Version 3
3 March 2015

Guide for industry to the Health Star Rating Calculator (HSRC)

Version	Location	Change	Date
2	Pg 19: last paragraph, ~~deleted~~ words	*Note: the rating of similar products may vary depending on the amount of added sugar ~~or fibre~~ and type of milk used.*	17 Sep 2014
3	Pg 1: Description of fvnl, **added** words	See Standard 1.2.7 **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 Standard 1.2.7 NPSC.	3 Mar 2015
3	Pg 2: Description of HSR V points, **added** words	See Standard 1.2.7 **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 Standard 1.2.7 NPSC.	3 Mar 2015
3	Description of HSR system, **added** words	New FoPL that combines a Health Star Rating**, an energy icon** and nutrition elements.	3 Mar 2015
3	Pg 7: Category 1D explanation - has been updated to clarify the intent	*Category 1D*: milk and dairy based beverages that have sufficient calcium to meet the requirements for a 10% source of calcium claim, as set out in Standard 1.2.7(i.e. ≥ >80 mg Calcium **per serving of the food, and for those foods permitted to be fortified in Standard 1.3.2, no more than the maximum claimable amount** per reference quantity of 200 mL. The reference quantity is defined in Standard 1.3.2 - Vitamins and Minerals).	3 Mar 2015
3	Pg 7: Paragraph 6/7	Paragraphs 6/7, beginning and finishing with *Mixed cheeses and other dairy products…..as Category 2 foods* has been moved to become paragraphs 8/9.	3 Mar 2015
3	Pg 7: Footnote **added**	**[2] In some cases the NIP information for the form of the food may be displayed per serve, whilst the information in the HSR label for the same form of the food, may be displayed per 100g. E.g. A condensed soup is intended to be prepared (and consumed) in accordance with specific directions. Information in the NIP and the HSR label should reflect the nutritional values in the prepared product. In the NIP, information is presented per serve and per 100g as sold and per serve as prepared. In the HSR system label, the information is presented per 100g as prepared.**	3 Mar 2015
3	Page 8: Paragraph 3 amended	Note Clause 11A of Standard 1.2.8 provides additional ~~nutrition information panel (~~NIP~~)~~ requirements where nutrient content is based on food ~~as prepared~~ **that is intended to be prepared or consumed with another food**.	3 Mar 2015
3	Pg 9: Table 1, column 2, line 13 amended	~~>3686~~ **>3685**	3 Mar 2015

Version	Location	Change	Date
3	Pg 12: An additional paragraph has been added (para 3) to reflect a decision of the HSR Advisory Committee	**There is an exclusion from the above exception when determining the V points for canned vegetable and legume products. In the case of canned vegetables and legumes, the percentage of *fvn*l in the product should be calculated based on the product as it would be consumed (i.e. drained) and not the product as sold.**	3 Mar 2015
3	Pg 12: Footnote **added**	**Column 1 only applies if a product contains concentrated fruit or vegetables. Nuts and legumes are specifically excluded from the definition of fruit and vegetables and should be scored under Column 2 in all forms (fresh, dried, roasted etc.).**	3 Mar 2015
3	Pg 11: 1st paragraph, **added** words	HSR Modifying Points may be scored for the amount of fruits, nuts, vegetables and legumes (*fvnl*[1]) in a food to a maximum of 8 points and in some cases, the amount of protein and dietary fibre in a food to a maximum of 15 points **for each**.	3 Mar 2015
3	Page 13: 2nd paragraph, ~~deleted~~ words	%non-concentrated fvnl/concentrated fruit or vegetables means the percentage of *fvnl* in the food determined using the appropriate calculation methods~~ outlined in Standard 1.2.10~~.	3 Mar 2015
3	Page 13: 4th paragraph, **added** words	Added words - Table 4 gives HSR protein and fibre points, a maximum of 15 points can be awarded **for each.**	3 Mar 2015
3	Various	Various typographical and grammatical errors amended for clarity and consistency.	3 Mar 2015

Legal Considerations and disclaimer

Use of the Health Star Rating (HSR) system and Health Star Rating Calculator (HSRC) does not mean food companies will comply with and does not otherwise negate any legal obligations imposed by the Australia New Zealand Food Standards Code (FSC) or other relevant legislation at Commonwealth or state or territory level. Food companies should ensure they are fully aware of the labelling requirements of the FSC and other legislation and seek legal advice.

This Guide and its provisions are intended as a guide only, to provide industry best practice and consistency in utilising the HSRC and meeting the relevant requirements of the FSC. Whilst every effort was made to ensure that the information was accurate and up to date at the time of its release, some information may become superseded over time.

The information in this Guide should not be relied upon as legal advice or used as a substitute for legal advice. Food companies need to apply their own skills and knowledge in determining compliance with the labelling requirements of the FSC. Food companies should consider obtaining independent legal advice, or undertaking appropriate training in labelling requirements.

Additional regulatory requirements relating to the Nutrition Information Panel may be triggered, such as a requirement to display a NIP on, or in association with, the food product. Food companies should specifically refer to *Standard 1.2.7 Nutrition, Health and Related Claims*, *Standard 1.2.8 Nutrition Information Requirements, Standard 1.3.2 Vitamins and Minerals* and *Standard 1.2.9 – Legibility Requirements* of the FSC. Other standards may also be relevant.

In using this Guide food companies acknowledge that neither the Commonwealth, its employees or agents are responsible for any action taken on the basis of information provided, or any errors or omissions, and expressly disclaim all liability in this regard, including any liability for any loss, injury or damage as a result of product being labelled according to this Guide.

Any brand representation in this Guide is for illustration purposes only.

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1. Glossary and Definition of 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 Standard 1.2.7)	In Standard 1.2.7, 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 of Standard 1.2.7.
Dairy foods (including dairy analogues)	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. Milk substitutes that are not fortified with calcium and other nutrients are not considered a dairy food for the purposes of the HSRC. To be considered a dairy food for the purposes of the HSRC, the food must meet the calcium content criteria specified in the HSRC for the relevant food category. For the purposes of the HSRC, milk, yoghurt and cheese analogues derived from legumes, beans and cereals (cereals apply to beverages only) may be considered to belong to the dairy food categories providing these food products meet the calcium content criteria specified in the HSRC for the relevant food category.
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 Standard 1.2.7 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 Standard 1.2.7 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 Standard 1.2.7 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, including the NPSC.

