

# **FIVE YEAR REVIEW OF THE HEALTH STAR RATING (HSR) SYSTEM**

**HSR Technical Advisory Group (TAG)**

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**Protein**

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## Summary

Both Australian and New Zealand dietary guidance provide advice on recommended protein intake levels and the number of serves of particular products required to meet these. In both countries, the vast majority of the population meet or exceed these recommendations.

The HSR algorithm currently rewards the presence of protein in certain products. Products must not exceed a set threshold of baseline points (derived from energy, total sugars, sodium and saturated fat content) in order to qualify for these positive protein points.

Inclusion of protein in the HSR algorithm can be traced to its predecessor, the Nutrient Profile Scoring Criterion (NPSC), used to determine eligibility for nutrition content claims and health claims in Australia and New Zealand. The NPSC itself was derived from the UK Ofcom model before it. In the evidence underpinning the UK approach, protein was a recommended inclusion as it provided a good surrogate for iron and calcium content, which are lacking in the UK population (as well as Australia and New Zealand). As neither of these were mandated in nutrient information panels, a pragmatic decision was made to use protein information as a surrogate in the algorithm.

However, it should be noted that when the NPSC was developed a more lenient approach to eligibility for protein points was taken, with the threshold at which products become ineligible relaxed to make it easier for products objectively assessed as “less healthy” to receive benefits from protein content.

Submissions to the five year review have queried whether the incorporation of protein aligns with the HSR system’s public health objectives. There is also a perception that protein could be added to offset negative nutrients to gain a higher HSR without necessarily delivering any real health benefits. Particular examples cited include breakfast cereals, snacks such as muesli bars and protein products such as powders and bars. Snack bars are considered in a separate TAG paper and the HSR Advisory Committee is investigating the application of the HSR system to protein products, which are not intended to be eligible for HSRs, through a separate process.

TAG has considered the treatment of protein in the HSR algorithm and explored whether protein should remain in the HSR algorithm and whether the current eligibility of products to benefit from protein content is appropriate.

While Australians and New Zealanders do not need to consume more protein, the inclusion of protein in the HSR algorithm generally provides a pragmatic, if indirect, surrogate for iron and calcium content, both of which are lacking to some degree in Australian and New Zealand diets. In addition, many FFG products (nuts, breakfast cereals, lean meats) are being appropriately promoted through protein content. This suggests that removing protein from the HSR algorithm completely would deliver limited benefit. As information on iron and calcium are not currently mandated on the nutrition information panel, using protein as a surrogate also remains a pragmatic compromise.

However, concerns raised by stakeholders do highlight an important point. That is, a limited range of products appear to receive benefits from protein modifying points despite being relatively high in energy, sodium, saturated fat and/or sugar.

In this respect, the threshold at which a product objectively assessed on its relative “healthiness” becomes eligible for positive protein points becomes the main consideration.

Many products (such as high sodium, sugar and saturated fat snacks and high sugar breakfast cereals) have been made eligible for the benefits of protein points through the relaxation of the protein tipping point in the NPSC/HSR algorithm. Revisiting and restoring the more stringent protein tipping point applied by the UK Ofcom model would impact relatively few products overall while preventing those which are higher in energy, total sugars, sodium and saturated fat content from being inappropriately advantaged by protein content.

Decreasing the protein threshold would also incentivise reformulation amongst the affected products, i.e. in order to meet the new tipping point and maintain the current HSR, a manufacturer would need to reduce energy, total sugars, sodium and/or saturated fat content.

## Problem definition

The objective of the HSR system is to provide convenient, relevant and readily understood nutrition information and/or guidance on food packs to assist consumers to make informed food purchases and healthier eating choices. In designing the HSR system, it was agreed that the system should be aligned with other food regulation, public health policies and authoritative sources of dietary advice including dietary guidelines, regulations and standards and industry codes. It was also agreed that the system should be based on elements that inform choice by assessing both health-benefit ('positive') and health-risk ('negative') associated food components.<sup>1</sup>

Protein is currently included in the HSR algorithm, just as it is included in the Nutrient Profiling Scoring Criterion (NPSC) algorithm from which the HSR algorithm was derived, though not all products are eligible to receive modifying points for the presence of protein. Products generally become eligible to score protein points provided that they score less than 13 baseline points (calculated on energy, total sugars, sodium and saturated fat content). In addition, a food product that scores more than or equal to 13 baseline points can score protein points if the product has a certain fruit, vegetable, nut and legume (FVNL) content.

Stakeholders have raised concern about the treatment of protein in the algorithm, noting that most Australians and New Zealanders already meet or exceed protein intake recommendations. They have provided examples where it is perceived products may be able to add protein to receive higher HSRs without delivering a genuine health benefit. Specific examples raised include breakfast cereals, muesli/snack bars (considered in a separate TAG report), and protein products such as bars and powders.

We note that some protein products such as bars and powders are regulated as formulated supplementary sports foods in the Australia New Zealand Food Standards Code (the Code),<sup>2</sup> and therefore specifically excluded from the HSR system as the definition of these products clearly indicates that they are not intended to be used as part of a normal diet. Outside of the TAG, the HSR Advisory Committee (HSRAC) is currently reviewing evidence that some products in this category may be displaying the HSR system.

The role of TAG in this paper is to review the performance of protein in the algorithm across HSR eligible products, informing consideration of whether it is making a useful contribution to achievement of the HSR system's public health objectives.

## Current treatment of protein in the HSR algorithm

The inclusion of protein in the HSR algorithm can be traced to its inclusion in the NPSC algorithm before it, and the earlier United Kingdom Ofcom model from which that system is derived.

Protein was included in the UK Ofcom model on the basis of modelling by Rayner et al in 2009<sup>3</sup> suggesting protein was a good proxy for several micronutrients. That work found protein is a good surrogate for iron content in meat products, calcium in dairy products and omega-3 content. Protein was also found to offset the lactose content of milk. Earlier prototypes of the UK Ofcom model gave scores for these

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<sup>1</sup> FoPL Project Committee, 2012, Objectives and principles for the development of a front-of-pack labelling (FoPL) system,

<http://foodregulation.gov.au/internet/fr/publishing.nsf/Content/frontofpackobjectives>

<sup>2</sup> FSANZ, 2017, Standard 2.9.4 – Formulated supplementary sports foods, <https://www.legislation.gov.au/Series/F2015L00421>

<sup>3</sup> Rayner M, Scarborough P, Lobstein T, 2009, The UK Ofcom Nutrient Profiling Model - Defining 'healthy' and 'unhealthy' foods and drinks for TV advertising to children, available at <https://www.ndph.ox.ac.uk/cnpn/files/about/uk-ofcom-nutrient-profile-model.pdf>

components, but were later replaced by the score for protein when it was noted that results were similar. From a practical perspective, it was also noted that only protein was required by food labelling legislation to be included in nutrition information panels and this information was therefore easy to obtain.

