



**'Green' and 'Amber' foods:
*Analysing the nutritional
content of food and beverage
products registered with
Healthy Kids Association***



**Prepared for the Healthy Kids Association
by
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EXECUTIVE SUMMARY

Schools have been identified as a key setting for health promotion activities. In particular, school canteens provide a unique opportunity to influence the food children eat and to model healthy food choices. Further, in NSW, a government policy position exists regarding which foods should and should not be provided through the school canteen.

The main aim of the not-for-profit, non-government, Sydney-based organisation, the Healthy Kids Association (HKA), is to promote and influence healthy food choices for children, particularly in the school setting. One of the ways in which HKA assists school canteens in promoting healthier food choices is through their product registration scheme, whereby HKA applies their own set of nutrient criteria (Healthy Kids) to register food and beverage products under the categories of *Green*: products that should 'fill the menu', or *Amber*: products from which canteen managers should 'select carefully'. Compared with the 'occasional' nutrient criteria set out in the NSW Government *Fresh Tastes @ School Strategy*, the Healthy Kids (HK) nutrient criteria are stricter and apply to a greater number of food categories and nutrients.

A listing of all registered products is published biannually by HKA, in their Annual and Supplement Buyer's Guide, intended for school canteens across Australia for use in selecting healthier food options to sell in their canteen. As part of their product registration scheme, HKA collects data on the nutritional content of the food and beverage products registered by their Association. These data were analysed and the findings are described in this report.

Specifically, this report describes the nutritional characteristics of food products that are registered for sale in schools across Australia by HKA. It provides comparative profiles of the nutritional characteristics of registered products by key nutrient (e.g. total energy, saturated fat), registration category (*Green* versus *Amber*) and by product sub-category (e.g. milk based beverages or snack foods).

For the analysis, HKA provided nutrient information for registered *Green* and *Amber* products (by product sub-category) of products registered as at October 2009, for the registration period January to December 2009. Key nutrients for each product sub-category were identified by expert opinion and analysed for their distribution within each product sub-category using STATA version 11.0.

The nutrient content of many products, within common food categories, clustered just below the HK nutrient criteria thresholds for total energy and for negative nutrients such as fat, saturated fat,

sodium and sugar. The nutrient content for positive nutrients, such as calcium or fibre, frequently clustered just above the threshold for positive nutrients.

For some product categories however, a wider range in the distribution of nutrients was observed; that is, there was less clustering around the HK nutrient criteria thresholds. This was attributable to the addition of specific ingredients that are naturally higher in certain nutrients, such as skim milk powder which increases the calcium content, or inulin which increases the dietary fibre content.

Small package sizes were found to be common. It is possible that manufacturers favour the manipulation of the package size, as an alternative to product reformulation, to achieve registration when nutrient thresholds are set per serve rather than per 100g. This was evident for some small packaged foods with a high energy density (kJ/g weight). The absence of standard serve sizes makes this difficult to manage. Some product sub-categories may also benefit from additional criteria regarding the percentage of whole food ingredients, such as fruit, vegetables or whole grains, to improve the nutritional quality of foods.

This study provides a reference point for future studies of the school food environment. The transparency of the HKA Registered Product Scheme, particularly the availability of the HK nutrient criteria, makes the scheme an important contributor to the ongoing process of reviewing and appraising such food approval programs.

GLOSSARY OF TERMS

'Amber' foods and beverages	Food and beverage products that meet a specific set of nutritional criteria to be registered with HKA as an <i>'Amber'</i> product
'Green' foods and beverages	Food and beverage products that meet a specific set of nutritional criteria to be registered with HKA as a <i>'Green'</i> product
HK	Healthy Kids
HKA	Healthy Kids Association
NSW	New South Wales
PANORG	Physical Activity Nutrition Obesity Research Group

1 INTRODUCTION

1.1 SCHOOL CANTEENS IN NSW

Schools have been identified as a key setting for health promotion activities. In particular, school canteens provide a unique opportunity to influence the food children eat and to model healthy food choices. The marketing of foods to children within the school setting occurs largely through school canteens, making them a key target for health promotion initiatives. Hence, the modification of the food environment within schools has been suggested as a strategy to address childhood obesity, as school canteens have the potential to influence food choices and energy consumption, not only within schools but also the wider community, due to the symbolism they carry and the potential for a ripple effect into the Australian diet (1). Further, in NSW a government policy position exists regarding which foods should and should not be provided through the school canteen.

School canteens also provide a potential vehicle for putting classroom nutrition messages into practice and a healthy canteen can model affordable, healthy food choices, as well as introduce children and adolescents to new healthy food experiences.

School canteens have the potential to provide a large proportion of a child's daily nutritional intake and to influence diet quality, particularly if both lunch and snacks are purchased regularly from the school canteen. Secondary analysis of the 1995 National Nutrition Survey data, prior to the establishment of the Healthy Kids Association (HKA) and the introduction of the *Fresh Tastes @ School Strategy* (2), showed school students who obtained their foods from the school canteen consumed approximately 200kJ more each day, compared with non-canteen users (3). More recent data from NSW secondary schools suggest that approximately 65-70% of students (Years 6, 8 and 9) reported purchasing their lunch from the school canteen one or more times per week (4). In the Hunter New England area, researchers found 55% of primary school students (Years 1-6) purchased 'any' food or drink from the school canteen at least once per week (5).

1.2 THE HEALTHY KIDS ASSOCIATION

In NSW, HKA is well placed to play a significant role in influencing the school food environment through their Healthy Kids Registered Product program, which aims to improve the availability of, and promote, healthier food choices within school canteens across Australia.

HKA is a not-for-profit, non-government, health promotion organisation based in Sydney, Australia. HKA operates according to the principles and values articulated in the Ottawa Charter for Health Promotion and the guiding principles for Health Promoting Schools (6). HKA provides an important source of advice and information on healthy food choices for around 3,000 schools in NSW. Resolutions of the 2002 NSW Obesity Summit included ensuring that ‘...no canteens sell high fat or high sugar foods or drinks through over-the-counter sales...’ (7). The aim of HKA is to promote and influence healthy food choices for children and one of its primary objectives is to:

“Increase the availability and sale of foods and beverages in school canteens that are consistent with the Australian Dietary Guidelines for Children and Adolescents.”

As part of its role, HKA supports and advises school canteens on the NSW state government *Fresh Tastes @ School* healthy school canteen strategy, which is mandatory for government schools in NSW (2). It aims to promote healthy food to students through increasing the supply of healthy, fresh, unprocessed foods in schools. *Fresh Tastes* is based on the food spectrum of *Green*, *Amber* and *Red*, where *Green* (most nutritious) items are considered everyday foods. *Amber* items are to be selected carefully as, while they may provide valuable nutrition, they may also be sources of negative nutrients such as saturated fat, added sugar or salt, and may provide excess energy if served in large portion sizes. *Red* products should be selected only occasionally (e.g. special occasions) as they have little nutritional value and are high in saturated fat, added sugars, or salt and provide excess energy to children. These similar minimum standards set for ‘occasional’ foods are also used in all other state-wide school canteen strategies, including *Go For Your Life* (VIC), *The Right Bite* (SA) and *Smart Choice* (QLD). Recently, new National Healthy School Canteen Guidelines have been developed and are due for public release imminently.

HKA also runs a product registration scheme, which assesses and registers products that meet the Healthy Kids (HK) nutrient criteria. Through this process, food manufacturers voluntarily submit nutrition information panels for their products, which are then assessed by HKA against their nutrient criteria as *Green* or *Amber* foods. *Green* foods are those which should ‘fill the menu’ and should be promoted and encouraged as they are a good source of essential nutrients, help avoid excess energy consumption and are relatively low in negative nutrients such as saturated fat, sodium or added sugars. *Amber* foods should be selected carefully and not dominate the menu, nor should large serving sizes be offered, as while they provide valuable nutrition, they are also higher in negative nutrients. Foods that do not meet the HK nutrient criteria are ineligible for registration. Thresholds set by HKA in their nutrient criteria are stricter, and apply to a greater number of nutrients and food

categories, compared with the 'occasional' nutrient criteria set out in the NSW *Fresh Tastes @ School Strategy* for classifying *Red* products.

1.3 THE SCHOOL CANTEEN SETTING

School canteens are food service facilities that can vary from a volunteer-run food service that is open once a week and sells foods and beverages to a small number of students, to a fully staffed commercial kitchen that provides daily meals (breakfast, recess and lunch) to hundreds of students and has the facilities and staff required to cook and serve freshly prepared meals. Further, some canteens are seen as an avenue for the provision of a "treat" by parents and the school community, while other canteens are considered an integral part of a health promoting school. Recently, many canteens have been outsourced by schools and leased to business operators that in some cases run more than one school canteen.

Unique challenges for school canteens include limited food preparation and cooking facilities, a growing lack of volunteers, the level of staff training in food, nutrition and cooking, the need to run a profitable business, and the varying levels of community support. Further, school canteens are generally expected to provide items at student-friendly prices. It is important to acknowledge these limitations and difficulties experienced by school canteens when assessing the types of foods served by school canteens to children.

1.4 AIMS OF THIS STUDY

This study was conducted by PANORG for HKA, to examine the distribution of food products registered as *Green* or *Amber* for different food and beverage product categories, and to analyse the distribution of key nutrients with reference to the HKA nutrient criteria thresholds within each product sub-category (e.g. milk based beverages or snack foods).

2 METHODS

Details on foods registered as *Green* or *Amber* as at October 2009, for the registration period January to December 2009, were obtained from HKA. The following information was provided for each registered product:

- buyers guide categorisation (*Green* versus *Amber* according to the HK nutrient criteria)
- main product category
- product sub-category
- product name
- flavour/variety
- serving size ¹
- Nutrient content reported per serve and, depending on the nutrient in question, per 100g/100mL, 100mg or 100kJ.

Nutrient information provided included the amount of calcium, carbohydrate, energy, total fat, saturated fat, fibre, protein, sodium, and sugar, as well as detailed information on specific ingredients, such as '*no added confectionery*', the percentage whole fruit or vegetable content for juices and the percentage whole milk content for milk based beverages.