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 Standard 1.2.7 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 Standard 1.2.7 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 Standard 1.2.7 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 Standard 1.2.7 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 Standard 1.2.7 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 Standard 1.2.7 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 Standard 1.2.7)	In Standard 1.2.7, 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 of Standard 1.2.7.
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

Term	Definition
	1.2.7.
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.
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	Nutrition, Health and Related Claims
Standard 1.2.8	Nutrition Information Requirements
Standard 1.2.10	Characterising Ingredients and Components of Food
Standard 1.3.2	Vitamins and Minerals
Standard 1.4.2	Maximum Residue Limits (Australia Only)
Standard 2.4.1	Edible Oils
Standard 2.4.2	Edible Oil Spreads
Standard 2.5.1	Milk
Standard 2.5.4	Cheese
Standard 2.5.5	Butter
Standard 2.6.1	Fruit Juice and Vegetable Juice
Standard 2.9.1	Infant Formula Products
Standard 2.9.2	Foods for Infants
Standard 2.9.3	Formulated Meal Replacements and Formulated Supplementary Foods
Standard 2.9.4	Formulated Supplementary Sports Foods
Standard 2.9.5	Foods for Special Medical Purposes
The Code	The Australia New Zealand Food Standards Code

2. Introduction

The Health Star Rating Calculator (HSRC) was developed for use by industry to determine a rating for food and beverage products. The Health Star Rating (HSR) will be used in the new Health Star Rating system, as set out in the Health Star Rating System Style Guide (HSR Style Guide). The HSR system can be applied to all retail food and beverages, with the exception of specific food products (see HSR *Style Guide*, section 3.2).

The HSRC is based on the nutrient content and ingredient information used for the Nutrient Profiling Scoring Criterion (NPSC). The NPSC was developed by Food Standards Australia New Zealand (FSANZ) for the regulation of health claims in Australia and New Zealand and is prescribed in Standard 1.2.7 – Nutrition, Health and Related Claims of the Australia New Zealand Food Standards Code (the Code). The selection of nutrients and ingredients in the profiling system is based on the evidence base underpinning the 2013 Australian Dietary Guidelines.

For the HSRC this information is used in a different way to the NPSC, in order to profile foods based on nutrient content to generate a HSR score that is then assigned a star rating, as described below. Hence, the HSR score may not have the same numerical value as the NPSC score.

The NPSC was designed to determine the answer to a simple question for food manufacturers and retailers, that is, is the food eligible to carry a health claim or not? The NPSC is applied across the food supply generally. The HSR system is designed to assist consumers to discriminate between foods in the same food category and to compare foods across different food categories, with a possibility of 10 different star ratings able to be displayed for foods ranging from ½ star (least healthy) to 5 stars (most healthy).

The nutrient profiling system used in the HSRC is consistent with the 2013 Australian Dietary Guidelines in that foods low in saturated fat, total sugars, sodium and/or energy are assigned higher star ratings than similar foods with an appreciably higher content of these nutrients; foods with a high fibre content are assigned a higher star rating than similar foods with an appreciably lower fibre content.

The HSR system is **not** designed to give information on the quantity of each food to be consumed in a healthy diet; for this the Australian Guide to Healthy Eating should be referred to.

3. Purpose of this Guide

The purpose of this Guide is to outline the six steps required to determine a HSR score and assign a Rating to a food. This is intended as a guide for the health star element of the HSR system only. The Guide focuses on providing guidance to industry on determining the HSR and should be read in conjunction with the HSR *Style Guide* to provide additional information on the use of the HSR system.

4. How the HSRC works

The HSRC takes into account the four aspects of a food associated with increasing the risk factors for chronic diseases; energy, saturated fat, sodium and total sugars content of a food along with certain 'positive' aspects of a food such as fruit and vegetable content, and in some instances, dietary fibre and protein content. Taking these components into account, points are allocated based on the nutritional composition of 100 g or 100 mL, following the units used in the nutrition information panel (NIP) of a food.

'HSR baseline points' are first allocated for the energy, saturated fat, total sugars and sodium content of the food. 'HSR modifying points' can then be obtained for the percentage of the food that is fruits, vegetables, nuts and legumes including coconut, spices, herbs, fungi, seeds and algae (*fvnl*). These are known as 'HSR V' points. Some foods are able to score further modifying points for the protein and dietary fibre content in the food. These are known as 'protein' or 'HSR P' points and 'fibre' or 'HSR F' points respectively. A final HSR score is calculated by subtracting the HSR modifying points (V, P and F points) from the HSR baseline points. The HSR score is then assigned a star rating.

5. Steps to assess the HSR of a food

There are several steps that must be completed in order to obtain a Rating for your food using the HSRC. An outline of these steps is provided in the flowcharts in Appendices 1 and 2 and in the summary below.

In summary, a six step process is used:

Step 1: Determine the HSR category of the food

There are two major categories in the HSRC, i.e. non-dairy food and dairy foods with three categories under each of them, where specific criteria (e.g. calcium content of the food product) is used to determine if a food product is classified as a dairy food. The category of the food product determines which steps are to be followed to determine its HSR.

The six categories of foods in the HSRC are:

- Category 1 Beverages other than dairy beverages
- Category 1D Dairy beverages
- Category 2 All foods other than those included in Category 1, 1D, 2D, 3 or 3D
- Category 2D Dairy foods other than those included in Category 1D or 3D
- Category 3 Oils and spreads, defined as follows
  - edible oil as defined in Standard 2.4.1
  - edible oil spreads as defined in Standard 2.4.2
  - margarine as defined in Standard 2.4.2
  - butter as defined in Standard 2.5.5
- Category 3D Cheese and processed cheese as defined in Standard 2.5.4 (with calcium content >320 mg/100 g)

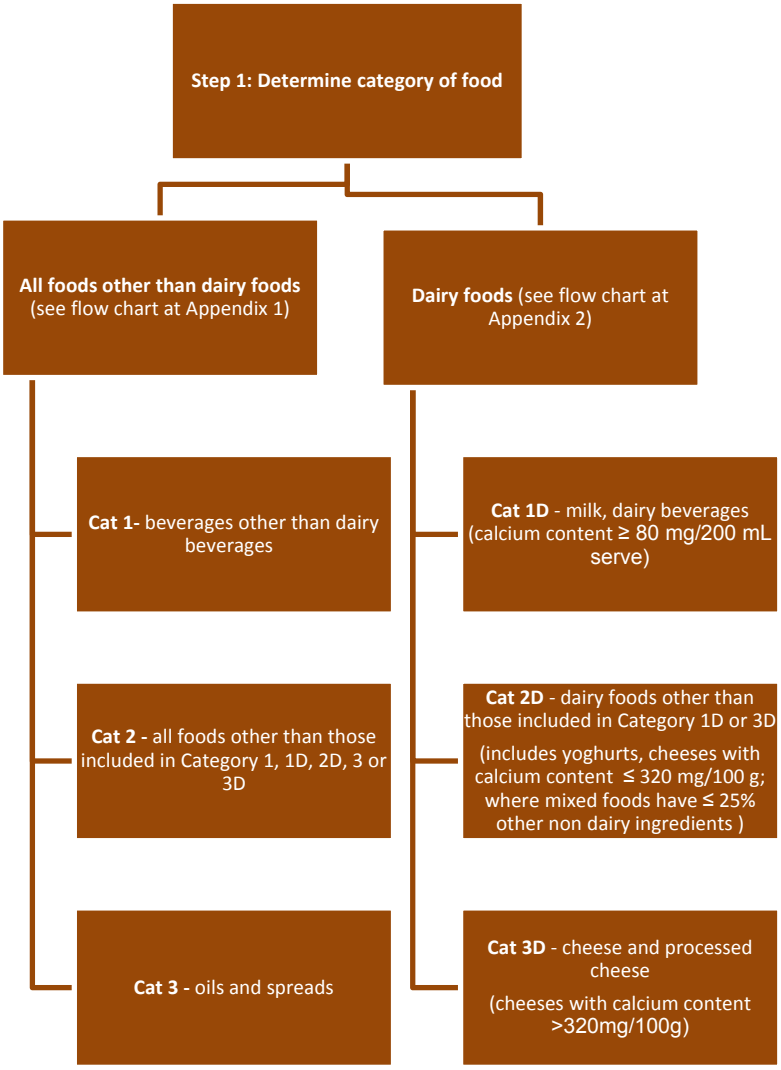

Figure 1 Categories of food products in the HSRC

Dairy (D) foods[1]

A dairy food is defined as a milk, dairy beverage, cheese or yoghurt produced from milk (from cow, goat, sheep or buffalo), including fermented milk products, that meets the relevant calcium criterion for dairy foods outlined below.