Ultimately, inclusion of protein in the UK Ofcom model on this basis was translated to the NPSC as subsequently developed by Food Standards Australia New Zealand (FSANZ) in Proposal P293 - Nutrition, health and related claims.<sup>4</sup> In adapting the UK Ofcom model, FSANZ also raised the protein tipping point from <11 to <13, meaning that a product can receive more baseline points (derived from energy, sodium, saturated fat and total sugars) before becoming ineligible. This effectively made the NPSC more lenient on protein.<sup>5</sup>

As noted by FSANZ at that time, products which became eligible in this scenario were generally cereal-based products scoring fibre points which also became eligible to score protein points, making them eligible for health claims. They included several types of breakfast cereals, some products with added sugar (iced buns) or added fat (scones, cheese-topped rolls), and some cereal and muesli bars. Documents produced by FSANZ at that time suggest the modification was considered useful because products which became eligible were said to 'generally conform to dietary guidelines such as moderation in sugar and sodium and therefore FSANZ is recommending that this change be made to the NPSC.'<sup>6</sup>

This approach adopted by the NPSC was later inherited by the HSR algorithm. The large number of stakeholder concerns to the five year review relating to products potentially captured by this approach (e.g. breakfast cereals) suggest this decision to relax the tipping point now warrants revisiting.

Beyond the tipping point application, both the NPSC and HSR contain one further relevant rule allowing certain products to claim protein modifying points. Where a product exceeds the baseline point requirement, it may still claim protein points if it exceeds a certain FVNL content (80% FVNL or 66% concentrated FVNL). This paper will also examine which products are receiving the benefit of protein points within this exemption to determine its potential public health impact.

### **Scaling of P Points in development of the HSR algorithm**

When the NPSC algorithm was modified for the purpose of providing a continuous HSR result (compared to a yes/no threshold for eligibility for health claims), the point scales for protein were extended in a non-linear form.

This decision was made recognising it was not necessary to assign a large number of points to higher protein content and to retain the ratio of maximum baseline and maximum modifying points (2:1) in both the NPSC and HSR. In both systems the negative components (energy, sodium, total sugar and saturated fat) are intended to have more influence on the final score than the positive components.

As the algorithm was developed, the protein point scale was further refined so that high protein foods did not score as many offset points compared to earlier versions, removing many high protein anomalies.

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<sup>4</sup> FSANZ, 2013, Proposal P293 - Nutrition, health and related claims  
<http://www.foodstandards.gov.au/code/proposals/Pages/proposalp293nutritionhealthandrelatedclaims/Default.aspx>

<sup>5</sup> FSANZ, 2013, Proposal P293 - Nutrition, health and related claims, Final Assessment Report, Attachment 6,  
<http://www.foodstandards.gov.au/code/proposals/Documents/P293%20Health%20Claims%20FAR%20Attach%206%20FINAL.pdf>

<sup>6</sup> FSANZ, 2013, Proposal P293 - Nutrition, health and related claims, Final Assessment Report, Attachment 6

In the final version, protein extends to 50%, contributing up to 15 points (figure 1).

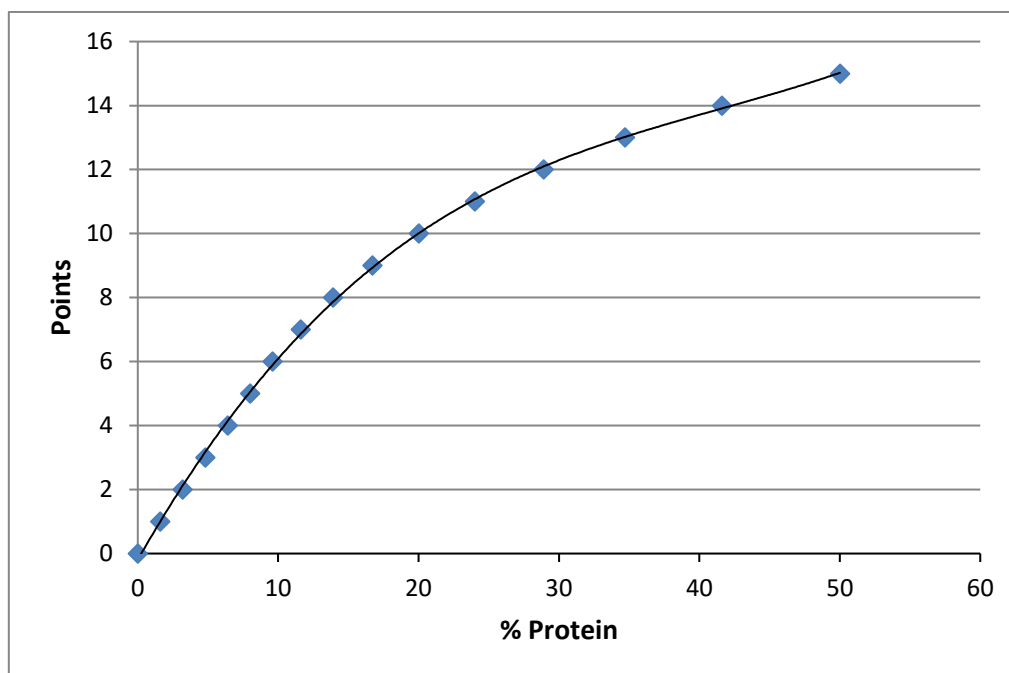


Figure 1: Current protein offset points for HSR categories 1 & 2

## Recommended and current intake of protein (and nutrients for which it is intended to act as a surrogate)

### Protein

Proteins consumed in the diet are broken down to amino acids which are used to synthesise new proteins for normal tissue maintenance and growth or used as a source of energy.

### Nutrient Reference Values

Protein intake recommendations vary for age, life stage and sex, with increased need for protein intake during periods of growth including childhood, pregnancy and lactation<sup>7</sup>.

The estimated average requirements (EAR) for protein have been set based on the amounts needed for the body to maintain itself and to allow for normal growth. The EARs range from:

- 12-16 g/day for 1-8 year olds
- 24-49 g/day for 9-18 years
- 37-65 g/day for adults 19 years and over
- 47-49 g/day for pregnancy 2<sup>nd</sup> and 3<sup>rd</sup> trimesters 14-50 years
- 51-54 g/day for lactation 14-50 years.

<sup>7</sup> NHMRC, 2006, Nutrient Reference Values: Protein, <https://www.nrv.gov.au/nutrients/protein>

### **Dietary guideline recommendations**

The Australian Dietary Guidelines (ADG)<sup>8</sup> and New Zealand Eating and Activity Guidelines (NZEAG)<sup>9</sup> recommend minimum serves, depending on age and life stage, to meet dietary protein requirements. These can come from a wide variety of different food groups including lean red meats and poultry, seafood, eggs, tofu, nuts and seeds, legumes/beans, milk and milk based products including yogurt and cheese (mostly reduced fat) and grain foods (mostly wholegrain).