Data were cleaned to ensure the accuracy of nutrient values reported per serve. During this process nutrient values were also cross checked by the authors (both research dietitians) for sensibility of nutrient values reported for different food categories. Data analysis was conducted in May 2010 using STATA version 11.0. Data provided by HKA were already categorised into seven main product categories: 'Breakfast cereals', 'Drinks', 'Frozen treats', 'Hot food and ingredients', 'Ready to eat meals – chilled', 'Sandwich, burger, wrap and roll ingredients', and 'Snacks' (see Table 1). Under each main product category there are a number of product sub-categories, for example under 'Snacks' some of the sub-categories are: 'Cakes, muffins and pastries', 'Snack food bars' or 'Biscuits: Sweet' (Table 1). The frequency of products registered as *Green* or *Amber* for each main product category and product sub-category was determined.

An important consideration when reviewing the nutritional content of foods registered with HKA was the nutrient thresholds applied to qualify a food for registration. These nutrient cut points vary for each specific product sub-category. For some product sub-categories, a *Green* or *Amber* category may

¹ Serving size was reported as the serve that would be consumed by a child when purchased from the school canteen; that is, for a 2L juice bottle the reported serving size was 200mL which is the size offered for sale.

not exist. For example, fruit juice may only be registered as *Amber* as no *Green* category exists, while plain water or frozen vegetables may only be registered as *Green*. In the results, if the *Green* or *Amber* category does not exist for a product sub-category, this is indicated by 'N/A'.

The key nutrients used to define the nutrient criteria include 'negative' nutrients such as saturated fat, sodium and total sugars, and 'positive' nutrients such as calcium and dietary fibre. Cut points for energy content (expressed as either kilojoules per 100g or kilojoules per serve) are also applied as part of the registration process.

Key nutrients for each product sub-category were identified by expert opinion. For example, the key nutrients of interest for milk-based beverages were: total fat, saturated fat and dietary calcium (see Appendix 1 for key nutrients by product sub-category). The median and range were then calculated for the defined key nutrients within each product sub-category, with reference to nutrient thresholds specified by the HKA nutrient criteria (see Appendix 3).

To further explore the data, specific product sub-categories that are popular with Australian primary school children – '*Foods in Focus*' – were identified, based on peer-reviewed literature and, to a lesser extent, on selective sales data and anecdotal evidence. The rationale for the selection of these product categories is provided in Appendix 2. These food categories potentially represent foods of public health nutritional importance and, hence, formed an important focus of this research. Those products clustering below or above the HKA criteria thresholds were described in terms of their nutritional composition. Within the '*Foods in Focus*' categories, the nutrient profile of selected products – '*Spotlight Products*' – was highlighted based on:

- Pronounced differences in nutritional composition, i.e. the minimum or maximum values within the range of nutrient values observed for the product category; or
- Pronounced differences in serving size with respect to the product category.

3 RESULTS

3.1 SUMMARY OF FOOD CATEGORIES EXAMINED IN THIS STUDY

Table 1 presents the main product categories and their respective product sub-categories, derived from data provided by HKA.

Table 1: Main product categories (header row) with respective product sub-categories beneath; product sub-categories italicised and bolded indicate ‘Foods in Focus’

Breakfast cereals	Drinks	Frozen treats	Hot foods and ingredients	Ready-to-eat meals – chilled	Sandwich, Burger, Wrap and Roll Ingredients	Snacks
Breakfast cereals	Juice: Fruit and Vegetable Juice: Fruit only Juice: Vegetable only Milk and Soy Beverages: Flavoured Milk and Soy Beverages: Unflavoured Milk Based Beverages Waters: Plain Waters: Sweetened	Fruit: Frozen Juice Ice creams and Milk-based Ice Confections	Pasta sauces and cooking sauces Pasta/rice/ noodle products: plain and ready-to-eat Patties, Burgers and Rissoles: Coated and/or crumbed Patties, Burgers, Rissoles and Omelettes: non-coated/ crumbed Pies, pasties, sausage rolls and savoury pastries Pizza style products Soups Vegetables: Frozen Vegetables: Frozen oven-baked potato products Vegetables: Mashed	Pre-prepared salads: noodles/ pasta/rice	Breads and bread alternatives Fillings/ toppings: Cheese – hard and semisoft Fillings/ toppings: meats – poultry Fillings/ toppings: meats – sandwich and ham Frankfurts, sausages, hot dogs Processed tuna	Biscuits: sweet Buns and scones: Savoury; Sweet Cakes, muffins and pastries Crumpets, pikelets, and pancakes Dairy and soy: Indulgent desserts; Snacks & yoghurts (plain/ flavoured/ drinking) Savoury dry snack foods: popcorn/ chips/ soy/ corn Fruit: Canned, tubs, sachets Fruit: Dried, leather, bars Snack food bars

3.2 DESCRIPTIVE STATISTICS OF REGISTERED FOOD PRODUCTS

As of October 2009, HKA had 855 registered products, of which 35% (n=297) were registered as *Green* and 65% (n=558) as *Amber*. Table 2 presents the number and proportion of *Green* and *Amber* registered products for each main product category.

Table 2: Number and proportion of registered *Green* and *Amber* foods, by main product category

Main Product Category	Green N (%)	Amber N (%)	Total N (%)
Breakfast cereals	49 (60.5)	32 (39.5)	81 (100)
Drinks	75 (31.1)	166 (68.9)	241 (100)
Frozen treats	N/A	88 (100)	88 (100)
Hot Foods and Ingredients	72 (34.4)	137 (65.6)	209 (100)
Ready to Eat Meals - Chilled	1 (16.7)	5 (83.3)	6 (100)
Sandwich, Burger, Wrap and Roll Ingredients	41 (48.2)	44 (51.8)	85 (100)
Snacks	59 (40.7)	86 (59.3)	145 (100)

NB: N/A means category does not apply for that product sub-category.

Product frequency was further analysed by product sub-category. Tables 3 to 9 give the number and proportion of foods registered as *Green* or *Amber*, by each product sub-category within each main product category. For example, the main product category ‘Drinks’ contains eight product sub-categories of juices, milks and waters which may be registered as *Green* or *Amber* depending on their nutritional composition. Of those product sub-categories that could register foods as *Green* or *Amber*, some were predominantly *Green* (e.g. pasta/rice/noodle products, milk and soy beverages, canned and dried fruit and yoghurt plain/flavoured/drinking), while other sub-categories contained mostly *Amber* foods (e.g. sweet and savoury buns/scones, crumpets/pikelets/pancakes, and frozen oven-baked potato products). Note, the proportion of *Green* and *Amber* products in each main product category is influenced by the product sub-categories it comprises, some of which cannot be registered as *Green*, or cannot be registered as *Amber*.

Table 3: Number and proportion of Green and Amber registered products: Breakfast cereals

Main Category: Breakfast cereals	
Green N (%)	49 (60)
Amber N (%)	32 (40)
TOTAL N (%)	81 (100)

Table 4: Number and proportion of Green and Amber registered products: Drinks

Main Category: Drinks									
Product sub-categories	Juice: Fruit and Vegetable	Juice: Fruit only	Juice: Vegetable only	Milk and Soy Beverages: Flavoured	Milk and Soy Beverages: Unflavoured	Milk Based Beverages	Waters: Plain	Waters: Sweetened	TOTAL
Green N (%)	N/A	N/A	1 (50)	46 (54)	15 (56)	N/A	13 (100)	N/A	75 (31)
Amber N (%)	1 (100)	98 (100)	1 (50)	39 (46)	12 (44)	5 (100)	N/A	10 (100)	166 (69)
TOTAL N (%)	1 (100)	98 (100)	2 (100)	85 (100)	27 (100)	5 (100)	13 (100)	10 (100)	241 (100)

Table 5. Number and proportion of Green and Amber registered products: Frozen treats

Main Category: Frozen treats			
Product sub-categories	Fruit: Frozen Juice	Ice creams and Milk-based Ice Confections	TOTAL
Green N (%)	N/A	N/A	N/A
Amber N (%)	50 (100)	38 (100)	88 (100)
TOTAL N (%)	50 (100)	38 (100)	88 (100)

Table 6. Number and proportion of Green and Amber registered products: Hot Foods and Ingredients

Main Category: Hot Foods and Ingredients												
Product sub-categories	Pasta Sauces and Cooking Sauces	Pasta/Rice/ Noodle Products: Plain Ready to Eat		Patties, Burgers and Rissoles: Coated and/or Crumbed	Patties, Burgers, Rissoles and Omelettes: Non Coated/ Crumbed	Pies, Pasties, Sausage Rolls and Savoury Pastries	Pizza-style Products	Soups	Frozen	Vegetables Frozen oven-baked potato products	Mashed	TOTAL
Green N (%)	3 (43)	1 (100)	28 (67)	N/A	3 (50)	N/A	N/A	7 (44)	30 (100)	0 (0)	0 (0)	72 (34)
Amber N (%)	4 (57)	0 (0)	14 (33)	40 (100)	3 (50)	45 (100)	13 (100)	9 (56)	N/A	8 (100)	1 (100)	137 (66)
TOTAL N (%)	7 (100)	1 (100)	42 (100)	40 (100)	6 (100)	45 (100)	13 (100)	16 (100)	30 (100)	8 (100)	1 (100)	209 (100)

Table 7. Number and proportion of Green and Amber registered products: Ready to Eat Meals – Chilled

Main Category: Ready to Eat Meals - Chilled	
Product sub-categories	Pre-Prepared Salads: Noodle/Pasta/Rice
Green N (%)	1 (17)
Amber N (%)	5 (83)
TOTAL N (%)	6 (100)

Table 8. Number and proportion of Green and Amber registered products: Sandwich, Burger, Wrap and Roll Ingredients

Main Category: Sandwich, Burger, Wrap and Roll Ingredients								
Product sub-categories	Breads and Bread Alternatives	Fillings/Toppings - Cheese: Hard and Semisoft	Fillings/Toppings - Legumes: Canned	Fillings/Toppings - Meats - Poultry	Fillings/Toppings - Meats - Sandwich and Ham	Frankfurts, Sausages, Hot Dogs	Processed Tuna	TOTAL
Green N (%)	35 (70)	4 (31)	0 (0)	N/A	N/A	N/A	2 (100)	41 (48)
Amber N (%)	15 (30)	9 (69)	2 (100)	16 (100)	1 (100)	1 (100)	0 (0)	44 (52)
TOTAL N (%)	50 (100)	13 (100)	2 (100)	16 (100)	1 (100)	1 (100)	2 (100)	85 (100)

Table 9. Number and proportion of Green and Amber registered products: Snacks

Main Category: Snacks												
Product sub-categories	Biscuits: Sweet	Buns and Scones: Savoury	Buns and Scones: Sweet	Cakes, Muffins and Pastries	Crumpets, Pikelets and Pancakes	Dairy and Soy: Indulgent Desserts	Dairy and Soy: Snacks and Yoghurts (Plain/ Flavoured/ Drinking)	Savoury Dry Snack Foods: Popcorn/ Chips/ Soy/Corn	Fruit: Canned, Tubs and Sachets	Fruit: Dried, Leather, Bars	Snack Food Bars	TOTAL
Green N (%)	N/A	0 (0)	1 (14)	N/A	0 (0)	N/A	25 (68)	4 (22)	21 (100)	8 (100)	N/A	59 (41)
Amber N (%)	2 (100)	5 (100)	6 (86)	11 (100)	7 (100)	9 (100)	12 (32)	14 (78)	0 (0)	0 (0)	20 (100)	86 (59)
TOTAL N (%)	2 (100)	5 (100)	7 (100)	11 (100)	7 (100)	9 (100)	37 (100)	18 (100)	21 (100)	8 (100)	20 (100)	145 (100)

3.3 QUANTITATIVE ANALYSIS OF KEY NUTRIENTS IN EACH FOOD SUB-CATEGORY

The median and range of values for key nutrients for each product sub-category are presented in Appendix 3, with respect to HKA nutrient criteria thresholds.