Milk, yoghurt and cheese analogues derived from legumes, beans or cereals (cereals apply to beverages only) may be considered in the dairy food categories (1D, 2D or 3D) for the purposes of assigning a HSR, providing they meet the relevant calcium criterion for dairy foods outlined below.

[1] Dairy foods (including milk/yoghurt/cheese analogues) are classified in separate categories 1D, 2D and 3D as the HSR score they achieve is treated slightly differently when assigned a star rating than Category 1, 2 or 3 foods. Dairy foods was the one food category with a very narrow range of HSR scores due to their derivation from a single food source (milk) and giving them a slightly wider range of star ratings allows for more informed consumer choice in this product range. The star ratings for dairy foods have been designed to support the Australian Dietary Guidelines which include dairy foods (no added sugar) in their Foundation Diets. For example, dairy products based on reduced fat milks are assigned a higher star rating than full fat milk counterparts and products with added sugar are assigned a lower star rating than those with no added sugar.

The definitions below are used to determine which category a dairy food or milk/yoghurt/cheese analogue belongs to (either food category 1D, 2D or 3D).

Category 1D: milk and dairy based beverages that have sufficient calcium to meet the requirements for a 10% source of calcium claim, as set out in Standard 1.2.7 (i.e. ≥ >80 mg Calcium per serving of the food, and for those foods permitted to be fortified in Standard 1.3.2, no more than the maximum claimable amount per reference quantity of 200 mL. The reference quantity is defined in Standard 1.3.2 - Vitamins and Minerals).

Category 1D may include dairy beverage analogues derived from legumes and cereals providing they meet the above criterion for calcium content.

Category 2D: all cheeses with a calcium content ≤ 320 mg/100 g, yoghurt and other fermented milk products.

Category 2D may include cheese and yoghurt analogues derived from legumes providing the cheeses meet the above criterion for 2D foods for calcium content.

Category 3D: cheese and processed cheese as defined in Standard 2.5.4 with a calcium content > 320 mg/100 g.

Category 3D may include cheese analogues derived from legumes providing they meet the above criterion for 3D foods for calcium content.

Mixed cheeses and other dairy products that contain >25% of other foods (e.g. fruit cheese) are not considered dairy foods/beverages in the HSRC but are classified as Category 1, 2 or 3 foods.

Custards, desserts, cream cheese, ice-cream and cream are not considered in the HSRC as dairy foods but are classified as Category 2 foods.

Step 2: Determine the form of the food for the HSR

The HSR and hence nutrient content values used to determine it should apply to the form of the food as determined in accordance with the following:

- the food as sold if the food can be either prepared with other foods or consumed as sold
- the food as prepared if the food is required to be prepared and consumed according to directions on the label
- the food after it is reconstituted with water and ready for consumption if the food requires reconstituting with water
- the food after it is drained and ready for consumption if the food requires draining before consuming.

In all cases the HSR should be based on the form of food for which the NIP information has been displayed[2]. If the HSR is based on food 'as consumed', the label should clearly specify elsewhere on the pack the directions for preparation or cooking.

[2] In some cases the NIP information for the form of the food may be displayed per serve, whilst the information in the HSR label for the same form of the food, may be displayed per 100g. E.g. A condensed soup is intended to be prepared (and consumed) in accordance with specific directions. Information in the NIP and the HSR label should reflect the nutritional values in the prepared product. In the NIP, information is presented per serve and per 100g as sold and per serve as prepared. In the HSR system label, the information is presented per 100g as prepared.

Clause 6 of Standard 1.2.7 provides information on requirements on the form of food if a nutrition content claim or health claim is made in addition to displaying a HSR.

For breakfast cereals, the NIP and HSR should be for the cereal *as sold*. For products that can be used in a number of ways by the purchaser, such as breadcrumbs, the HSR should apply to the product as sold.

Note Clause 11A of Standard 1.2.8 provides additional NIP requirements where nutrient content is based on food that is intended to be prepared or consumed with another food.

Step 3: Calculate HSR baseline points

HSR baseline points are calculated for the average quantity of energy, saturated fat, total sugars and sodium in 100 g or 100 ml of the food (based on the units used in the NIP). HSR Baseline Points are given in the table below for determining the HSR of a food, with a maximum of 30 points assigned to some components[3].

Note that the HSR baseline points are extended from the point scales used in the NPSC for determining eligibility of a food for carrying health claims, as set out in Standard 1.2.7. To achieve consistency with the approach taken in the NPSC, the extension of baseline points for 1, 1D, 2 and 2D foods beyond 10 points for average energy content and total sugars was undertaken in a linear fashion using the same increments applied to nutrient content in Standard 1.2.7 for differences below 10 points. The points do not extend to the maximum of 30 points for these two nutrients due to the inherent nature of food products (for example pure sugar at 100% sugar has a maximum of 22 points). The extension of points for saturated fatty acids and sodium was undertaken in a non-linear fashion beyond the original 10 point cap of the NPSC to account for the wide range of these nutrient values across foods. The points assigned were therefore not distorted by the very high saturated fatty acids and sodium content values found in only a few food products. Points for saturated fatty acids and sodium content were capped at a maximum of 30 points in the HSRC.

The point scales in Standard 1.2.7 for Category 3 foods for energy, saturated fatty acids, and sodium were already extended beyond 10 points. These point scales were retained for the purposes of the HSRC. There was no need to further extend total sugar points beyond 10 points as no foods in the 3 or 3D Category had > 45 g sugar/100 g.

[3] For consistency between the HSRC and the NPSC, the ratio of maximum baseline points: maximum modifying points was maintained at 2:1 (in the NPSC the ratio is 10:5 points; in the HSRC the ratio is 30:15 points).