### **Current protein intake - Australia**

The most recent data from the 2011-12 Australian Health Survey (AHS)<sup>10</sup> reports that 99% of Australians aged 2 years and older are meeting protein requirements, and that energy intake from protein has been increasing. Older adults were least likely to meet the protein EAR with 13.7% of men and 3.8% of women aged 71 years and over usually consuming less than the recommended EAR for protein. Protein's contribution to energy intake was significantly higher in 2011-12 than in 1995 where protein contributed 14.6% of energy intakes in children and adolescents (2-18 years of age) and 17.1% of adults' (19 years and over) energy intakes.

Table 1 indicates the major sources of protein in the Australian diet.

*Table 1: Major sources of protein, Australia, 2011-12<sup>11</sup>*

AHS category	Protein (% daily intake)	
	2-18 years	19 years and over
Beef, sheep and pork, unprocessed	7.2	11.2
Mixed dishes where cereal is the major ingredient	14.7	10.9
Poultry and feathered game	8.2	5.9
Regular breads, and bread rolls	8.5	7.1
Mixed dishes where poultry or feathered game is the major component	6.2	5.5
Dairy milk	9.2	5.4

### **Current protein intake - New Zealand**

According to the 2008-09 New Zealand Adult Nutrition Survey,<sup>12</sup> the majority (98%) of the New Zealand adult population (15 years and over) met the EAR recommendations, with the median usual daily protein intake of 86.5 g/day (102 g for males and 71 g for females). As with Australia, the contribution of protein to energy has increased from 1997 to 2008/09 for both males and females. The major dietary sources of protein in 2008-09 were breads (11.1%), poultry (8.8%), milk (8.8%), beef

<sup>8</sup> NHMRC, 2013, Australian Dietary Guidelines, <https://www.nhmrc.gov.au/guidelines-publications/n55>

<sup>9</sup> Ministry of Health, 2015, Eating and Activity Guidelines for New Zealand Adults, <https://www.health.govt.nz/publication/eating-and-activity-guidelines-new-zealand-adults>

<sup>10</sup> ABS, 2015, Australian Health Survey: Usual Nutrient Intakes, 2011-12, <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4364.0.55.008main+features12011-12>

<sup>11</sup> ABS, 2014, Australian Health Survey: Nutrition First Results – Foods and Nutrients, 2011-12, <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=2ahUKEwi3iKXy5aLcAhUFi5QKHcAKBboQFjAAegQIAhAB&url=http%3A%2F%2Fwww.abs.gov.au%2Fausstats%2Fabs%40.nsf%2Flookup%2F4364.0.55.007main%2Bfeatures12011-12&usg=AOvVaw0ktqfHkDomib2P-eVeoMc->

<sup>12</sup> Ministry of Health, 2011, A Focus on Nutrition: Key findings of the 2008/09 New Zealand Adult Nutrition Survey, <https://www.health.govt.nz/publication/focus-nutrition-key-findings-2008-09-nz-adult-nutrition-survey>

and veal (7.8%), grains and pasta (6.8%), bread based dishes (6.6%) and fish and seafood (6%).

The most recent data available for New Zealand children (aged 5-14 years) indicated that all age groups had a protein intake "in excess of requirements," with a mean intake of 78 g for males and 63 g for females. At the 10<sup>th</sup> percentile, intake still exceeded recommendations (53 g for males, 43 g for females). Bread (13%), milk (11%), poultry (9%) and beef and veal (8%) made the largest contributions to protein intake.<sup>13</sup>

## Calcium

It is clear that calcium intake is insufficient across both populations and in particular for specific ages and sexes.

In Australia, nearly three quarters of females (73%) and half of all males (51%) aged two years and over did not meet the calcium EAR from food consumption. Younger age groups were less likely to not meet calcium requirements (2-3 year olds, males: 0.7%, females 2.4%; 4-8 years, males: 11%, females 20.8%). However, nine in ten females 14-18 years (90.3%), 51-70 years (91.2%) and 71 years and older (94.3%) and males 71 years and older (89.5%) did not have a sufficient usual daily calcium intake. For both those aged 19 and over and 2-18 years of age, milk products and dishes was the leading source of calcium intake (19+: 39.1%, 2-18: 49.9%), followed by cereals and cereal products, such as flour, bread, breakfast cereal and pasta (19+: 12.2%, 2-18: 13.3%), and cereal based products and sweets, such as biscuits, cakes and pastries (19+: 12%, 2-18: 14.1%).<sup>14</sup>

The estimated prevalence of inadequate calcium intake amongst New Zealand adults<sup>15</sup> (15 years and older) was 59% (males 45%, females 73%). Similarly to Australia, females 15-18 years (87.8%), 51-70 years (88.2%) and 71 years and older (92.8%) and males 71 years and older (86%) were most likely to have an insufficient usual daily intake of calcium. Milk was the single largest contributor to calcium intake (27%), followed by bread (10%), non-alcoholic beverages (10%), cheese (8%), vegetables (6%) and dairy products (6%).

As with Australia, levels of inadequate intake were comparatively lower during childhood (5-6 year olds, males: 1.4%, females: 6.6%; 7-10 year olds, males: 1.4%, females: 12.4%; 11-14 year olds, males: 28.7%, females: 29.6%). For New Zealand children, milk was the largest contributor to calcium intake (34%), followed by bread (11%), dairy products (e.g. yoghurt, cream, ice-cream) (9%) and cheese (8%).<sup>16</sup>

## Iron

Though the proportion of the population with insufficient iron intake varies in Australia and New Zealand, a significant proportion of women do not meet iron intake recommendations.

In Australia, one in four women aged two years and over (23%) did not meet the requirements for usual iron intake, compared with 3% of males aged two years and over, with the prevalence of inadequate intake highest amongst females aged 14-50 years (14-18 years old: 40.1%; 19-30 years old: 37.5%; 31-50 years old: 37.5%). This may result from these groups having higher requirements for iron, as the prevalence of inadequate usual iron intake is lower than 15% for all other female age

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<sup>13</sup> Ministry of Health, 2003, NZ Food NZ Children: Key results of the 2002 National Children's Nutrition Survey, <https://www.health.govt.nz/system/files/documents/publications/nzfoodnzchildren.pdf>

<sup>14</sup> ABS, 2014, Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12

<sup>15</sup> Ministry of Health, 2011, A Focus on Nutrition: Key findings from the 2008/09 NZ Adult Nutrition Survey

<sup>16</sup> Ministry of Health, 2003, NZ Food NZ Children: Key results of the 2002 National Children's Nutrition Survey,



groups. Less than 5% of Australians had excessive iron intakes. Leading contributors to iron intake were cereals and cereal products (2-18 years: 35%, 19 years and over: 30%), meat and poultry (2-18: 14%, 19+: 17.6%) and cereal based products and dishes (2-18: 19.5%, 19+ 14.9%).<sup>17</sup>

Overall, 5.6% of New Zealanders aged 15 years and above had an inadequate intake of iron, with 1.2% of males and 9.7% of females not meeting the requirements for usual iron intake. As with Australia, this varies widely, with females aged 15-18 (34.2%) and 31-50 (15.4%) most likely to not meet iron intake requirements. Bread was the single largest contributor to iron intake (11.5%), followed by breakfast cereals (10.4%), vegetables (7%), beef and veal (6.8%) and potatoes, kumara and taro (6%).<sup>18</sup>