3.4 NUTRITIONAL CONTENT OF *FOODS IN FOCUS*

As described in the Methods section, the distribution of key nutrients was analysed for registered *Green* and *Amber* products, within selected popular food sub-categories (*'Foods in Focus'*, see Appendix 2 for selection criteria). Data are presented below according to each of the *'Foods in Focus'* sub-categories. Table 10 shows the distribution of key nutrients from *'Foods in Focus'* registered within the 'Drinks' and 'Frozen Treats' main product categories, including: Juice: Fruit only, Fruit: Frozen Juice, Milk and Soy Beverages: Flavoured, and Ice Creams and Milk-based Ice Confections.

Juice: Fruit only, Fruit: Frozen Juice

All fruit juices (fluid or frozen) are registered as *Amber* products. For fruit juice products (fluid), the distribution of energy per serve ranges between 150kJ to 600kJ (Figure 1). Those products clustering beneath the 600kJ threshold reflect products of 300mL serve size, rather than 200mL or 250mL. For frozen fruit juice products, the distribution of energy per serve of registered products clusters between 350kJ and 550kJ (Figure 2). Similar to fruit juices (fluid), those products with a higher energy content per serve reflected larger serve sizes, although the energy density (kJ/100mL) revealed two products with the highest energy content per millilitre volume (see *Spotlight Product 1*).

SPOTLIGHT PRODUCT 1

Blizzard fruitz 10L contains 12.7g sugars/100mL, and **Whitty's Slush** 2L contains 13.5g sugars/100mL.

While these products had the highest energy density for frozen fruit juices, both products are ≥99% fruit juice, contain no added sugars and are limited to a 200mL serve.

Table 10: Nutritional content of drinks and frozen treats

	Key nutrient *	Total energy kJ/serve		Saturated fat g/100ml		Saturated fat g/serve		Calcium mg/100g		Saturated fat g/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Juice: Fruit only Amber (n= 98)	Median Range Threshold	N/A	468.0 166.0-591.0 ≤ 600								
Fruit: Frozen juice Amber (n = 50)	Median Range Threshold	N/A	445.0 140.0-537.5 ≤ 600								
Milk and Soy Beverages: Flavoured Green (n=46) Amber (n= 39)	Median Range Threshold	660.0 407.0-900.0 ≤900	1260.0 770.0-1515.0 ≤1600	0.9 0.2-1.3 ≤ 1.3	1.1 0.2-2.3 ≤ 2.6			123.0 103.0-285.0 ≥ 100	114.0 103.0-400.0 ≥ 100		
Ice creams and milk-based ice confections Amber (n = 38)	Median Range Threshold	N/A	509.0 237.5-591.0 ≤ 600			N/A 1.5 0.1-2.9 ≤ 3.0				N/A 136.0 80.0-732.0 ≥ 80	

NB: N/A means category does not apply for that product sub-category.

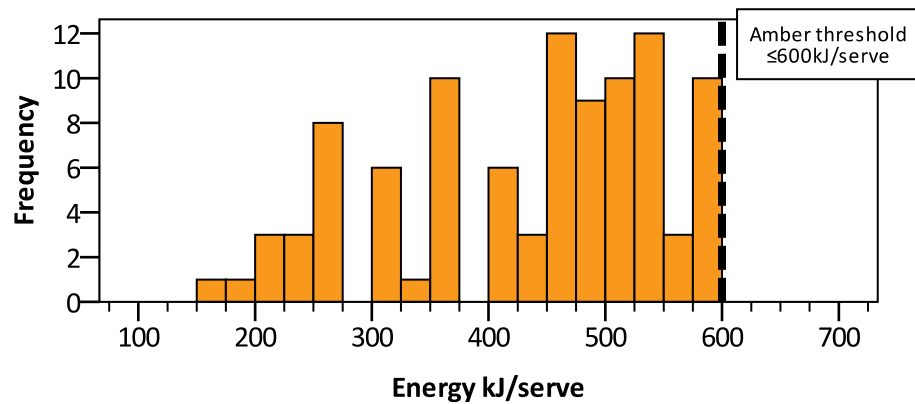


Figure 1 Juice: Fruit only - Energy in kilojoules per serve for 'Amber' products (n = 98)

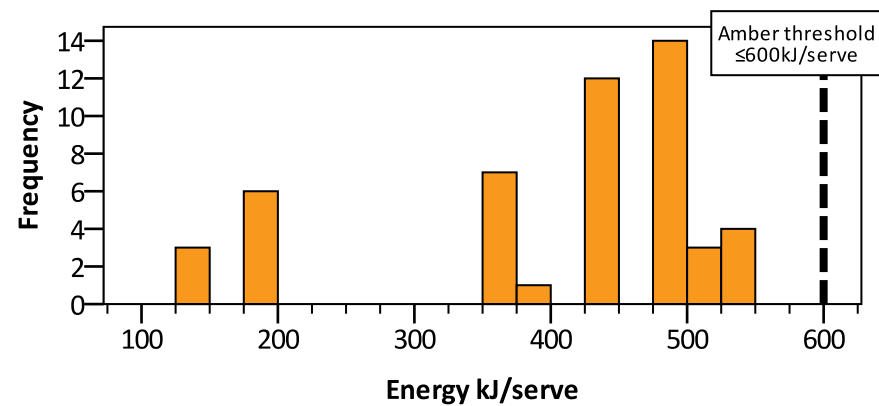


Figure 2 Fruit: Frozen juice - Energy in kilojoules per serve for 'Amber' products (n = 50)

Milk and Soy Beverages: Flavoured

'Milk and Soy beverages: Flavoured' contained items classified as either *Green* or *Amber*, based on their energy, saturated fat and calcium content. Figure 3 illustrates the energy content (kJ/serve) of registered *Green* (Figure 3A) and *Amber* (Figure 3B) products. Comparing *Green* and *Amber* products, the clear separation in energy content per serve reflects differences in serving size. For example, *Green* registered flavoured milk products ranged from a 100mL to 300mL serve size, whereas *Amber* registered products ranged from 200mL to 500mL. This is further illustrated by the comparable saturated fat content per 100mL between *Green* and *Amber* products (Figure 4), although there was a trend toward increasing energy density with decreasing serving size observed among both *Amber* ($r = -0.73, p < 0.01$), and *Green* flavoured milk products ($r = -0.58, p < 0.01$). This suggests that flavoured milk products of a smaller serve size were more energy dense (i.e. the energy content per 100mL was more likely to be higher in smaller serves).

Amber products (Figure 4B) with a higher saturated fat content were the *Oak* brand flavoured milks (300mL or 375mL), ranging from 2.2-2.3g saturated fat/100mL. Products with the lowest saturated fat per 100mL (i.e. 0.2-0.5g) were soy based products (due to the naturally lower saturated fat content of soy) or skimmed dairy milk based beverages (e.g. *Play Moojuice* 250mL), see Figure 5.

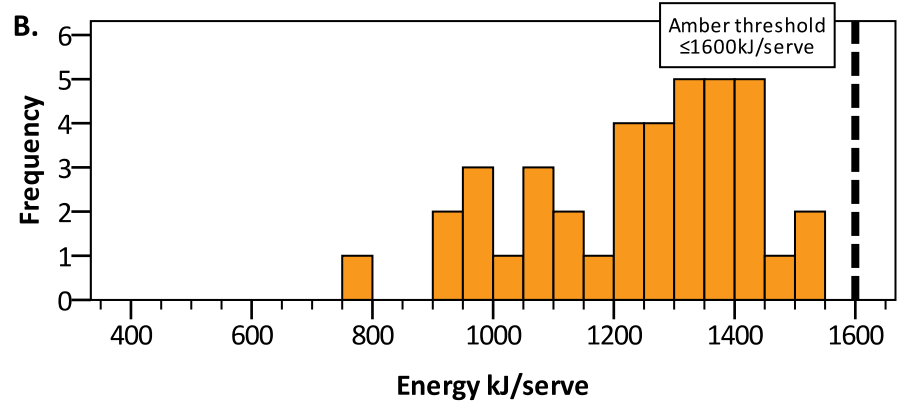
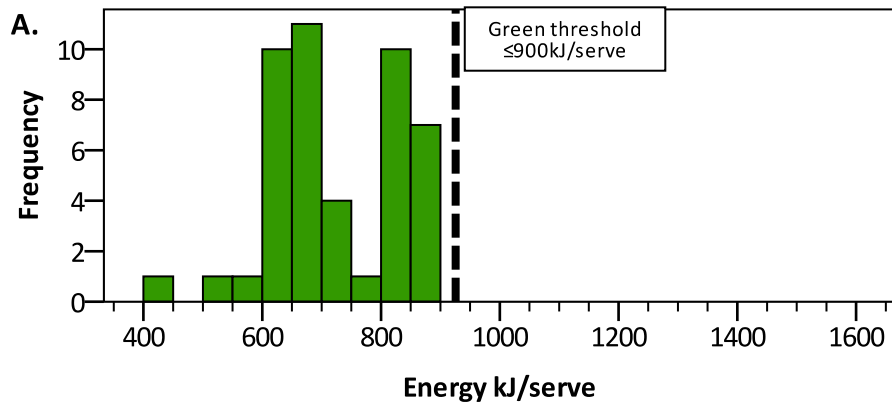