Table 1: HSR Baseline Points for Category 1, 1D, 2 or 2D Foods

Baseline points	Average energy content (kJ) per 100 g or 100 mL	Average saturated fatty acids (g) per 100 g or 100 mL	Average total sugars (g) per 100 g or 100 mL	Average sodium (mg) per 100 g or 100 mL
0	≤335	≤1.0	≤5.0	≤90
1	>335	>1.0	>5.0	>90
2	>670	>2.0	>9.0	>180
3	>1005	>3.0	>13.5	>270
4	>1340	>4.0	>18.0	>360
5	>1675	>5.0	>22.5	>450
6	>2010	>6.0	>27.0	>540
7	>2345	>7.0	>31.0	>630
8	>2680	>8.0	>36.0	>720
9	>3015	>9.0	>40.0	>810
10	>3350	>10.0	>45.0	>900
11	>3685	>11.2	>49.0	>1005
12		>12.5	>54.0	>1121
13		>13.9	>58.0	>1251
14		>15.5	>63.0	>1397
15		>17.3	>67.0	>1559
16		>19.3	>72.0	>1740
17		>21.6	>76.0	>1942
18		>24.1	>81.0	>2168
19		>26.9	>85.0	>2420
20		>30.0	>90.0	>2701
21		>33.5	>94.0	>3015
22		>37.4	>99.0	>3365
23		>41.7		>3756
24		>46.6		>4192
25		>52.0		>4679
26		>58.0		>5223
27		>64.7		>5829
28		>72.3		>6506
29		>80.6		>7262
30		>90		>8106

Table 2: HSR Baseline Points for Category 3 and 3D Foods

Baseline points	Average energy content (kJ) per 100 g or 100 mL	Average saturated fatty acids (g) per 100 g or 100 mL	Average total sugars (g) per 100 g or 100 mL	Average sodium (mg) per 100 g or 100 mL
0	≤ 335	≤1.0	≤ 5.0	≤ 90
1	>335	>1.0	>5.0	>90
2	>670	>2.0	>9.0	>180
3	>1005	>3.0	>13.5	>270
4	>1340	>4.0	>18.0	>360
5	>1675	>5.0	>22.5	>450
6	>2010	>6.0	>27.0	>540
7	>2345	>7.0	>31.0	>630
8	>2680	>8.0	>36.0	>720
9	>3015	>9.0	>40.0	>810
10	>3350	>10.0	>45.0	>900
11	>3685	>11.0		>990
12		>12.0		>1080
13		>13.0		>1170
14		>14.0		>1260
15		>15.0		>1350
16		>16.0		>1440
17		>17.0		>1530
18		>18.0		>1620
19		>19.0		>1710
20		>20.0		>1800
21		>21.0		>1890
22		>22.0		>1980
23		>23.0		>2070
24		>24.0		>2160
25		>25.0		>2250
26		>26.0		>2340
27		>27.0		>2430
28		>28.0		>2520
29		>29.0		>2610
30		>30.0		>2700

The appropriate method to determine the HSR Baseline Points is subject to the category of the food determined in Step 1 above; the nutrient content of the food scored is determined by the form of the food in Step 2.

Step 4: Calculate HSR modifying points

HSR Modifying Points may be scored for the amount of fruits, nuts, vegetables and legumes (*fvnl*[4]) in a food to a maximum of 8 points and in some cases, the amount of protein and dietary fibre in a food to a maximum of 15 points for each.

Note that the point scales for *fvnl (HSR V points)* are expanded and those for HSR protein and dietary fibre are extended from the point scales used in the NPSC for determining eligibility of a food for carrying health claims, as set out in Standard 1.2.7.

HSR Protein (P) points can be scored if a food scores less than 13 baseline points. A food that scores equal to or more than 13 baseline points can only score protein points if the food scores 5 or more V points.

HSR Fibre (F) points can be scored for Category 2, 2D, 3 and 3D foods only. Category 1 and 1D foods (beverages) cannot score F points.

HSR V points can be scored (from 1 up to a maximum of 8 points) for foods that contain either non-concentrated *fvnl* sources or concentrated fruit or vegetables, or a mixture of both.

The method for determining the V points of a food are the same as those in Standard 1.2.7, however the HSR V points allocated have been slightly expanded (see Table 3 below), with the gaps filled in between 0, 1, 2, 5 and 8 points[5].

V points can be scored for fruits, vegetables, nuts and legumes (fvnl) including coconut, spices, herbs, fungi, seeds and algae content including –

(a) fvnl that are fresh, cooked, frozen, canned, pickled or preserved; and
(b) fvnl that have been peeled, diced or cut (or otherwise reduced in size), puréed or dried.

V points cannot be scored for –

(a) a constituent, extract or isolate of a food e.g. peanut oil, fruit pectin and de-ionised juice; or
(b) cereal grains mentioned as a class of food in Schedule 4 of Standard 1.4.2.

V points may be scored for –

(a) fruit juice or vegetable juice as standardised in Standard 2.6.1 including concentrated juices and purees;

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[4] The definition of *fvnl* is the same as that given in item 4 of Schedule 5 of Standard 1.2.7 as fruits, vegetables, nuts and legumes including coconut, spices, herbs, fungi, seeds and algae.

[5] The gaps were filled in by plotting the curve for % *fvnl* at 0, 1, 2, 5 and 8 points given in Standard 1.2.7 and then taking the % *fvnl* at the appropriate intersection on the curve for 3, 4, 6 and 7 points.

(b) coconut flesh (which is to be scored as a nut), whether juiced, dried or desiccated, but not processed coconut products such as coconut milk, coconut cream or coconut oil; and
(c) the water in the centre of the coconut.

There is an exception to the use of the form of the food rules given at Step 2 when determining the fruit and vegetable points (V points). The percentage of *fvnl* in a food should be calculated in accordance with the appropriate method in Standard 1.2.10 - Characterising Ingredients and Components of Food and not in accordance with the form of the food rules given above. This also applies when calculating the percentage of concentrated fruit or vegetables in food.
There is an exclusion from the above exception when determining the V points for canned vegetable and legume products. In the case of canned vegetables and legumes, the percentage of *fvn*l in the product should be calculated based on the product as it would be consumed (i.e. drained) and not the product as sold.

As a result of the above, the form of the *fvnl* in the food used to determine the percentage of non-concentrated *fvnl* / percentage concentrated fruit or vegetables will not always be the same as the form of the final food to which the HSR applies.

Work out the HSR V points (to a maximum of 8) in accordance with Table 3.

Table 3: HSR V Points

Points	Column 1 % concentrated fruit or vegetables	Column 2 % fvnl
0	<25	≤40
1	≥25	>40
2	≥43	>60
3	≥52	>67
4	≥63	>75
5	≥67	>80
6	≥80	>90
7	≥90	>95
8*	=100	=100

*For the purposes of HSRC a food that is >99.5% *fvnl* counts as 100% *fvnl* where food additives or fortificants have been added, e.g. pure fruit juice with added vitamin C

Use Column 1 of Table 3 if the fruit or vegetables in the food product are all concentrated[6] (including dried), for example dried fruit or tomato paste.

Use Column 2 of Table 3 if –

(a) there are no concentrated (or dried) fruit or vegetables in the food product; or
(b) the percentages of all concentrated ingredients are calculated based on the ingredient when reconstituted (according to subclauses 3(3) or (4) of Standard 1.2.10); or
(c) the food product contains a mixture of concentrated fruit or vegetables and non-concentrated *fvnl* sources (after following the formula given below); or
(d) the food product is potato crisps or a similar low moisture vegetable product.