Of New Zealanders aged between 5 and 14 years, the prevalence of inadequate iron intake was 6.6%, with rates higher amongst females (12%) than males (1.6%). Menstruating females aged 11-14 years were most likely to not meet requirements (43.9%, compared to 4.2% of non-menstruating females aged 11-14 and 2.1% of males aged 11-14 years). Breakfast cereals provided the greatest proportion of iron to the diet of New Zealand children (18%), followed by bread (12%), beef and veal (5%), potatoes, kumara and taro (7%) and beverages (6%).<sup>19</sup>

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<sup>17</sup> ABS, 2014, Australian Health Survey: Nutrition First Results - Foods and Nutrients, 2011-12

<sup>18</sup> Ministry of Health, 2011, A Focus on Nutrition: Key findings from the 2008/09 NZ Adult Nutrition Survey

<sup>19</sup> Ministry of Health, 2003, NZ Food NZ Children: Key results of the 2002 National Children's Nutrition Survey

## Analysis of identified issues

### Issue 1: Is the inclusion of positive protein modifying points appropriate?

#### Protein as a proxy for calcium and iron

As noted previously, during the development of the UK model protein was assessed as a good surrogate for iron and/or calcium content<sup>20</sup> and the inclusion of protein for this purpose has been preserved through the NPSC and HSR algorithm. It is beyond the scope of this paper to reconsider the relationship between protein and iron and/or calcium content (noting that the current review of the UK model does not propose any changes to the treatment of protein in that system<sup>21</sup>).

The key question therefore is whether protein content appropriately advantages products which are considered to be good sources of calcium and/or iron.

#### Products currently receiving protein modifying points

Table 2 displays the products receiving protein points in the TAG database. Of note:

- Overall, nuts (64% of total products in category), dips (36%), snack foods (e.g. potato crisps, muesli bars) (29%) and breakfast cereals (27%) are the categories with the largest proportion of beneficiaries of protein points. Between 10-15% of bakery/cake mixes, biscuits, cream and ice cream also receive protein points.
- Most products are eligible via baseline points, with all breakfast cereals, dips, bakery/cake mixes, biscuits, cream and ice cream and almost three quarters of snacks gaining points in this way.
- Nuts are largely eligible for and are the majority of products which are currently receiving protein points through FVNL content.

Calcium is predominantly found in dairy products (and protein and calcium are largely inseparable in dairy products), with smaller amounts present in bony fish, legumes, certain nuts, fortified dairy substitutes and cereal products.<sup>22</sup> Wholegrain cereals, meats, fish and poultry are the major contributors to iron intake in Australia and New Zealand and are recommended for consumption in both sets of dietary guidance in part for their iron content (noting that the ADG also promotes the consumption of nuts and legumes for iron).<sup>23, 24</sup>

All of the product categories mentioned above, with the exception of dairy substitutes, benefit from the presence of protein in the HSR algorithm. As such, the HSR system may be considered to indirectly promote the consumption of products which are good sources of calcium and iron.

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<sup>20</sup> Rayner M, Scarborough P, Lobstein T, 2009, The UK Ofcom Nutrient Profiling Model - Defining 'healthy' and 'unhealthy' foods and drinks for TV advertising to children

<sup>21</sup> Public Health England, 2018, Annex A – The 2018 review of the UK Nutrient Profiling Model, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/694145/Annex\\_\\_A\\_the\\_2018\\_review\\_of\\_the\\_UK\\_nutrient\\_profiling\\_model.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/694145/Annex__A_the_2018_review_of_the_UK_nutrient_profiling_model.pdf)

<sup>22</sup> NHMRC, 2006, Nutrient Reference Values: Calcium, <https://www.nrv.gov.au/nutrients/calcium>

<sup>23</sup> NHMRC, 2013, Australian Dietary Guidelines, pp. 36, 44, 48

<sup>24</sup> Ministry of Health, 2015, Eating and Activity Guidelines for New Zealand Adults, pp. 14, 20

Table 2: Products in TAG database receiving protein modifying points, by AGHE category

AGHE category	Eligible products (n)	% of products in database	Eligible on baseline points				Eligible on FVNL content			
			Products (n)	% of total gaining protein points	Protein points (range)	Protein points (mean)	Products (n)	% of total gaining protein points	Protein points (range)	Protein points (mean)
FFG Cereals - bread	0	0	0	-	-	-	0	-	-	-
FFG Cereals - breakfast	81	27	81	100	2-10	5.51	0	0	-	-
FFG Cereals - pasta/flour/grains	8	4	8	100	2-6	5	0	0	-	-
FFG Dairy alternative beverages	0	0	0	-	-	-	0	-	-	-
FFG Dairy - beverages	0	0	0	-	-	-	0	-	-	-
FFG Dairy - beverages dry mix/milk powder	0	0	0	-	-	-	0	-	-	-
FFG Dairy - cheese	1	0	1	100	10	10	0	0	-	-
FFG Dairy - yoghurt, soft cheese	1	0	1	100	6	6	0	0	-	-
Dairy Discretionary foods - cream	8	12	8	100	1-3	1.38	0	0	-	-
Dairy Discretionary foods - cream cheese	5	7	5	100	4	4	0	0	-	-
Fats, oils & oil based spreads	0	0	0	-	-	-	0	-	-	-
Flavoured water	0	0	0	-	-	-	0	-	-	-
Fruit - other juices	0	0	0	-	-	-	0	-	-	-
Fruit - processed	11	9	4	36	1-2	1.5	7 <sup>5</sup>	64	1-2	1.14
Fruit - unprocessed	0	0	0	-	-	-	0	-	-	-
Fruit - whole juices	0	0	0	-	-	-	0	-	-	-
Discretionary foods - bakery/cake mixes	18	15	18	100	1-6	2.89	0	0	-	-

AGHE category	Eligible products (n)	% of products in database	Eligible on baseline points				Eligible on FVNL content			
			Products (n)	% of total gaining protein points	Protein points (range)	Protein points (mean)	Products (n)	% of total gaining protein points	Protein points (range)	Protein points (mean)
Discretionary foods - beverage dry mixes	0	0	0	-	-	-	0	-	-	-
Discretionary foods - biscuits	36	14	36	100	4-8	5.61	0	0	-	-
Discretionary foods - carbonated beverages	0	0	0	-	-	-	0	-	-	-
Discretionary foods - confectionery	5	5	5	100	1-4	1.8	0	0	-	-
Discretionary foods - cordial	0	0	0	-	-	-	0	-	-	-
Discretionary foods - custard/desserts	7	9	7	100	1-3	2.14	0	0	-	-
Discretionary foods - dips	10	36	10	100	2-6	2.9	0	0	-	-
Discretionary foods - dressings	0	0	0	-	-	-	0	-	-	-
Discretionary foods - ice confectionery	0	0	0	-	-	-	0	-	-	-
Discretionary foods - ice cream	20	11	20	100	1-3	1.5	0	0	-	-
Discretionary foods - jelly	0	0	0	-	-	-	0	-	-	-
Discretionary foods - lifestyle	0	0	0	-	-	-	0	-	-	-
Discretionary foods - meals/meal bases	8	3	81	100	1-8	4.75	0	0	-	-
Discretionary foods - miscellaneous	2	8	12	50	6	6	1 <sup>6</sup>	50	10	10
Discretionary foods - pizza	0	0	0	-	-	-	0	-	-	-
Discretionary foods - sauces/condiments	9	3	5	56	1-6	2	4	44	1	1
Discretionary foods - snacks	90	29	723	80	2-11	4.5	18 <sup>7</sup>	20	2-12	7.56