Figure 3 Milk and Soy Beverages: Flavoured – Energy in kilojoules per serve [A. Green registered products; B. Amber registered products]

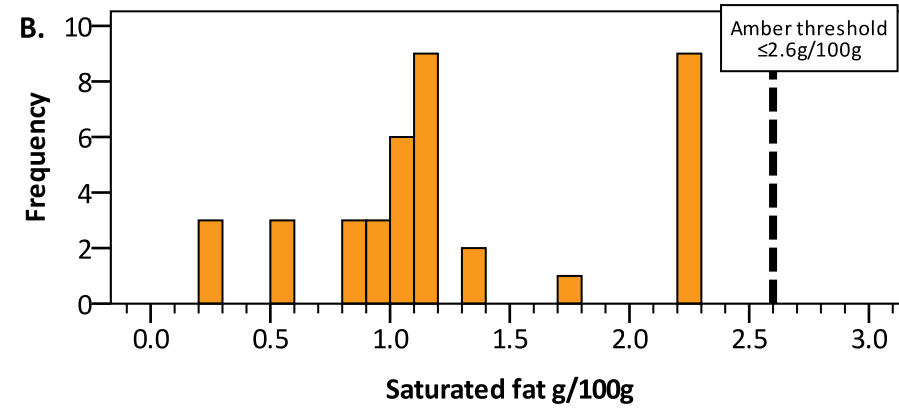
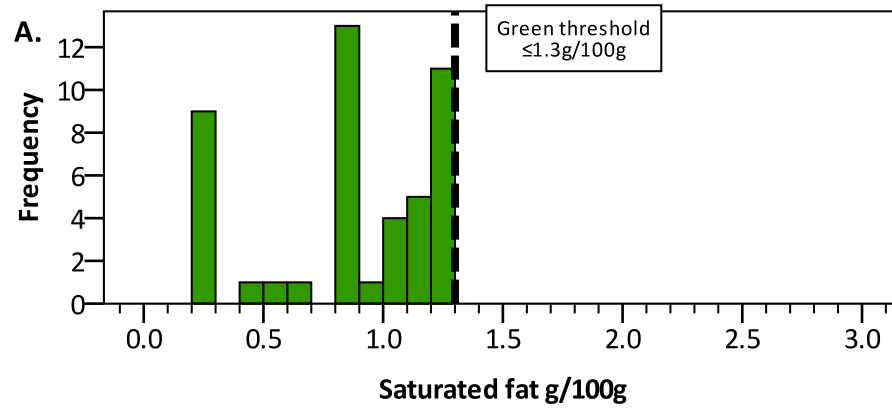


Figure 4 Milk and Soy Beverages: Flavoured – saturated fat in grams per 100g [A. Green registered products; B. Amber registered products]

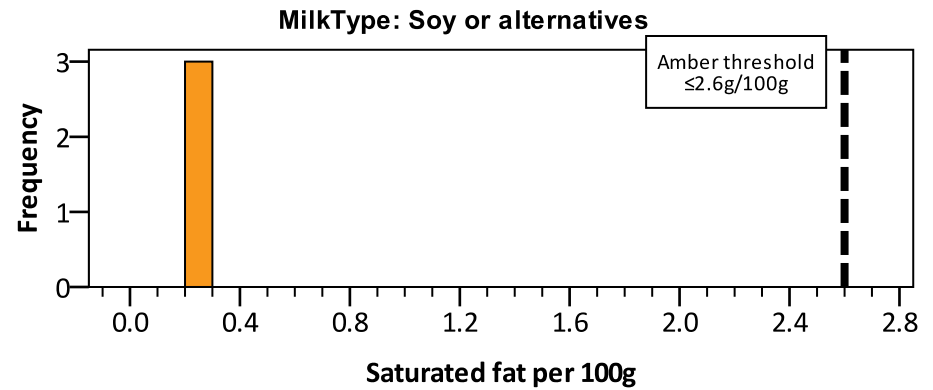
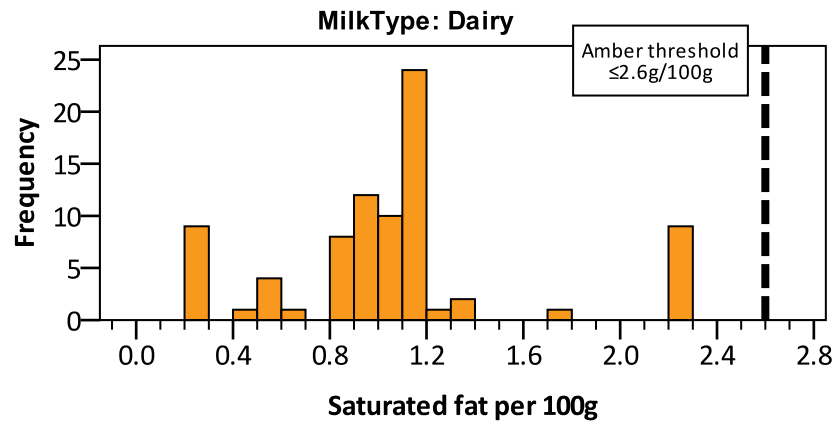


Figure 5 Amber registered Milk and Soy Beverages: Flavoured – saturated fat in grams per 100g [Dairy milks in right figure, Soy or alternative based milks in left figure]

Figure 6 presents the Calcium content in mg per 100mL of Green and Amber registered flavoured milks. Outliers at 285mg/100mL for Green products (Figure 6A) and at 400mg/100mL for Amber products (Figure 6B) were *Carnation evaporated milk* and *Nesquik Plus* (contains milk solids), respectively.

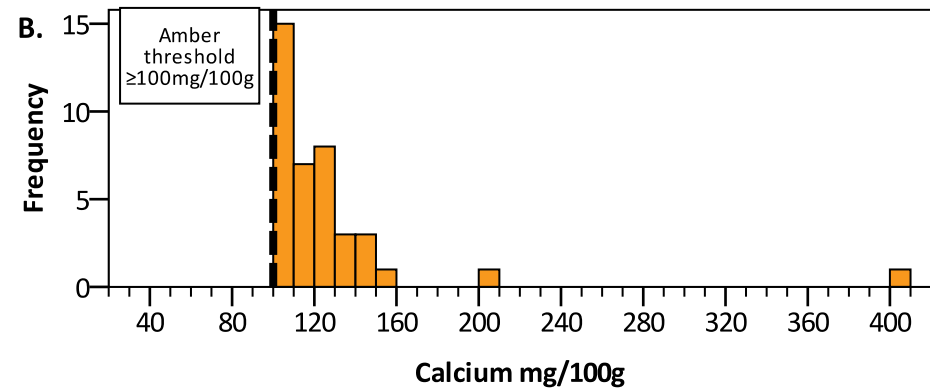
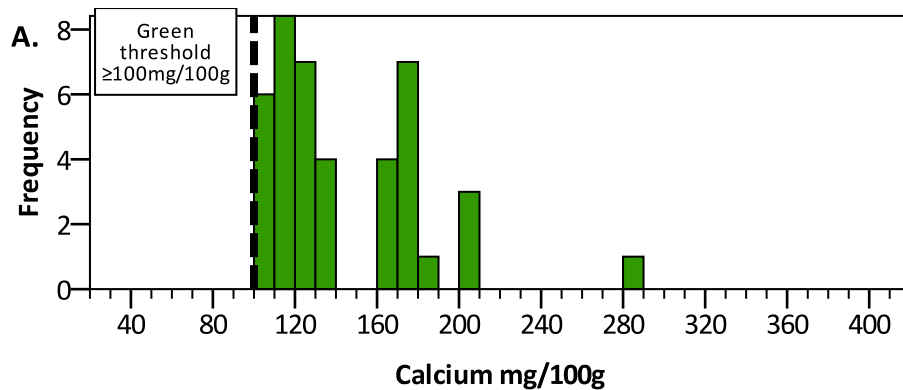


Figure 6 Milk and Soy Beverages: Flavoured – Calcium in milligrams per 100g [A. Green registered products; B. Amber registered products]

Ice Creams and Milk-based Ice Confections

Figures 7 to 9 present the distributions of key nutrients (energy, saturated fat and calcium) for 'Ice Creams and Milk-based Ice Confections'. Given these key nutrients are all reported by serving size, the product distribution reflected differences in serving size, while nutritional composition remained similar. For example, *MILO Miniz (38g)* contained 238kJ/serve (625kJ/100g) whereas *Frozen Fruit 'n Yogurt 100g Apricot* contained 586kJ per serve where a serve is 100g; although those products with higher energy density (kJ/g) were more likely to provide a smaller serving size ($r = -0.55, p < 0.01$), to meet the Amber threshold of 600kJ per serve (see *Spotlight Product 2*). Those products with the lowest saturated fat content were based on skim milk such as *Moosies Milk Freeze* and *Frozen fruit n' yoghurt*, or contained less dairy such as *Boost Bliss bar*, of which half is mixed berry gelato.

SPOTLIGHT PRODUCT 2
Milo Sandwich 54g

This product had the highest be energy density at 1080kJ/100g, and contained 2.3g saturated fat/100g and 81mg Calcium per serve (just above the 80mg threshold). However, the product is offered in an appropriate serving size of only 54g.

