Schedule 5.
The Code	Australia New Zealand Food Standards Code
Dairy foods (including dairy alternatives)	Milk and the cheeses and yoghurts produced from cow, goat, sheep and buffalo milk, including fermented milk products. Standard 2.5.1 defines compositional requirements for the minimum milk fat and protein content of cow's milk. Beverages made from milk that do not meet these compositional criteria are termed 'dairy beverages' in this user guide. For the purposes of the HSRC, milk and dairy beverage alternatives derived from legumes, cereals, nuts or seeds, and yoghurt and cheese alternatives derived from legumes, may be considered to belong to the dairy categories providing these food products meet the calcium content criteria specified in the HSRC for the relevant food category. Milk, dairy beverage, yoghurt and cheese alternatives not referred to above and not fortified with calcium and other nutrients are not considered a dairy food for the purposes of the HSRC.
FoPL	Front of Pack Labelling
Foundation Diets	Foundation Diets are referred to in the 2013 Australian Dietary Guidelines and AGHE with a selection of the diets being informed by current scientific evidence derived from the literature. The Foundation Diets were modelled to provide as close to 100% requirements for ten key nutrients as possible and to meet low (sedentary lifestyle) energy requirements.
fvnl	Defined in Schedule 5 to mean fruit, vegetables, nuts and legumes including coconut, spices, herbs, fungi, seeds and algae. Products score V points for the proportion of the food that is fvnl. See Step 4 of the Guide for Industry to the HSR Calculator for the rules relating to scoring these points, noting that the V points table has been expanded in the HSRC compared to the table in the NPSC.
General purpose foods	All foods except Special Purpose Foods in Part 2.9 of the Code. See Section 3.2 of the HSR Style Guide for foods that should not display the HSR system. Note: These foods are subject to the requirements for nutrition content claims and general level health claims set out in Standard 1.2.7 and Schedule 4 and Schedule 5.

Term	Definition
Special purpose foods	Part 2.9 of the Code regulates special purpose foods e.g. foods for infants. For the purposes of the HSR system formulated meal replacements and formulated supplementary foods standardised in Divisions 2 and 3 of Standard 2.9.3 may use the HSR System as category 1, 1D or 2, 2D foods. Note: Special purpose foods are not required to meet the NPSC if they carry health claims, because they have their own compositional requirements. The exception is infant formula products, which are not permitted to carry any claims.
HSR	Health Star Rating
HSR baseline points	Points allocated to baseline nutrients in the HSRC, where the points available to score individual nutrients are extended beyond the capped points available in the NPSC.
HSR F points	Category 2 and 3 food products score F points for the amount of dietary fibre present in the food. Category 1 and 1D foods do not score F points. Fibre points contribute to HSR modifying points, where the points available are extended beyond the capped points available for fibre in the NPSC.
HSR modifying points	Points allocated to modifying nutrients in the HSRC, where the points available to score individual nutrients are extended beyond the capped points available in the NPSC.
HSR P points	Food products score P points for the amount of protein present in the food. Protein points contribute to HSR modifying points, where the points available are extended beyond the capped points available for protein in the NPSC. Protein points can be scored if a food product scores less than 13 baseline points in the HSRC. A food product that scores more than or equal to 13 baseline points can only score protein points if the food scores 5 or more V points in the HSRC.
HSR V points	Products score V points for the proportion of their ingredients comprising of *fvnl* (fruits, vegetables, nuts and legumes including coconut, spices, herbs, fungi, seeds and algae). See Schedule 5 and Step 4 below for the rules relating to scoring these points, noting that the V points table has been expanded in the HSRC compared to the table in the NPSC.
HSRC	Health Star Rating Calculator
HSR System	New FoPL that combines a Health Star Rating, an energy icon and nutrition elements.
Modifying points (in Schedule 5)	In Schedule 5, modifying points are calculated as part of the nutrient profiling score. Modifying points are allocated for the %fvnl, and in some instances, the amount of protein and dietary fibre, present in foods and beverages, in accordance with Schedule 5.
NIP	Nutrition Information Panel found on most packages of food in Australia.
NPC	Nutrition Panel Calculator: a web-based tool on the FSANZ website based on NUTTAB that allows manufacturers to calculate values for their NIPs using their recipes and standard allowances for gains and losses in weight upon cooking.
NPSC	Nutrient Profiling Scoring Criterion, referred to in Standard 1.2.7 and detailed in Schedule 5.

Term	Definition
NUTTAB	The reference database for the composition of Australian foods. The most recent release in the series is NUTTAB 2010.
Product	Refers to food products.
Rating	Refers to the Health Star Rating for a food product.
Schedule 4 (in The Code)	Nutrition, Health and Related Claims
Schedule 5 (in The Code)	Nutrient Profiling Scoring Method
Score	Refers to Health Star Rating score for a food product, calculated by subtracting the HSR modifying points (HSR V, P and F points) from the HSR baseline points.
Standard 1.2.7 (in The Code)	Nutrition, Health and Related Claims
Standard 1.2.8 (in The Code)	Nutrition Information Requirements
Standard 1.2.10 (in The Code)	Characterising Ingredients and Components of Food
Standard 1.3.2 (in The Code)	Vitamins and Minerals
Standard 1.4.2 (in The Code)	Maximum Residue Limits (Australia Only)
Standard 2.4.1 (in The Code)	Edible Oils
Standard 2.4.2 (in The Code)	Edible Oil Spreads
Standard 2.5.1 (in The Code)	Milk
Standard 2.5.4 (in The Code)	Cheese
Standard 2.5.5 (in The Code)	Butter
Standard 2.6.1 (in The Code)	Fruit Juice and Vegetable Juice
Standard 2.9.1 (in The Code)	Infant Formula Products
Standard 2.9.2 (in The Code)	Foods for Infants
Standard 2.9.3 (in The Code)	Formulated Meal Replacements and Formulated Supplementary Foods
Standard 2.9.4 (in The Code)	Formulated Supplementary Sports Foods
Standard 2.9.5 (in The Code)	Foods for Special Medical Purposes
The Code	The Australia New Zealand Food Standards Code