AGHE category	Eligible products (n)	% of products in database	Eligible on baseline points				Eligible on FVNL content			
			Products (n)	% of total gaining protein points	Protein points (range)	Protein points (mean)	Products (n)	% of total gaining protein points	Protein points (range)	Protein points (mean)
Discretionary foods - soups/stocks	0	0	0	-	-	-	0	-	-	-
Discretionary foods - yeast spread	0	0	0	-	-	-	0	-	-	-
Protein - meats/fish	22	7	224	100	6-10	8.23	0	0	-	-
Protein - nuts	49	64	11	22	6-12	8.45	38	78	4-12	9.92
Protein - plant	5	5	5	100	5-10	7.6	0	0	-	-
Vegetables - processed	4	1	2	50	1	1	2	50	1-3	2
Vegetables - unprocessed	0	0	0	-	-	-	0	-	-	-
Water	0	0	0	-	-	-	0	-	-	-
<b>Total</b>	<b>400</b>	<b>7</b>	<b>330</b>	<b>83</b>			<b>70</b>	<b>18</b>		

Explanatory notes (AHS 5 digit categories):

1: dry savoury sauces and casserole bases and dry mixes (n=4), savoury pasta/noodle and sauce dishes, saturated fat  $\leq 5$  g/100 g (n=2), processed meat, commercially sterile (includes canned meats) (n=1), stock cubes and seasonings (n=1)

2: milk, evaporated or condensed, undiluted

3: potato crisps (n=21), muesli and cereal style bars, added coatings or confectionery (n=15), muesli and cereal style bars, with fruit and/or nuts (n=9), extruded snacks (n=8), muesli and cereal style bars, no fruit (n=7), popcorn (n=4), muesli bar, with fruit or fruit paste filling (n=2), chocolate-based confectionery with nut fillings or additions (n=2), other snacks (n=2), lollies and other confectionery, sugar sweetened (n=1), savoury biscuits, rice based (includes rice cakes) (n=1)

4: ham (n=14), packed fin fish (n=3), chicken (n=2), lamb and mutton (n=1), processed delicatessen meat, mammalian (n=1), processed delicatessen meat, poultry (n=1), processed meat, commercially sterile (includes canned meats) (n=1)

5: dried vine fruit (n=4), other dried fruit including mixed dried fruit (n=3)

6: seeds

7: fruit bar and fruit-based confectionery (n=5), peanut products (n=6), potato crisps (n=3), peanuts (n=1), dried fruit and nut mixes (n=1), mixed nuts or nuts and seeds (n=1), other nuts and nut products and dishes (n=1)

## **Issue 2: Is the starting hurdle to achieve protein modifying points appropriate?**

### **Eligibility on FVNL content**

Nuts tend to exceed the 13 point protein tipping point on saturated fat content. However, both the ADG<sup>25</sup> and NZEAG<sup>26</sup> recommend the regular consumption of nuts and their beneficial presence in products is recognised in the HSR system through FVNL content. The AGHE nut category itself is the main recipient of protein points based on FVNL content (i.e. not just products containing some nut content), in terms of proportion of products within the category captured and proportion of all products eligible for protein points on FVNL. As such, it is considered that the current HSR rules in this respect are appropriate.

### **Eligibility on baseline points**

The product categories made eligible for protein points on baseline points are predominately classified as “discretionary,” i.e. recommended to be avoided by Australian and New Zealand dietary advice. The HSR system does not encompass this binary classification system and instead compares and ranks products based on their overall nutrition profile. There are “more healthy” options within these categories and therefore it may be appropriate for some products to receive protein points. However, products within FFG categories also do not fall neatly into an absolute, binary classification and there are “less healthy” options available.

In this respect, the threshold at which a product objectively assessed on its relative “healthiness” becomes eligible for positive protein points becomes the main consideration.

### ***Changing the baseline tipping point for protein***

As noted previously, in adapting the UK model the NPSC (and HSR algorithm) made it easier for products assessed as “less healthy” in other respects to be eligible for protein points. This was facilitated by changing the protein tipping point (at which a product becomes ineligible for protein points) from 11 to 13 points.

Analysis of the TAG database has indicated those product categories potentially impacted by any amendment of the tipping point for protein to either 12 or 11 (results in Table 3 and Appendix 2). Eligibility for protein points is reduced for most AGHE categories, in particular:

- 18% of dips are eligible under any reduction (decrease from 36%)
- 22% and 15% of snacks remain eligible under reductions to 12 or 11 points, respectively (down from 29%)
- 15% and 4% of breakfast cereals remain eligible under reductions to 12 or 11 points, respectively (down from 27%)
- Bakery/cake mixes, biscuits, cream and ice cream also see reductions in proportions eligible for protein points.

Nuts do not experience any decrease in the proportion receiving protein points.

Reducing the protein tipping point to 12 points would render one third of all products currently receiving protein points ineligible. This increases to nearly one half of products for a reduction to 11 points. Whether FFG or discretionary, the affected products are, according to the objective analysis of the HSR algorithm, “less healthy” than other options.

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<sup>25</sup> NHMRC, 2013, Australian Dietary Guidelines, p. v

<sup>26</sup> Ministry of Health, 2015, Eating and Activity Guidelines for New Zealand Adults, p. 6

A list of products from the TAG database affected by changing the tipping point for protein to either 11 or 12 is at Appendix 2.

## **Options to address identified issues**

A summary of the options considered by TAG to address the above issues is at Table 4.