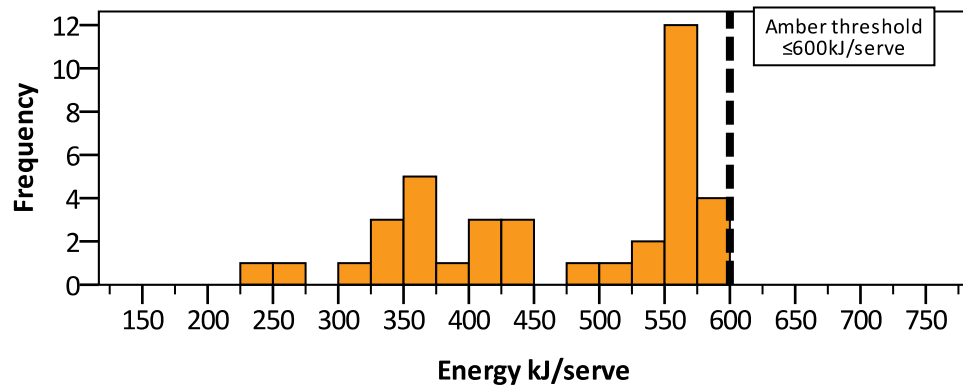


Figure 7 Ice Creams and Milk-based Ice Confections - Energy per serve in grams

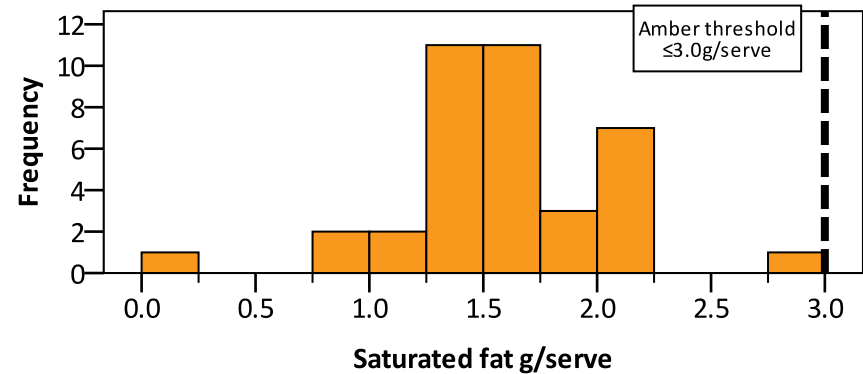


Figure 8 Ice Creams and Milk-based Ice Confections – Saturated fat in grams per serve

Registered 'Ice Cream and Milk-based Ice Confection' products had a range of 80mg to 720mg calcium per serve (Figure 9).

While serving size was a factor, a number of products were identified as particularly high in calcium based on their calcium content per 100g, i.e. *Streets Paddle Pop Moo* (571mg calcium per 100g), *Gelato 100mL* (714mg to 732mg calcium per 100g), *Chocolate Gelato 100mL* (450mg calcium per 100g), and *Vanilla Bean Gelato 100mL* (484mg calcium per 100g). Given dairy milk contains 98 to 200mg calcium per 100mL, these products are higher in calcium per 100mL volume, due to the use of skim milk solids or powders to increase calcium content. Plain low fat vanilla ice-cream was found to have the lowest energy density (kJ/g weight) of products in this category (see *Spotlight Product 3*).

SPOTLIGHT PRODUCT 3
 Compared with other products within this product category, **Light 98% Fat Free Vanilla Ice Cream (100mL)** had the lowest energy density at 258kJper 100g, compared with a mean of 574kJ/100g for this category.

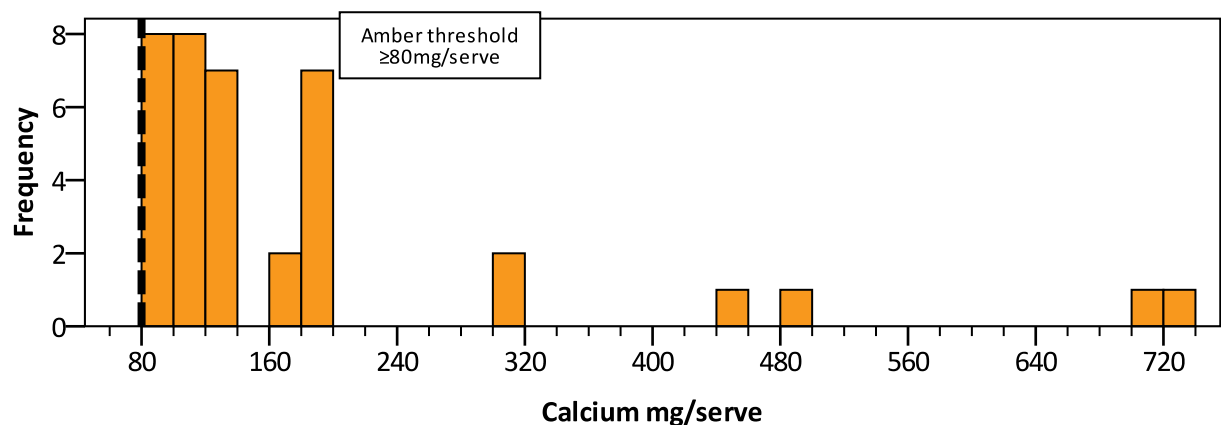


Figure 9 Ice Creams and Milk-based Ice Confections – Calcium in milligrams per serve

Calcium requirements of primary school aged children are between 700 and 1000mg daily, the equivalent of two to four serves of dairy foods (milk, cheese or yoghurt). Hence, these higher calcium foods may assist children in attaining their daily calcium requirements. However, given they are dairy ice confections their average sugar content (18.5g /100mL) is higher than regular cow's milk (approximately 6.2g/100mL), due to the presence of added sugars.

Table 11 presents the distribution of key nutrients from 'Foods in Focus' registered within the 'Hot Food' main product category, including: 'Patties, Burgers and Rissoles: Coated and/or Crumbed', 'Pies, Pasties, Sausage Rolls and Savoury Pastries' and 'Pizza Style Products'.

Table 11. Foods in Focus: Nutritional content of hot foods

	Key nutrient *	Energy density kJ/100g		Total energy kJ/serve		Saturated fat g/100g		Sodium mg/100g	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Patties, burgers and rissoles: coated and/or crumbed Amber (n = 40)	Median	N/A	897.5			N/A	2.5	N/A	394.0
	Range		578.1-994.0				0.9-3.9		165.0-449.0
	Threshold		≤ 1000				≤ 4.0		≤ 450.0
Pies, pasties, sausage rolls and savoury pastries Amber (n = 45)	Median	N/A	855.0	N/A	1262.0	N/A	3.7	N/A	299.0
	Range		579.0-1000.0		324.7-1600.2		1.7-5.0		214.0-350.0
	Threshold		≤ 1000		≤ 1600		≤ 5.0		≤ 350.0
Pizza style products Amber (n = 13)	Median	N/A	922.0	N/A	1180.0	N/A	2.3	N/A	290.0
	Range		772.0-991.0		875.0-1585.6		1.1-3.7		100.0-345.0
	Threshold		≤ 1000		≤ 1600		≤ 4.0		≤ 350.0

NB: N/A means category does not apply for that product sub-category.

Patties, Burgers and Rissoles: Coated and/or Crumbed

This product category included a variety of products based on different ingredients, including fish, chicken, calamari, beef burgers, falafels and patties made with (chicken, vegetables or cheese). These products clustered near the threshold value for energy density, with 45% of 'Patties, Burgers and Rissoles: Coated and/or Crumbed' ranging between 900kJ and 1000kJ per 100g. Energy density was influenced by the degree to which the product was battered or crumbed. For example, *Premium Chicken Breast Nuggets 1kg*, *Crunchy Chicken Breast Royale 3kg*, *Ingham's Aussie Pals Nuggets 1kg*, *Chickadee Chicken & Corn Roll 1kg*, and *Ingham Tempura Breast Nuggets 1kg*, all ranged between 970kJ and 1000kJ per 100g.

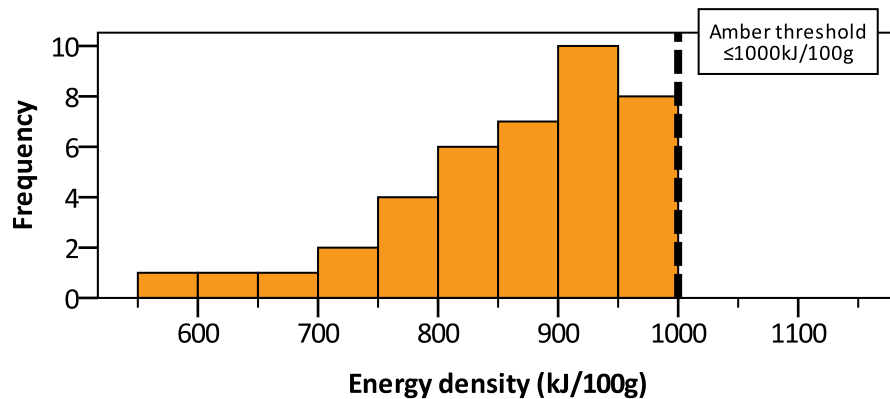


Figure 10 Patties, Burgers and Rissoles: Coated and/or Crumbed – Energy density (kJ per 100g weight)

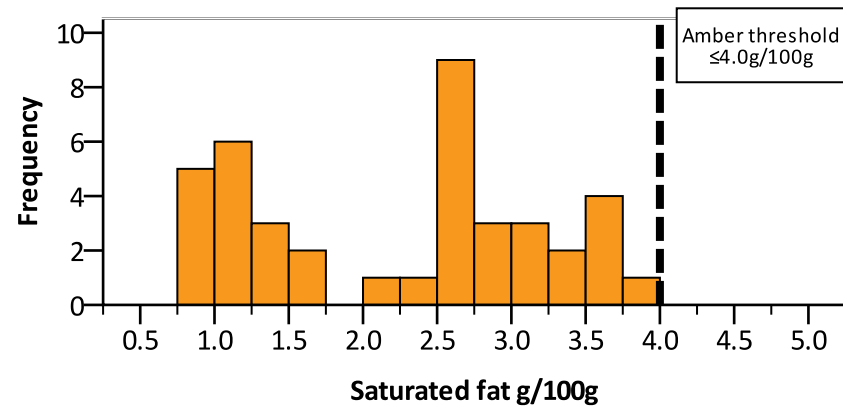


Figure 11 Patties, Burgers and Rissoles: Coated and/or Crumbed – Saturated fat in grams per serve

Conversely, the saturated fat content varied from 0.9g to 3.9g per 100g based on the ingredients used. For example, those products made with fish or chicken breast contained the lowest saturated fat 0.9g to 1.7g. However, those with the highest saturated fat (>3.0g/100g) were made with processed chicken (e.g. chicken nuggets or chicken drummies), and were all battered or crumbed. The *I&J Burger 100g x 30*, made from spinach and ricotta, also fell within this higher range.