[6] Column 1 only applies if a product contains concentrated fruit or vegetables. Nuts and legumes are specifically excluded from the definition of fruit and vegetables and should be scored under Column 2 in all forms (fresh, dried, roasted etc.).

If the food product contains a mixture of concentrated fruit or vegetables and non-concentrated *fvnl* sources, the percentage of total *fvnl* must be worked out as follows –

$$\frac{(\%\ \text{non-concentrated fvnl}) + (2 \times \%\ \text{concentrated fruit or vegetables})}{(\%\ \text{non-concentrated fvnl}) + (2 \times \%\ \text{concentrated fruit or vegetables}) + (\%\ \text{non fvnl ingredient})} \times 100/1$$

where –

> **%non-concentrated fvnl/concentrated fruit or vegetables** means the percentage of *fvnl* in the food determined using the appropriate calculation methods.

For the formula above, potato crisps and similar low moisture vegetable products are taken to be non-concentrated.

HSR Protein and fibre points

Table 4 gives HSR protein and fibre points, a maximum of 15 points can be awarded for each [2]. The extension of points for protein and fibre is non-linear beyond the original 5 point cap of the NPSC to account for the wide range of these nutrient values and so that the points assigned are not distorted by very high protein and fibre values found in only a few food products.

Note food products that score ≥13 HSR baseline points are not permitted to score points for protein unless they score five or more HSR V points in Table 3 above.

The prescribed methods of analysis to determine total dietary fibre are outlined in clause 18 of Standard 1.2.8.

Table 4: HSR Protein (P) and Fibre (F) Points

Points	Protein (g) per 100 g or 100 mL	Dietary fibre (g) per 100 g or 100 mL
0	≤1.6	≤0.9
1	>1.6	>0.9
2	≥3.2	>1.9
3	>4.8	>2.8
4	>6.4	>3.7
5	>8.0	>4.7
6	>9.6	>5.4
7	>11.6	>6.3
8	>13.9	>7.3
9	>16.7	>8.4
10	>20.0	>9.7
11	>24.0	>11.2
12	>28.9	>13.0
13	>34.7	>15.0
14	>41.6	>17.3
15	>50.0	>20.0

Step 5: Calculate the final HSR score

The final HSR score, based on the food's nutrient profile, is calculated by subtracting the HSR modifying points (V, P and/or F points) from the HSR baseline points (see Tables 1-4 above).

Calculate the final HSR score using the following formula –

Final HSR Score = baseline points – (V points) – (P points) – (F points)

Step 6: Assignment of a rating to food based on the final HSR score

The HSR score is assigned a rating according to Table 5, depending on which of the six categories of food in the HSRC it is classified in[7].

Table 5: Final scores used to assign Heath Star Ratings

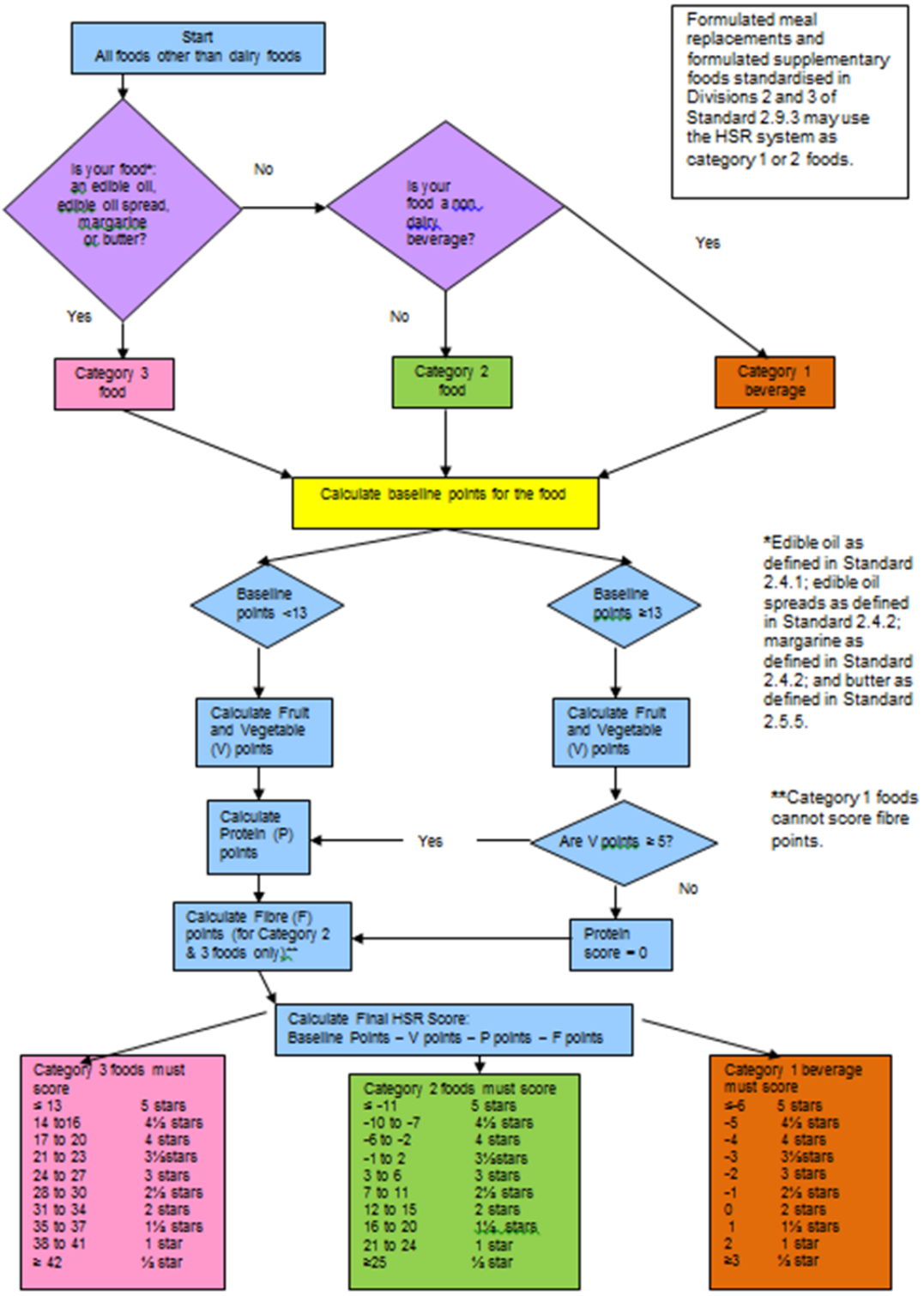
Health Star Rating	Food Category 1 Non-dairy beverage	Food Category 1D Dairy beverage	Food Category 2* Non-dairy foods	Food Category 2D# Dairy foods	Food Category 3 Oils and spreads	Food Category 3D Cheese >320 mg Ca/100g
5	≤ -6	≤ -2	≤ -11	≤ -2	≤ 13	≤ 22
4½	-5	-1	-10 to -7	-1	14 to 16	23 to 24
4	-4	0	-6 to -2	0	17 to 20	25 to 26
3½	-3	1	-1 to 2	1	21 to 23	27 to 28
3	-2	2	3 to 6	2	24 to 27	29 to 30
2½	-1	3	7 to 11	3	28 to 30	31 to 32
2	0	4	12 to 15	4	31 to 34	33 to 34
1½	1	5	16 to 20	5	35 to 37	35 to 36
1	2	6	21 to 24	6	38 to 41	37 to 38
½	≥3	≥7	≥25	≥7	≥42	≥39

*All foods other than dairy not in Category 1 or 3
All dairy foods not in Category 1D or 3D

Some examples are provided in Appendix 3 to illustrate how the HSRC works.