Table 3: Products in TAG database receiving protein modifying points under different options for tipping points, by AGHE category

AGHE category	Total eligible products, incl. via FVNL (n)			% of products in database		
	Original tipping point (13)	Revised tipping point (12)	Revised tipping point (11)	Original tipping point (13)	Revised tipping point (12)	Revised tipping point (11)
FFG Cereals - breakfast	81	45	12	27	15	4
FFG Cereals - pasta/flour/grains	8	4	2	4	2	1
FFG Dairy - cheese	1	1	1	0	0	0
FFG Dairy - yoghurt, soft cheese	1	1	1	0	0	0
Dairy Discretionary foods - cream	8	7	7	12	10	10
Dairy Discretionary foods - cream cheese	5	5	5	7	7	7
Fruit - processed	11	11	11	9	9	9
Discretionary foods - bakery/cake mixes	18	14	12	15	11	10
Discretionary foods - biscuits	36	19	11	14	7	4
Discretionary foods - confectionery	5	5	5	5	5	5
Discretionary foods - custard/desserts	7	7	7	9	9	9
Discretionary foods - dips	10	5	5	36	18	18
Discretionary foods - ice cream	20	12	12	11	7	7
Discretionary foods - meals/meal bases	8	3	3	3	1	1
Discretionary foods - miscellaneous	2	1	1	8	4	4
Discretionary foods - sauces/condiments	9	7	7	3	2	2
Discretionary foods - snacks	90	67	45	29	22	15
Protein - meats/fish	22	15	9	7	5	3
Protein - nuts	49	49	49	64	64	64
Protein - plant	5	3	0	5	3	0
Vegetables - processed	4	3	3	1	1	1
<b>Total</b>	<b>400</b>	<b>284</b>	<b>208</b>	<b>7</b>	<b>5</b>	<b>4</b>



Table 4: Summary of options to address identified issues

Option number	Options	Benefits	Disadvantages	Comments
1	Status quo		<ul style="list-style-type: none"> <li>• Would not resolve or be seen to address issues raised regarding protein</li> <li>• May inappropriately advantage products with high protein content that does not confer sufficient health benefits</li> <li>• May inappropriately advantage products with high sugar, sodium, saturated fat and/or energy content</li> <li>• May encourage the addition of protein to products in order to improve HSRs</li> </ul>	<ul style="list-style-type: none"> <li>• No change to current HSRs</li> <li>• Aligns with NPSC</li> <li>• Does not align with UK Ofcom model</li> </ul>
2	Removing protein from HSR system	<ul style="list-style-type: none"> <li>• May resolve and be seen to address issues raised regarding protein</li> <li>• Simple to implement and communicate</li> </ul>	<ul style="list-style-type: none"> <li>• Removes potential surrogate benefits for calcium and iron to indirectly promote intake</li> <li>• Would also disproportionately affect a wide range of “healthy” products</li> </ul>	<ul style="list-style-type: none"> <li>• Does not align with NPSC or UK Ofcom model</li> <li>• Would require significant changes to many HSRs</li> </ul>
3	Decreasing tipping point for products to be eligible to score points for protein	<ul style="list-style-type: none"> <li>• Targeted approach</li> <li>• Affected products may be considered objectively less healthy in the first instance</li> <li>• May encourage reformulation to reduce sugar, sodium, saturated fat and/or energy content</li> <li>• Simple to implement and communicate</li> <li>• May resolve and be seen to address issues raised regarding protein</li> </ul>	<ul style="list-style-type: none"> <li>• Removes potential surrogate benefits for calcium and iron to indirectly promote intake for some products</li> </ul>	<ul style="list-style-type: none"> <li>• Does not align with NPSC</li> <li>• Returns HSR algorithm towards UK Ofcom model</li> <li>• May require changes to current HSRs displayed for few products</li> </ul>

## Discussion

While Australians and New Zealanders do not need to consume more protein, the inclusion of protein in the HSR algorithm generally provides a pragmatic, if indirect, surrogate for iron and calcium content, both of which are lacking to some degree in Australian and New Zealand diets. In addition, many FFG products (nuts, breakfast cereals, lean meats) are being appropriately promoted through protein content. This suggests that removing protein from the HSR algorithm completely would deliver limited benefit. As information on iron and calcium are not currently mandated on the nutrition information panel, using protein as a surrogate also remains a pragmatic compromise.

However, concerns raised by stakeholders do highlight an important point. That is, a limited range of products appear to receive benefits from protein modifying points despite being relatively high in energy, sodium, saturated fat and/or sugar. Our analysis suggests these foods may be benefitting from the current protein tipping point/eligibility rules.

Returning the tipping point to 12 or 11 points, as per the original UK model, would impact only a small number of products. Many snacks, biscuits and ice creams would experience a reduction in HSRs, as would some types of breakfast cereals, particularly those with higher sugar content but a significant amount of added protein.

Decreasing the protein threshold would also incentivise reformulation amongst the affected products, i.e. in order to meet the new tipping point and maintain the current HSR, a manufacturer would need to reduce energy, total sugars, sodium and/or saturated fat content.

## Conclusion

In this respect, the threshold at which a product objectively assessed on its relative “healthiness” becomes eligible for positive protein points becomes the main consideration.

Many products (such as high sodium, sugar and saturated fat snacks and high sugar breakfast cereals) have been made eligible for the benefits of protein points through the relaxation of the protein tipping point in the NPSC/HSR algorithm. Revisiting and restoring the more stringent protein tipping point applied by the UK model would impact relatively few products overall while preventing those which are higher in energy, total sugars, sodium and saturated fat content from being inappropriately advantaged by protein content.

Decreasing the protein threshold would also incentivise reformulation amongst the affected products, i.e. in order to meet the new tipping point and maintain the current HSR, a manufacturer would need to reduce energy, total sugars, sodium and/or saturated fat content.

# APPENDIX 1: TAG database

## Database

The initial database used in the development of the HSR system was expanded with data provided by the food industry in 2017. This revised TAG database includes product nutrient data for 5,885 food products across 42 food categories based on the Australian Guide to Health Eating (AGHE) food groups (e.g. fats and oils, core cereals, dairy, processed and unprocessed fruits and vegetables, animal protein etc.). Data cover the range of HSR nutrients found in Australian and New Zealand foods, including fruit, vegetable, nut and legume (FVNL) and fibre content data for all foods where applicable. The data are not independently verified.

## Modelling methods

All data analysis appearing as results in this report was conducted on the most recent active database of HSR foods compiled as set out above. All HSR parameters (profiler and scaling parameters) are as per the current version of the algorithm obtainable from the HSR website,<sup>27</sup> or otherwise as defined in the current Guide for Industry to the HSR Calculator.<sup>28</sup> The database was used in its “formula active” state so that:

- All HSR algorithm parameters could be adjusted to illustrate optional interventions
- Data could be sorted, filtered, classified and segregated for analysis by HSR category, AHS food classification and various groups or sub-groups
- All results could be compiled and held within the same spreadsheet database of foods selected for the purpose
- Results could be quickly de-identified
- Requests for ad hoc analysis by TAG could be readily undertaken, including ad hoc re-scaling and re-categorisation of foods.

The analysis was undertaken using the most recent version of Microsoft Excel for Mac (version 16.11.1) and the Microsoft software partner add-in application XLSTAT 2017: Data Analysis and Statistical Solution for Microsoft Excel.<sup>29</sup> XLSTAT provides a wide range of data analysis and charting capabilities.

Most results are simple bar charts or scatter plots, however some more advanced modelling tools may have been applied so as to predict general trends from limited data. This includes:

- Quantile/percentile methods for setting end-points so as to roll outliers into the ½ or 5-star categories during scaling
- Use of Weibull curves (a graphical method of portraying a distribution of malleable shape determined by the underlying data) for predicting the “maximum likelihood” distribution of expected ratings from limited data
- Standard food modelling techniques for predicting dilution effects on nutrient content
- Standardised residuals from linear regression to predict the sensitivity of star ratings to the different nutrients, for example within food categories.