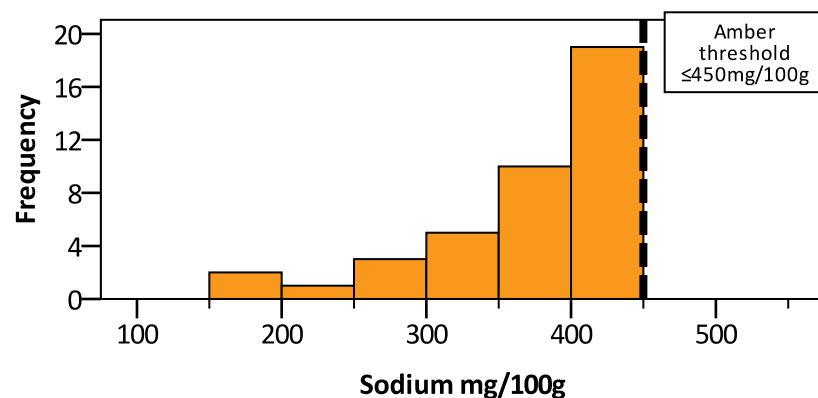


Figure 12 Patties, Burgers and Rissoles: Coated and/or Crumbed – Sodium in milligrams per 100g

Approximately half of products registered in this product category (48%) ranged between 400mg to 450mg sodium per 100g, clustering just beneath the HKA threshold of 450mg (Figure 12). These products were mainly made from chicken (84%). Those that were highest in sodium per 100g included *Chicken Breast Crackles 1kg* (441mg), *Chickadee Classic Crumbed Chicken Tenderloins 1kg x 5* (442mg), *Spinach and Ricotta I&J Burger 100g x 30* (443mg), *I&J Savoury Fish Cakes 100g x 40* (443mg), *Chickadee Chicken & Corn Roll 1kg* (448mg) and *Ingham Tempura Breast Nuggets 1kg* (449mg).

Pies, pasties, sausage rolls and savoury pastries

This product category represents a diverse range of products ranging in serving size from 43g for *Pattie's light party pie* to 275g for a *Village Premium pie*. Fillings included one or more of beef, chicken, vegetables or cheese. Hence, Figures 13 to 16, which present the product distribution by key nutrients for this product category, illustrate the wide ranges in nutritional composition of these foods. For example, the energy per serve for this food category ranges from 220kJ to 1600kJ (Figure 15). The majority of these products (80%) were clustered immediately below the energy density threshold of 1000kJ per 100g, between 800kJ and 1000kJ per 100g. Those products of a lower energy density (kJ/100g) included those incorporating more vegetables, e.g. *Country chicken and vegetable pie 185g* and *Good Eating Potato Top Pie with Tomato Sauce 180g*, or were reduced fat versions of the regular product either through using leaner meats or reduced fat pastry.

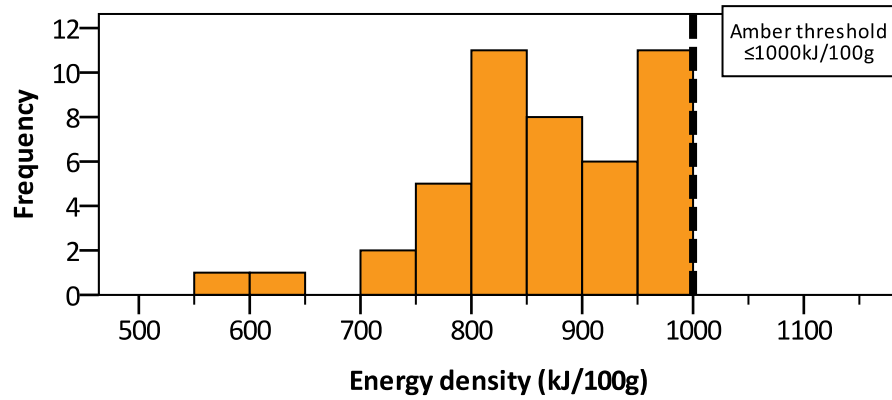


Figure 13 Pies, pasties, sausage rolls and savoury pastries – Energy density in kilojoules per 100g

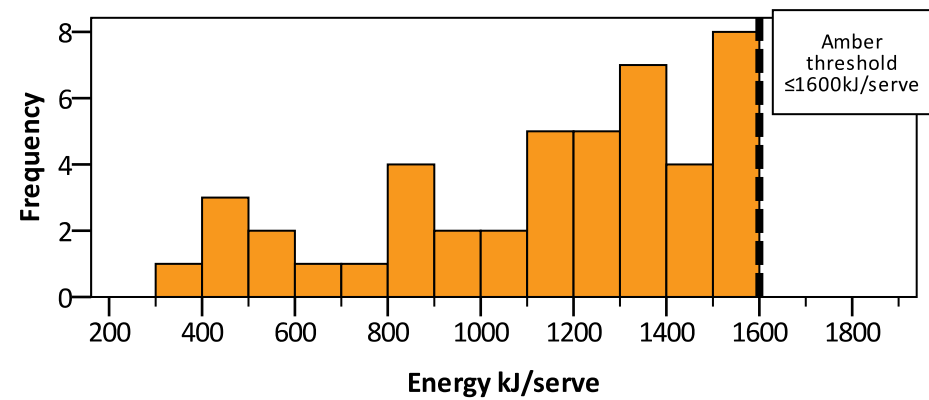


Figure 14 Pies, pasties, sausage rolls and savoury pastries – Energy in kilojoules per serve

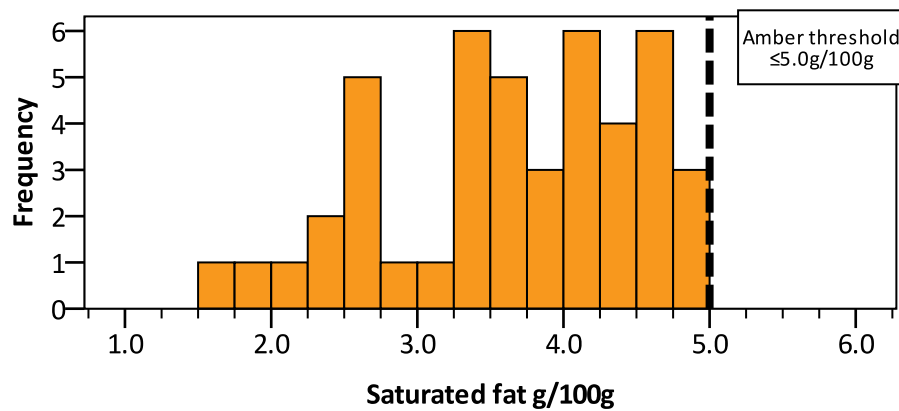


Figure 15 Pies, pasties, sausage rolls and savoury pastries – Saturated fat in grams per 100g

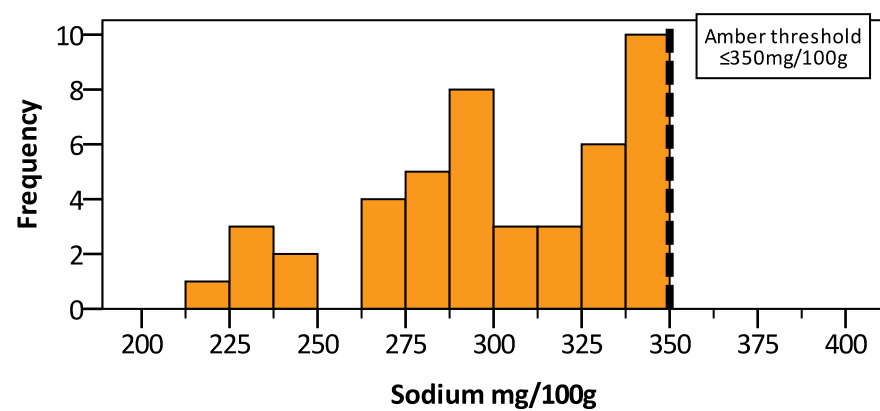


Figure 16 Pies, pasties, sausage rolls and savoury pastries – Sodium in milligrams per 100g

SPOTLIGHT PRODUCT 4

Village Premium, Light lunch and Light snack pies all contain $\leq 2.5\text{g}$ saturated fat per 100g. This translates to 9-11% of total energy from saturated fats. While these products had the highest sodium ranging from 300-350mg/100g (Figure 12), this is not considered high for this type of food product.

The saturated fat content varied by the type of ingredients used, for example, the *Four 'n Twenty Traveller Pie 180g* containing chicken and vegetables contained 3.4g saturated fat per 100g, whereas the *Better Bite Junior Snack Pie 90g* made on beef mince contained 5.0g saturated fat per 100g. However, it is important to recognise that per serve these products contained 7.0g and 4.5g saturated fat, respectively. As anticipated, the saturated fat content was lower in reduced fat products such as *Sportsman's Lean Sausage Roll* (2.6g per 100g) or *Village Lite Lunch Pie* (2.3g per 100g) (see *Spotlight Product 4*).

Figure 16 illustrates the narrow range in sodium content per 100g (214mg to 350mg per 100g weight). Approximately half of products registered in this category (49%) were within 300mg to 350mg sodium per 100g, i.e. immediately below the *Amber* threshold of 350mg sodium per 100g. Those products in the lowest range of sodium per 100g (214mg to 241mg per 100g) included the *Lean Beef Pie 175g* (228mg), *Reduced Fat Sausage Roll 120g* (230mg), *Better Bite Pie 180g* (232mg), *Four'n Twenty Traveller Pie 160g* (240mg), *Patties Lite Party Pies 43g x 12* (241mg) and *Beef & Vege Pastie 195g* (214mg; see *Spotlight Product 5*).

SPOTLIGHT PRODUCT 5

Beef & Vege Pastie 195g
Per 100g weight this product is lower in Sodium at 214mg and moderate in saturated fat at 3.3g (15% total energy), compared with other products registered in this category. By including criteria for the percentage vegetable content, this product sub-category would ensure adequate vegetables are included in these products.