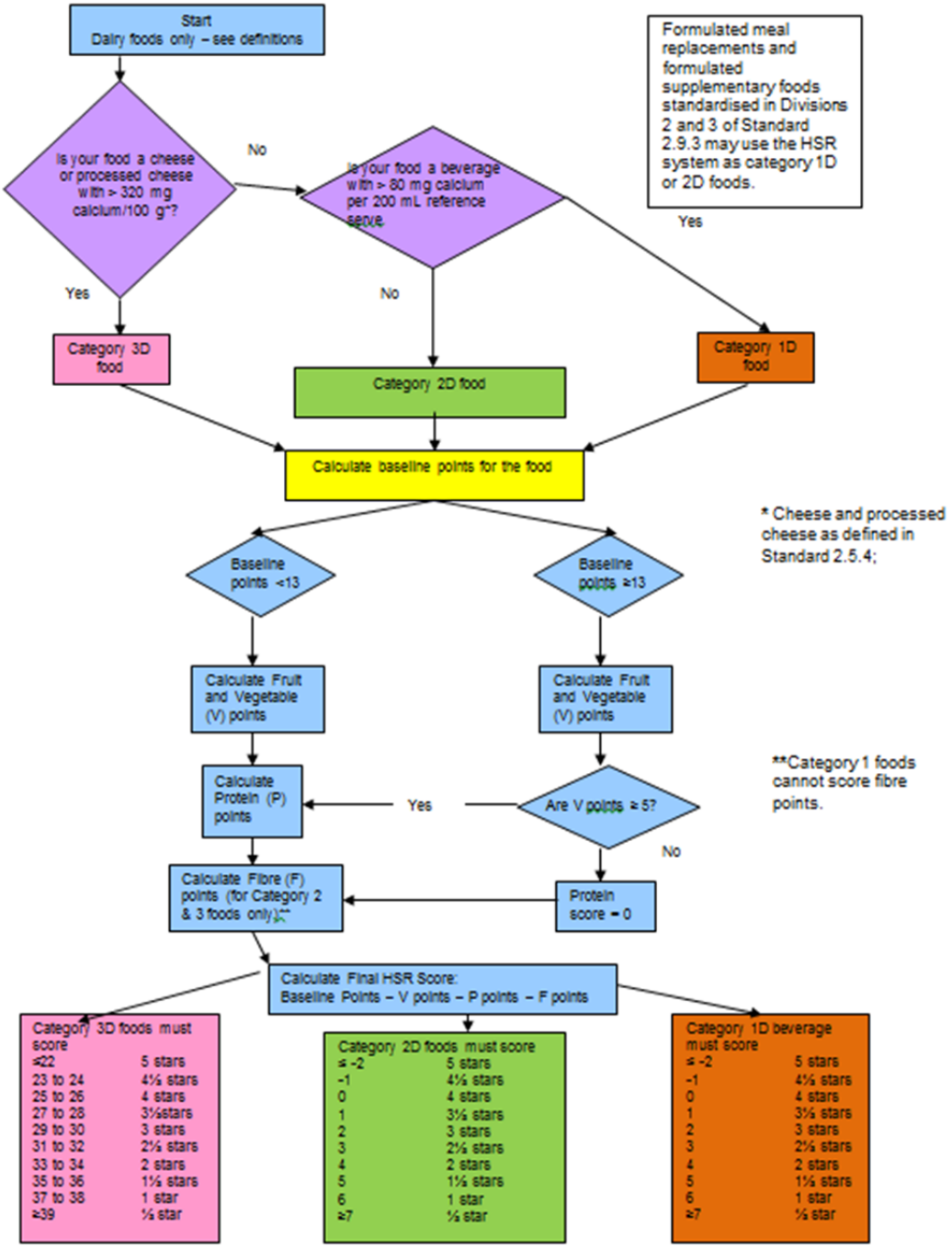
[7] The cut-off points of HSR scores for assigning star ratings were derived from the range of HSR scores generated for over 3000 foods, including packaged, unpackaged foods in the various food categories found in the food supply and single ingredient foods such as sugar and oil. For non-dairy foods, the 1st and 99th quantile scores were taken as the cut-offs for the 'most healthy' end point (5 stars) and 'least healthy' end point (½ star) respectively. For dairy foods the 5th quantile score was taken to determine the cut-off the most healthy (5 stars) and 99th quantile score for the 'least healthy' endpoint. Use of quantile scores to set the lower and upper HSR scores has the effect of removing outlier values, assigning them ½ or 5 stars as the case may be. The range of scores between each set of end points was then divided into 10 equal intervals to determine the HSR score cut-offs for the star ratings from ½ - 5 stars.

Appendix 1: All foods other than dairy foods - flow diagram of HSRC calculation steps



Appendix 2: Dairy (D) foods - flow diagram of HSRC calculation steps

(definitions for dairy foods apply)



Appendix 3: Calculation Examples

The following examples are provided to demonstrate the calculations in the HSRC. The nutrition information provided in these examples is intended to be fictional and is not based on any specific product existing in the market.

Example 1 – Chocolate milk

Nutrition Information – chocolate milk

Component	Per 100 mL
Energy	380 kJ
Protein	3.2 g
Saturated fatty acids	1.2 g
Total sugars	9.5 g
Dietary fibre	0
Sodium	45 mg
Calcium	120 mg

1) Determine the HSRC category of the food

The chocolate milk is a dairy beverage because it meets the >80 mg calcium per 200 mL reference serve requirement and is therefore a Category 1D food.

2) Determine form of food

As sold

3) Calculate HSR baseline points

Based on the nutrition information for the chocolate milk example, the baseline points obtained are highlighted below.

Table 1: HSR Baseline Points for Category 1, 1D, 2 or 2D Foods*

Baseline points	Average energy content (kJ) per 100 g or 100 mL	Average saturated fatty acids (g) per 100 g or 100 mL	Average total sugars (g) per 100 g or 100 mL	Average sodium (mg) per 100 g or 100 mL
0	≤335	≤1.0	≤5.0	≤90
1	>335	>1.0	>5.0	>90
2	>670	>2.0	>9.0	>180
3	>1005	>3.0	>13.5	>270
4	>1340	>4.0	>18.0	>360
5	>1675	>5.0	>22.5	>450
6	>2010	>6.0	>27.0	>540
7	>2345	>7.0	>31.0	>630

*This table is a shortened version of Table 1 provided in the HSRC Guide above

Total baseline points= (1) + (1) + (2) + (0) = 4

4) Calculate HSR modifying points

HSR V points

The chocolate milk in this example does not contain any *fvnl*.