Note that when regression is used, such as in the case of standardised residuals and scatterplots where trends are indicated, 95% confidence intervals or ellipses are used to provide an estimate of the predictive reliability of the underlying data.

Further details of all analysis types and techniques may be obtained from TAG.

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<sup>27</sup> <http://www.healthstarrating.gov.au>

<sup>28</sup> HSR Advisory Committee, 2018, Guide for Industry to the HSR Calculator, v. 6, available at <http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/guide-for-industry-document>

<sup>29</sup> Addinsoft, 2017, XLSTAT 2017: Data Analysis and Statistical Solution for Microsoft Excel

## APPENDIX 2: Effect on HSRs of changing protein tipping point

Key:

Cells shaded in shades of pink indicate products whose HSR decreases under the relevant option; the darker the pink shade, the greater the decrease, up to a maximum of 1.5 HSR.

AGHE category	AHS 5-digit classification name	13 points	12 points	11 points
FFG Cereals - breakfast	Breakfast cereal, corn based, fortified	★★★	★★★	★★◇
FFG Cereals - breakfast	Breakfast cereal, corn based, fortified	★★★	★★★	★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars >20 g/100g	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars >20 g/100g	★★★★◇	★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★★	★★★★	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, wheat based, fortified, sugars >20 g/100g	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, wheat based, fortified, sugars ≤20 g/100g	★★★★◇	★★★★◇	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★	★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, corn based, fortified	★★★	★★★	★★◇
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★★◇	★★★★◇	★★★★
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★★◇	★★★★◇	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, rice based, fortified	★★★★◇	★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars >20 g/100g	★★★★	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars ≤20 g/100g	★★★★◇	★★★★◇	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars ≤20 g/100g	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars >25 g/100g	★★★★◇	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★◇	★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★◇	★★★◇	★★★◇
FFG Cereals - breakfast	Porridge style, oat based	★★★★	★★★★	★★★★◇

AGHE category	AHS 5-digit classification name	13 points	12 points	11 points
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★◇	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, corn based, fortified	★★★	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars >20 g/100g	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars >20 g/100g	★★★★◇	★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★★◇	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★★	★★★★◇	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars >20 g/100g	★★★★	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★◇	★★★★◇	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★◇	★★★★◇	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★◇	★★★★◇	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, rice based, fortified	★★★	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, rice based, fortified	★★★	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★★	★★★
FFG Cereals - breakfast	Muesli and cereal style bars, no fruit	★★★★◇	★★★	★★★
FFG Cereals - breakfast	Muesli and cereal style bars, with fruit and/or nuts	★★★★	★★★★	★★★
FFG Cereals - breakfast	Muesli bar, with fruit or fruit paste filling	★★★	★★◇	★★◇
FFG Cereals - breakfast	Muesli bar, with fruit or fruit paste filling	★★★	★★◇	★★◇
FFG Cereals - breakfast	Muesli bar, with fruit or fruit paste filling	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★	★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★★	★★★
FFG Cereals - breakfast	Porridge style, oat based	★★★★	★★★★	★★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★	★★★★	★★★
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★★	★★★★	★★★

AGHE category	AHS 5-digit classification name	13 points	12 points	11 points
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars ≤20 g/100g	★★★★	★★★★	★★★◇
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★★	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★◇	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★◇	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★◇	★★◇	★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, fortified, sugars >20 g/100g	★★★★	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★◇	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts, fortified	★★★★	★★★◇	★★★◇
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★★	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★◇	★★★◇	★★★★
FFG Cereals - breakfast	Grains (other than rice) and grain fractions	★★★★◇	★★★◇	★★★◇
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★★	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g	★★★◇	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★◇	★★★★◇	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★	★★★★	★★★◇
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★	★★★★	★★★★
FFG Cereals - breakfast	Breakfast cereal, mixed grain, with fruit and/or nuts	★★★★	★★★★	★★★◇
FFG Cereals - pasta/flour/grains	Cereal flours and starches	★★★★	★★★★	★★★◇
FFG Cereals - pasta/flour/grains	Cereal flours and starches	★★★◇	★★◇	★★◇
FFG Cereals - pasta/flour/grains	Cereal flours and starches	★★★◇	★★◇	★★◇

AGHE category	AHS 5-digit classification name	13 points	12 points	11 points
FFG Cereals - pasta/flour/grains	Cereal flours and starches	★★★★◇	★★◇	★★◇
FFG Cereals - pasta/flour/grains	Cereal flours and starches	★★★	★★◇	★★◇
FFG Cereals - pasta/flour/grains	Cereal flours and starches	★★★★★	★★★★★	★★★★◇
Dairy Discretionary foods - cream	Cream, reduced fat	★★◇	★★	★★
Discretionary foods - bakery/cake mixes	Sweet breads, buns and scrolls, iced and/or filled	★★★	★★◇	★★◇
Discretionary foods - bakery/cake mixes	Pastry, plain/unfilled, all types	★★★	★★★	★★◇
Discretionary foods - bakery/cake mixes	Savoury pastry products, pies, rolls and envelopes	★★◇	★★	★★
Discretionary foods - bakery/cake mixes	Drop scones, pikelets	★★◇	★★	★★
Discretionary foods - bakery/cake mixes	Fried bread products and garlic breads	★★★	★★◇	★★◇
Discretionary foods - bakery/cake mixes	Pastry, plain/unfilled, all types	★★★	★★★	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★★◇	★★★★◇	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, rye based	★★★★★	★★★★★	★★★★
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★★◇	★★★★◇	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, rye based	★★★★★	★★★★◇	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, rye based	★★★★★	★★★★◇	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★★★	★★★★◇	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★★◇	★★★★◇	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★◇	★★◇	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★◇	★★◇	★★◇
Discretionary foods - biscuits	Savoury biscuits, corn based	★★★	★★◇	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy >1800 kJ per 100 g	★★★	★★◇	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★◇	★★◇	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★◇	★★★★◇	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★★★	★★★★◇	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★★★	★★★★◇	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy >1800 kJ per 100 g	★★★◇	★★★	★★★
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★	★★◇	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★	★★◇	★★◇