Pizza style products

Similar to pies, pasties, sausage rolls and savoury pastries, the energy density (kJ/100g) of pizza-style products varied, based on the types of ingredients used (Figure 17). For example, products within the lower range of energy density (750kJ to 800kJ per 100g) included vegetables such as *Rapperz Calzone Vegetarian Pizza* and *Murphy's Hot Bites* (containing mince, potato and cheese). Those towards the higher range of energy density (970kJ to 991kJ per 100g) included meats and cheeses such as *Cheese and Bacon Pizza Singles 100g* and *Margarita Pizza Slab 160g*.

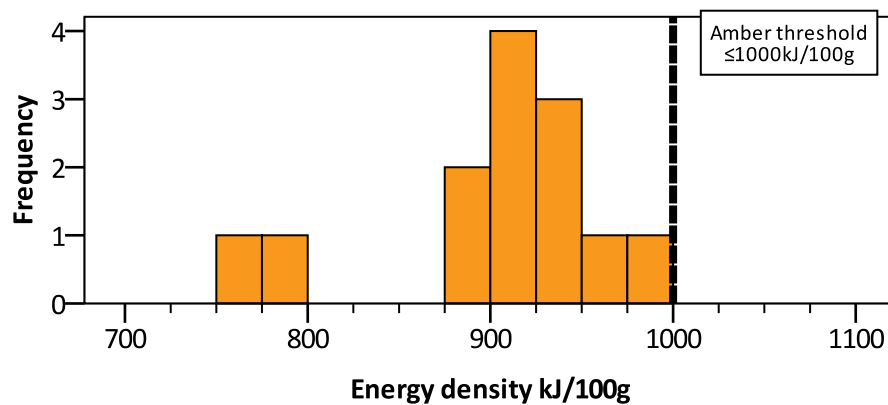


Figure 17 Pizza style products – Energy density in kilojoules per 100g

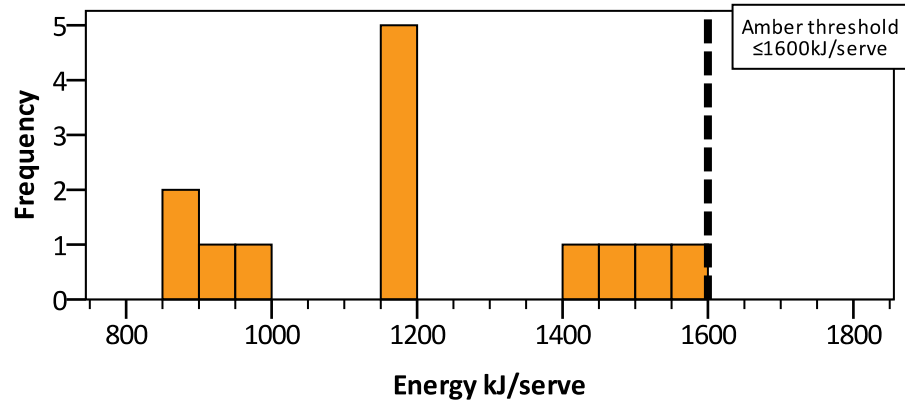


Figure 18 Pizza style products – Energy content in kilojoules per serve

The saturated fat content was dependent on the manufacturer and, again, the ingredients used. For example, *Pizza Singles* contained 3.0g to 3.7g saturated fat per 100g (representing the upper range as illustrated in Figure 18), whereas *Chickadee Roundas* and *Hot bites* products contained 1.8g to 1.9g, and 1.9g to 2.2g saturated fat per 100g respectively. Products with fruit (such as pineapple) or vegetables were, in some cases, lower in saturated fat, compared with those based on meats or cheeses, e.g. *Rapperz Calzone Vegetarian Pizza 150g* (1.1g saturated fat per 100g), or *Cheese and Bacon Pizza Singles 100g* (3.7g saturated fat per 100g).

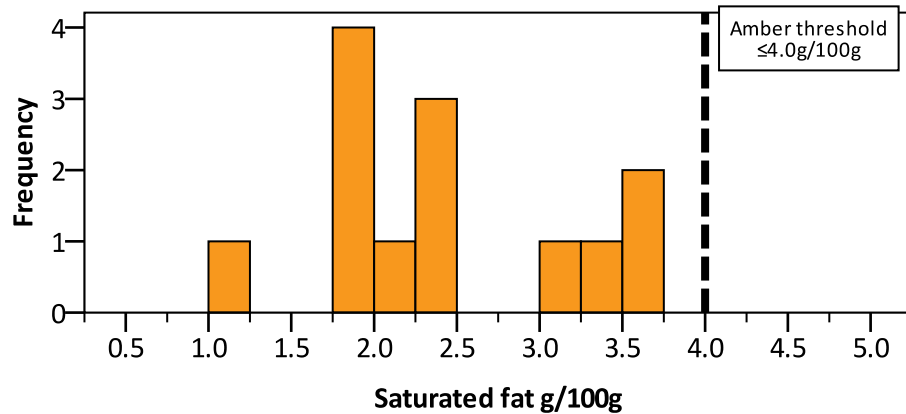


Figure 19 Pizza style products – Saturated fat in grams per 100g

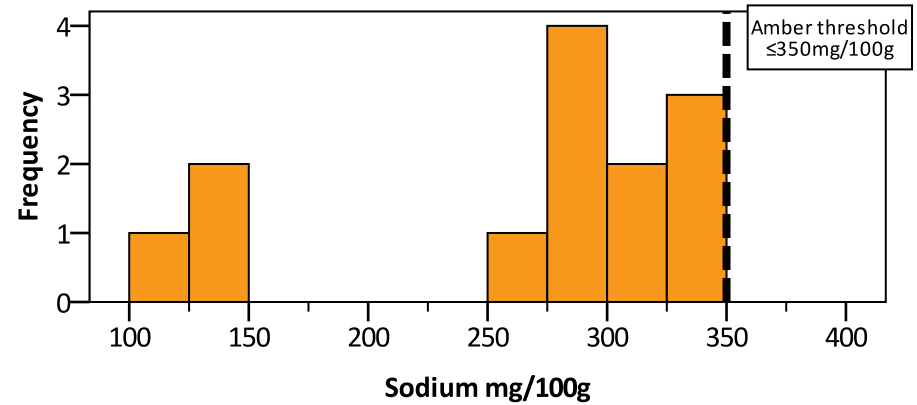


Figure 20 Pizza style products – Sodium in milligrams per 100g

Pizza style products were divided into those with either a moderate sodium content (250mg to 350mg per 100g) or low sodium content (100mg to 150mg). Those products towards the lower range of sodium (100mg to 150mg per 100g; see Figure 20) included the Pizza Slab 160g products. The nutritional composition of these Pizza Slab products, however, varied by the toppings used, e.g. Margarita (per 100g: 991kJ, 3.6g saturated fat and 100mg sodium), Hawaiian (per 100g: 948kJ, 2.3g saturated fat and 125mg sodium) and Supreme (per 100g: 922kJ, 1.8g saturated fat and 130mg sodium). Products with the higher levels of sodium (320mg to 350mg per 100g) included those containing bacon (Egg and bacon Chickadee Roundas 130g or Cheese and bacon Pizza Singles 100g), and Rapperz Calzone Hawaiian Pizza products.

Fillings and Toppings: Meats – Poultry

Table 12 shows the distribution of key nutrients from ‘Foods in Focus’ registered within the ‘Sandwich, Burger, Wrap and Roll Ingredients’ main product category, including: ‘Fillings and Toppings: Meats – Poultry’.

Table 12 *In focus: Nutritional content of Fillings and Toppings: Meats – Poultry*

	Key nutrient *	Saturated fat g/100g	Sodium mg/100g
	Nutrient criteria	Amber	Amber
Fillings/Toppings: Meats, Poultry Amber (n = 16)	Median	1.0	638.0
	Range	0.1-2.1	415.0-686.0
	Threshold	≤ 2.5	≤ 700.0

The saturated fat content of chicken and turkey breast per 100g is approximately 0.5g to 0.9g (8). Exactly half of registered poultry products contained less than 1.0g saturated fat per 100g (Figure 21). The majority of these products (63%) were turkey breast, with the remaining being chicken breast. Most poultry products (69%) were within the upper range for sodium (600mg to 700mg), which is just below the Healthy Kids threshold of ≤700mg.

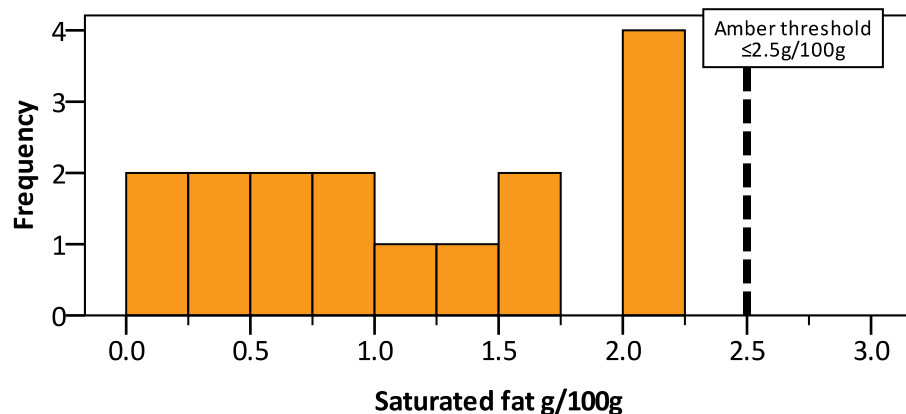


Figure 21 Fillings/Toppings: Meats, Poultry - Saturated fat in grams per 100g

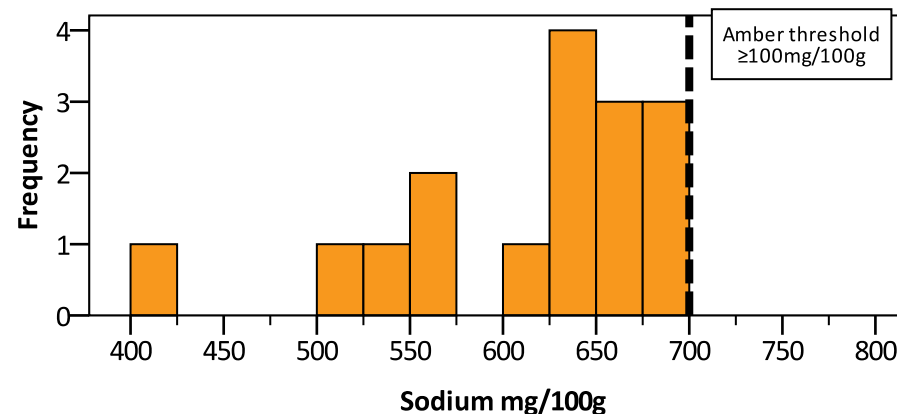


Figure 22 Fillings/Toppings: Meats, Poultry - Sodium in milligrams per 100g

Those products containing the highest amount of sodium per 100g (650mg to 700mg) were roasted poultry products, including *Oven Roasted Chicken Meat 1kg* (diced skinless, sliced, unsliced), *Chickadee Short Sliced Roast Chicken Meat 1kg*, *Cooked & Diced Chicken Breast 1kg* and *Turkey Breast 1.95kg rolled roast style*. Those products in the range of 500mg to 575mg of sodium per 100g included *Aldinga Smoked Turkey Breast Roll 2.4kg*, *Royale Turkey Breast Fillet 1.95kg*, *Ingham Healthy Select Turkey Breast 2kg* and *Chickadee Sliced Chicken Breast Strips 1kg*. Only one product contained less than 500mg of sodium per 100g (see *Spotlight Product 6*).