V points = 0

HSR Protein (P) and fibre (F) points

Category 1D foods cannot score F points.

Based on the nutrition information for the chocolate milk example, the protein points obtained are highlighted below:

Table 4: HSR Protein (P) and Fibre (F) Points

Points	Protein (g) per 100 g or 100 mL	Dietary fibre (g) per 100 g or 100 mL
0	≤1.6	≤0.9
1	>1.6	>0.9
2	≥3.2	>1.9
3	>4.8	>2.8
4	>6.4	>3.7
5	>8.0	>4.7
6	>9.6	>5.4
7	>11.6	>6.3
8	>13.9	>7.3
9	>16.7	>8.4
10	>20.0	>9.7
11	>24.0	>11.2
12	>28.9	>13.0
13	>34.7	>15.0
14	>41.6	>17.3
15	>50	>20.0

The foods in this example contains 3.2 g of protein per 100 ml and therefore scores 2 protein points.

P points = 2 F points = 0

5) Calculate the final HSR score

Final HSR Score = Baseline points – (V points) – (P points) – (F points)

Chocolate milk

Final HSR Score = 4 – (0) – (2) – (0) = 2

6) Assessment of the final HSR score to a rating

The final HSR score for the chocolate dairy milk example (Category 1D food) is 2. Therefore the food, for the purposes of this example only, would be assigned a rating of 3 stars.

Note: the rating of similar products may vary depending on the amount of added sugar and type of milk used.

Example 2 – Dairy spread

Nutrition Information – Dairy Spread

Component	Per 100 mL
Energy	2420 kJ
Protein	0.0 g
Saturated fatty acids	16.5 g
Total sugars	0.0 g
Dietary fibre	0.0 g
Sodium	640 mg

1) Determine the HSRC category of the food

This dairy spread is defined in Standard 2.4.2, and therefore is a Category 3 (oils and spreads).

2) Determine form of food

As sold

3) Calculate HSR baseline points

Based on the nutrition information for this example, the baseline points obtained are adjacent to the highlighted boxes in the table below.

Table 2: HSR Baseline Points for Category 3 and 3D Foods

Baseline points	Average energy content (kJ) per 100 g or 100 mL	Average saturated fatty acids (g) per 100 g or 100 mL	Average total sugars (g) per 100 g or 100 mL	Average sodium (mg) per 100 g or 100 mL
0	≤ 335	≤1.0	≤ 5.0	≤ 90
1	>335	>1.0	>5.0	>90
2	>670	>2.0	>9.0	>180
3	>1005	>3.0	>13.5	>270
4	>1340	>4.0	>18.0	>360
5	>1675	>5.0	>22.5	>450
6	>2010	>6.0	>27.0	>540
7	>2345	>7.0	>31.0	>630
8	>2680	>8.0	>36.0	>720
9	>3015	>9.0	>40.0	>810
10	>3350	>10.0	>45.0	>900
11	>3685	>11.0		>990
12		>12.0		>1080
13		>13.0		>1170
14		>14.0		>1260
15		>15.0		>1350
16		>16.0		>1440
17		>17.0		>1530

*This table is a shortened version of Table 1 provided in the HSRC Guide above

Total baseline points = 7 + 16 + 0 + 7 = 30

4) Calculate HSR modifying points

HSR V points

As oil is an extract of a fruit, the food in this example cannot score V points for *fvnl* content.

V points = 0

HSR Protein points (P points)

The food in this example does not contain any protein and scores zero protein points.

Further, foods that score 13 or more baseline points are not permitted to score points for protein unless they score at least 5 V points. If the food in this example contained protein, it would not be permitted to score points for protein as it scored 28 baseline points and does not score any V points.

P points = 0

HSR Fibre points (F points)

The food in this example does not contain any dietary fibre.

F points = 0

5) Calculate the final HSR score

Final HSR Score = Baseline points – (V points) – (P points) – (F points)

Final HSR Score = 30 – (0) – (0) – (0) = 30

6) Assessment of the final HSR score to a rating

The final HSR score for the Dairy spread (Category 3 food) is 30. Therefore the food, for the purposes of this example only, would be assigned a rating of 2½ stars.

Example 3 – Fruit and nut muesli bar

Nutrition Information – Fruit and nut muesli bar

Component	Per 100 g
Energy	1735 kJ
Protein	12.5 g
Saturated fatty acids	4.5 g
Total sugars	36.4 g
Sodium	30 mg
Dietary fibre	5.0 g

1) Determine the HSRC category of the food

This bar is not a core dairy food, it is not a Category 1 or 3 food so is a Category 2 food (i.e. all foods other than those included in Category 1, 1D, 2D, 3 or 3D).

2) Determine form of food

As sold

3) Calculate HSR baseline points

Based on the nutrition information for this example, the baseline points obtained are adjacent to the highlighted boxes in the table below.

Table 1: HSR Baseline Points for Category 1, 1D, 2 or 2D Foods

Baseline points	Average energy content (kJ) per 100 g or 100 mL	Average saturated fatty acids (g) per 100 g or 100 mL	Average total sugars (g) per 100 g or 100 mL	Average sodium (mg) per 100 g or 100 mL
0	≤335	≤1.0	≤5.0	≤90
1	>335	>1.0	>5.0	>90
2	>670	>2.0	>9.0	>180
3	>1005	>3.0	>13.5	>270
4	>1340	>4.0	>18.0	>360
5	>1675	>5.0	>22.5	>450
6	>2010	>6.0	>27.0	>540
7	>2345	>7.0	>31.0	>630
8	>2680	>8.0	>36.0	>720
9	>3015	>9.0	>40.0	>810
10	>3350	>10.0	>45.0	>900
11	>3686	>11.2	>49.0	>1005
12		>12.5	>54.0	>1121
13		>13.9	>58.0	>1251
14		>15.5	>63.0	>1397
15		>17.4	>67.0	>1559
16		>19.5	>72.0	>1740
17		>21.6	>76.0	>1942

*This table is a shortened version of Table 1 provided in the HSRC Guide above

Total baseline points = (5) + (4) + (8) + (0) = 17

4) Calculate HSR modifying points

HSR V points

In this example, the bar contains 43% peanuts and 27% sultanas. Item 4 of Schedule 5 of Standard 1.2.7 contains the following formula to use to derive V points from this mixture of concentrated (dried) fruit or vegetables and non-concentrated *fvnl* ingredients:

$$\frac{(\%\ \text{non-concentrated fvnl}) + (2 \times \%\ \text{concentrated fruit or vegetables})}{(\%\ \text{non-concentrated fvnl}) + (2 \times \%\ \text{concentrated fruit or vegetables}) + (\%\ \text{non fvnl ingredient})} \times 100/1$$

where –

> **%non-concentrated fvnl/concentrated fruit or vegetables** means the percentage of *fvnl* in the food determined using the appropriate calculation methods outlined in Standard 1.2.10.