AGHE category	AHS 5-digit classification name	13 points	12 points	11 points
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★	★★◇	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★	★★◇	★★◇
Discretionary foods - biscuits	Sweet biscuits, plain with fruit or nuts	★★★★	★★★★	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy ≤1800 kJ per 100 g	★★★★	★★★★	★★★★◇
Discretionary foods - biscuits	Savoury biscuits, rice based (includes rice cakes)	★★◇	★★	★★
Discretionary foods - biscuits	Savoury biscuits, rice based (includes rice cakes)	★★★	★★★	★★◇
Discretionary foods - biscuits	Savoury biscuits, wheat based, plain, energy >1800 kJ per 100 g	★★★★◇	★★★★◇	★★◇
Discretionary foods - dips	Vegetable based dips	★★★	★★	★★
Discretionary foods - dips	Dairy based dips	★★◇	★★	★★
Discretionary foods - dips	Dairy based dips	★★◇	★★	★★
Discretionary foods - dips	Other dips	★★◇	★★	★★
Discretionary foods - dips	Vegetable based dips	★★★★◇	★★★	★★★
Discretionary foods - ice cream	Ice cream, individual bar, stick and cone varieties, fat content 4 - 10 g/100 g	★★◇	★★	★★
Discretionary foods - ice cream	Ice cream, tub varieties, fat content >10 g/100 g	★★◇	★★	★★
Discretionary foods - ice cream	Ice cream, tub varieties, fat content 4 - 10 g/100 g	★★◇	★★	★★
Discretionary foods - ice cream	Ice cream, tub varieties, fat content 4 - 10 g/100 g	★★◇	★★	★★
Discretionary foods - ice cream	Ice cream, tub varieties, fat content 4 - 10 g/100 g	★★◇	★★	★★
Discretionary foods - ice cream	Ice cream, tub varieties, fat content 4 - 10 g/100 g	★★◇	★★	★★
Discretionary foods - ice cream	Ice cream, tub varieties, fat content 4 - 10 g/100 g	★★◇	★★	★★
Discretionary foods - ice cream	Ice cream, tub varieties, fat content 4 - 10 g/100 g	★★◇	★★	★★
Discretionary foods - meals/meal bases	Dry savoury sauces and casserole bases and dry mixes	★★◇	★★	★★
Discretionary foods - meals/meal bases	Dry savoury sauces and casserole bases and dry mixes	★★◇	★★	★★
Discretionary foods - meals/meal bases	Savoury pasta/noodle and sauce dishes, saturated fat ≤5 g/100 g	★★★	★★◇	★★◇
Discretionary foods - meals/meal bases	Dry savoury sauces and casserole bases and dry mixes	★★◇	★★	★★
Discretionary foods - meals/meal bases	Processed meat, commercially sterile (includes canned meats)	★★★	★★	★★
Discretionary foods - miscellaneous	Milk, evaporated or condensed, undiluted	★★★	★★	★★
Discretionary foods - sauces/condiments	Savoury sauces, commercial, simmer style	★★◇	★★	★★



AGHE category	AHS 5-digit classification name	13 points	12 points	11 points
Discretionary foods - sauces/condiments	Dry savoury sauces and casserole bases and dry mixes	★★★	★★	★★
Discretionary foods - snacks	Muesli and cereal style bars, with fruit and/or nuts	★★★★◇	★★★★	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★◇	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★◇	★★★★◇	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, no fruit	★★★★◇	★★★★◇	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★★	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, with fruit and/or nuts	★★★★◇	★★★★	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, with fruit and/or nuts	★★★★◇	★★★★◇	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, no fruit	★★★★◇	★★★★◇	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★★	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★◇	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★★	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★★	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★◇	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, no fruit	★★★★◇	★★★★◇	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, with fruit and/or nuts	★★★★◇	★★★★◇	★★★★
Discretionary foods - snacks	Chocolate-based confectionery with nut fillings or additions	★★★★◇	★★★★◇	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, with fruit and/or nuts	★★★★◇	★★★★	★★★★
Discretionary foods - snacks	Muesli and cereal style bars, no fruit	★★★★★	★★★★★	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★◇	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★★★	★★★★★	★★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, no fruit	★★★★◇	★★★★◇	★★★★◇
Discretionary foods - snacks	Extruded snacks	★★★★◇	★★★★◇	★★★★◇
Discretionary foods - snacks	Potato crisps	★★★★◇	★★★★	★★★★
Discretionary foods - snacks	Potato crisps	★★★★◇	★★★★	★★★★
Discretionary foods - snacks	Potato crisps	★★★★◇	★★★★	★★★★

AGHE category	AHS 5-digit classification name	13 points	12 points	11 points
Discretionary foods - snacks	Potato crisps	★★★◇	★★★	★★★
Discretionary foods - snacks	Savoury biscuits, rice based (includes rice cakes)	★★★◇	★★★◇	★★★
Discretionary foods - snacks	Potato crisps	★★★	★★◇	★★◇
Discretionary foods - snacks	Potato crisps	★★★	★★◇	★★◇
Discretionary foods - snacks	Potato crisps	★★★	★★◇	★★◇
Discretionary foods - snacks	Extruded snacks	★★★◇	★★★◇	★★★
Discretionary foods - snacks	Extruded snacks	★★★◇	★★★	★★★
Discretionary foods - snacks	Extruded snacks	★★★◇	★★★◇	★★★
Discretionary foods - snacks	Popcorn	★★★★	★★★★	★★★◇
Discretionary foods - snacks	Popcorn	★★★★	★★★★	★★★◇
Discretionary foods - snacks	Popcorn	★★★★	★★★★	★★★◇
Discretionary foods - snacks	Popcorn	★★★★	★★★★	★★★◇
Discretionary foods - snacks	Extruded snacks	★★★◇	★★★	★★★
Discretionary foods - snacks	Extruded snacks	★★★◇	★★★◇	★★★
Discretionary foods - snacks	Extruded snacks	★★★◇	★★★	★★★
Discretionary foods - snacks	Muesli and cereal style bars, with fruit and/or nuts	★★★★	★★★◇	★★★◇
Discretionary foods - snacks	Muesli and cereal style bars, with fruit and/or nuts	★★★★	★★★	★★★
Discretionary foods - snacks	Other snacks	★★★◇	★★★◇	★★★
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★◇	★★★	★★★
Discretionary foods - snacks	Muesli and cereal style bars, added coatings or confectionery	★★★◇	★★★	★★★
Protein - meats/fish	Processed delicatessen meat, mammalian	★★★	★★	★★
Protein - meats/fish	Ham	★★★	★★	★★
Protein - meats/fish	Ham	★★★	★★★	★★◇
Protein - meats/fish	Ham	★★★	★★	★★
Protein - meats/fish	Chicken	★★★◇	★★★◇	★★◇
Protein - meats/fish	Chicken	★★★◇	★★★◇	★★◇
Protein - meats/fish	Processed delicatessen meat, poultry	★★★	★★	★★
Protein - meats/fish	Ham	★★★	★★	★★
Protein - meats/fish	Ham	★★★	★★★	★★◇
Protein - meats/fish	Processed meat, commercially sterile (includes canned meats)	★★★	★★	★★
Protein - meats/fish	Lamb and mutton	★★★	★★	★★

AGHE category	AHS 5-digit classification name	13 points	12 points	11 points
Protein - meats/fish	Packed fin fish	★★★◇	★★★◇	★★◇
Protein - meats/fish	Packed fin fish	★★★◇	★★★◇	★★◇
Protein - plant	Meat substitutes	★★★◇	★★★◇	★★◇
Protein - plant	Meat substitutes	★★★◇	★★★◇	★★◇
Protein - plant	Meat substitutes	★★★	★★◇	★★◇
Protein - plant	Meat substitutes	★★★◇	★★◇	★★◇
Protein - plant	Meat substitutes	★★★★	★★★★	★★★
Vegetables - processed	Other fruiting vegetables	★★★★	★★★◇	★★★◇