= 43 + (2 x 27) / 43 + (2x 27) + 30

= 97/127 x 100

= 76% *fvnl*, including a mixture of concentrated fruit and non-concentrated nuts; therefore Column 2 in the table below is used to determine the V points.

Table 3: HSR V Points

Points	Column 1 % concentrated fruit or vegetables	Column 2 % fvnl
0	<25	≤40
1	≥25	>40
2	≥43	>60
3	≥52	>67
4	≥63	>75
5	≥67	>80
6	≥80	>90
7	≥90	>95
8*	=100	=100

*For the purposes of HSRC a food that is >99.5% *fvnl* counts as 100% where food additives or fortificants have been added, eg pure fruit juice with added vitamin C

V points = 4

HSR Protein points (P points)

Foods that score 13 or more baseline points are not permitted to score points for protein unless they score at least 5 V points.

The food in this example scored 17 baseline points and 4 V points (it did not score at least 5 V points) and is therefore not permitted to score points for protein.

P points = 0

Table 4: HSR Protein (P) and Fibre (F) Points

Points	Protein (g) per 100 g or 100 mL	Dietary fibre (g) per 100 g or 100 mL
0	≤1.6	≤0.9
1	>1.6	>0.9
2	≥3.2	>1.9
3	>4.8	>2.8
4	>6.4	>3.7
5	>8.0	>4.7
6	>9.6	>5.4
7	>11.6	>6.3
8	>13.9	>7.3
9	>16.7	>8.4
10	>20.0	>9.7
11	>24.0	>11.2
12	>28.9	>13.0
13	>34.7	>15.0
14	>41.6	>17.3
15	>50.0	>20.0

F points = 5

5) Calculate the HSR final score

Final HSR Score = Baseline points – (V points) – (P points) – (F points)

Final HSR Score = (17) – (4) – (0) – (5) = 8

6) Assessment of the final HSR score to a rating

The final HSR score for the Fruit and nut muesli bar (Category 2 food) is 8. Therefore the food, for the purpose of this example only, would be assigned a rating of 2½ stars.

Note: the rating of similar products may vary depending on the amount of added sugar and fibre, and amount and type of cereal, fruit and nuts added.

Example 4 – Pizza Supreme

Nutrition Information – Pizza supreme

Component	Per 100 g
Energy	1125 kJ
Protein	13.9 g
Saturated fatty acids	5.2 g
Total sugars	0.9 g
Sodium	743 mg
Dietary fibre	3.3 g

1) Determine the HSRC category of the food

This pizza is not a core dairy food, it is not a Category 1 or 3 food so is a Category 2 food (i.e. all foods other than those included in Category 1, 1D, 2D, 3 or 3D).

2) Determine form of food

As sold

3) Calculate HSR baseline points

Based on the nutrition information for this example, the baseline points obtained are adjacent to the highlighted boxes in the table below.

Table 1: HSR Baseline Points for Category 1, 1D, 2 or 2D Foods

Baseline points	Average energy content (kJ) per 100 g or 100 mL	Average saturated fatty acids (g) per 100 g or 100 mL	Average total sugars (g) per 100 g or 100 mL	Average sodium (mg) per 100 g or 100 mL
0	≤335	≤1.0	≤5.0	≤90
1	>335	>1.0	>5.0	>90
2	>670	>2.0	>9.0	>180
3	>1005	>3.0	>13.5	>270
4	>1340	>4.0	>18.0	>360
5	>1675	>5.0	>22.5	>450
6	>2010	>6.0	>27.0	>540
7	>2345	>7.0	>31.0	>630
8	>2680	>8.0	>36.0	>720
9	>3015	>9.0	>40.0	>810
10	>3350	>10.0	>45.0	>900
11	>3686	>11.2	>49.0	>1005
12		>12.5	>54.0	>1121
13		>13.9	>58.0	>1251
14		>15.5	>63.0	>1397
15		>17.4	>67.0	>1559
16		>19.5	>72.0	>1740
17		>21.6	>76.0	>1942

*This table is a shortened version of Table 1 provided in the HSRC Guide above

Total baseline points = (3) + (5) + (0) + (8) = 16

4) Calculate HSR modifying points

HSR V points

In this example, the pizza contains 4% concentrated vegetables and 23% non-concentrated vegetables. Item 4 of Schedule 5 of Standard 1.2.7 contains the following formula to use to derive V points from this mixture of concentrated (dried) fruit or vegetables and non-concentrated *fvnl* ingredients:

$$\frac{(\%\ \text{non-concentrated fvnl}) + (2 \times \%\ \text{concentrated fruit or vegetables})}{(\%\ \text{non-concentrated fvnl}) + (2 \times \%\ \text{concentrated fruit or vegetables}) + (\%\ \text{non fvnl ingredient})} \times 100/1$$

where –

> **%non-concentrated fvnl/concentrated fruit or vegetables** means the percentage of *fvnl* in the food determined using the appropriate calculation methods outlined in Standard 1.2.10.

= 23 + (2 x 4) / 23 + (2x 4) + 73

= 31/104 x 100

= 30% fvnl, including a mixture of concentrated fruit and non-concentrated nuts; therefore Column 2 in the table below is used to determine the V points.

Table 3: HSR V Points

Points	Column 1 % concentrated fruit or vegetables	Column 2 % fvnl
0	<25	≤40
1	≥25	>40
2	≥43	>60
3	≥52	>67
4	≥63	>75
5	≥67	>80
6	≥80	>90
7	≥90	>95
8*	=100	=100

*For the purposes of HSRC a food that is >99.5% *fvnl* counts as 100% where food additives or fortificants have been added, eg pure fruit juice with added vitamin C

V points = 0

HSR Protein points (P points)

Foods that score 13 or more baseline points are not permitted to score points for protein unless they score at least 5 V points.

The food in this example scored 16 baseline points and 0 V points (it did not score at least 5 V points) and is therefore not permitted to score points for protein.

P points = 0

Table 4: HSR Protein (P) and Fibre (F) Points

Points	Protein (g) per 100 g or 100 mL	Dietary fibre (g) per 100 g or 100 mL
0	≤1.6	≤0.9
1	>1.6	>0.9
2	≥3.2	>1.9
3	>4.8	>2.8
4	>6.4	>3.7
5	>8.0	>4.7
6	>9.6	>5.4
7	>11.6	>6.3
8	>13.9	>7.3
9	>16.7	>8.4
10	>20.0	>9.7
11	>24.0	>11.2
12	>28.9	>13.0
13	>34.7	>15.0
14	>41.6	>17.3
15	>50.0	>20.0

F points = 3

5) Calculate the HSR final score

Final HSR Score = Baseline points – (V points) – (P points) – (F points)

Final HSR Score = (16) – (0) – (0) – (3) = 13

6) Assessment of the final HSR score to a rating

The final HSR score for the Pizza supreme (Category 2 food) is 13. Therefore the food, for the purpose of this example only, would be assigned a rating of 2 stars.

Note: the rating of similar products may vary depending on the amount and type of fat used and amount and type of cheese, meat, seafood, fruit or vegetables added.