SPOTLIGHT PRODUCT 6

Sliced Oven Roasted Turkey Breast 1kg

This poultry product is listed as a new product. Per 100g it contains 0.7g saturated fat (contributing to 5% of total energy) and 415mg sodium, and is a good source of protein (23g/100g).

Cakes, Muffins and Pastries

Table 13 shows the distribution of key nutrients from 'Foods in Focus' registered within the 'Snacks' main product category, including: 'Cakes, Muffins and Pastries'.

Table 13 In focus: Nutritional content of cakes, muffins and pastries

	Key nutrient *	Total energy kJ/serve		Energy density kJ/100g		Saturated fat g/serve		Sodium mg/100g		Dietary fibre g/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Cakes, muffins and pastries Amber (n = 11)	Median	N/A	714.8	N/A	1000.0	N/A	1.0	N/A	218.0	N/A	2.5
	Range		630.5-892.5		909.0-1190.0		0.5-2.5		188.0-295.0		1.6-3.2
	Threshold		≤ 900		≤ 1200		≤ 3.0		≤ 300.0		≥ 1.5

NB: N/A means category does not apply for that product sub-category.

The majority of these products (73%) were muffins, ranging in serving size from 60g to 80g. Given this narrow product range, there was little variation in nutritional composition amongst registered cakes, muffins and pastries. Specific brands, however, varied slightly in energy density, fat and fibre content, with little variation in sodium. The *Better Bite muffin 75g* range contained the highest energy density 1180kJ to 1190kJ per 100g (Figure 24). All products ranged between 0.5g to 1.7g saturated fat per serve (Figure 25), except for the *Better Bite Junior Apple Pie 60g* (see *Spotlight Product 7*). Those with the lowest saturated fat per 100g were the *97% Fat Free Muffin 80g* and two new products: *Apple Fruit Wellness Cake 2kg* and the *Pear and Raspberry Fruit Wellness Cake 2kg*.

SPOTLIGHT PRODUCT 7

Better Bite junior apple pie 60g contained the highest saturated fat content at 2.5g per 100g (Figure 25), of all *Cakes, muffins and pastries*.

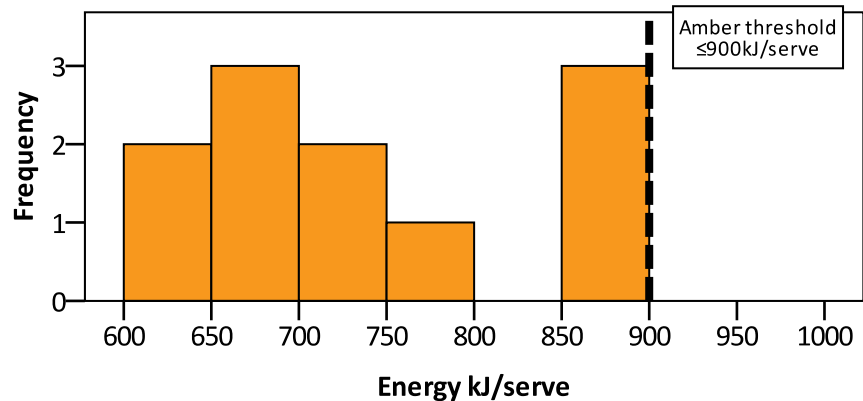


Figure 23 Cakes, Muffins and Pastries – Energy in kilojoules per serve

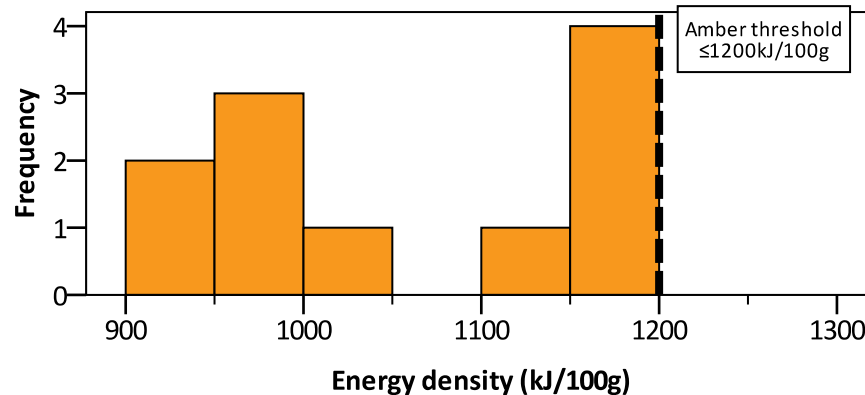


Figure 24 Cakes, Muffins and Pastries – Energy density (kilojoules per 100g)

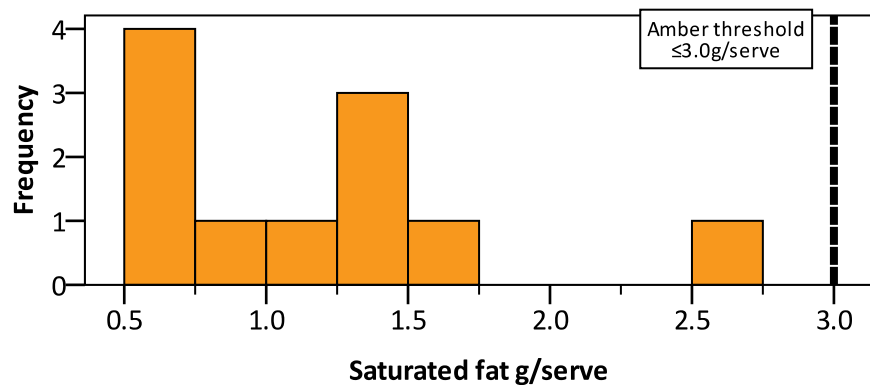


Figure 25 Cakes, Muffins and Pastries – Saturated fat in grams per serve



Figure 26 Cakes, Muffins and Pastries – Sodium in milligrams per 100g



Figure 27 Cakes, Muffins and Pastries – Dietary fibre in grams per 100g

Figure 12 shows the dietary fibre content of Cakes, Muffins and Pastries, clustered just above the HK threshold of 1g dietary fibre per serve, with 45% of products containing between 1.7g to 2.0g dietary fibre per serve. A further 36% of products contained over 3g dietary fibre per serve (see ‘Spotlight Product’ 8)

SPOTLIGHT PRODUCT 8
Muffin Delite Hi fibre 75g
 Per 100g, these muffins all contained >4.0g fibre (>3.0g fibre per serve), 195mg to 220mg sodium and 926kJ to 1000kJ. However, these muffins are high in fat at 4.7g/100g, 22% to 25% of which is saturated.

4 DISCUSSION

This study provides a reference point for future studies of the school food environment. The report describes the nutrient profiles of the full range of products registered with HKA which were for sale in NSW schools as at October 2009. The transparency of the HKA Registered Product Scheme, particularly the availability of the HK nutrient criteria, makes the scheme an important contributor to the ongoing process of reviewing such food approval programs.

Products registered by HKA for use in schools have often been specifically manufactured to meet the needs of the school setting. While nutrient quality is a key issue, the school canteen market also places demands around cost, portion size and appeal.

Our results show that the nutrient content of many registered foods clustered just below the HKA nutrient criteria thresholds for total energy and for negative nutrients such as fat, saturated fat, sodium and sugar. The nutrient content for some positive nutrients, such as calcium, was also found to cluster just above the HKA threshold in many products. While factors such as product ingredients, taste, cost and technological processes may influence the nutrient characteristics of products, it is possible that nutrient thresholds may also actively influence the formulation of foods for the school canteen market. For example, in the case of a milk-based gelato, the addition of skim milk powder (which is high in calcium) increased the nutrient density of the product contributing to its total calcium content, which was a requirement to meet nutrient thresholds for registration. It is worth noting that the HKA nutrient criteria are generally set at a level which matches that found in core foods without fortification.

There are a number of notable issues in relation to the nutrient criteria and there may be potential to explore some of these in future research and industry discussions. For example, while thresholds for energy density potentially capture high sugar content, the high level of sugar may be masked in very low fat products, e.g. iced confectionery based on skim or reduced fat dairy milks. A further consideration is the use of added sugars in flavoured milk and sweetened snack foods. Recommendations by the World Health Organization for children's diets indicate that no more than 10% of total daily energy should come from added sugars (11). Similarly, pies, pasties, and pizza style products currently lack thresholds for dietary fibre content. However, the HK registration system and nutrient criteria are currently designed so that products can be assessed on the basis of readily available information about food composition, and not further analyses of food composition. This means that the current criteria do not include specifications around 'added' versus 'total' sugars, or for the percentage of whole food ingredients such as fruit, vegetables and wholegrain cereals.

From the results of this research, it was clear that where nutrient criteria were reported per serve, nutrient values, within product sub-categories, were determined more by serving size than by variations in nutritional composition. Reporting nutrients per 100g/100mL, however, does provide the most informative measure of the product's nutritional composition, and facilitates comparison of nutritional quality. While the literature regarding nutrient profiling recommends measuring the nutritional composition of foods and beverages per 100g/100mL, in terms of both positive nutrients (including calcium, fibre, and fruit and vegetable content) and negative nutrients (including saturated fats, sodium, sugar and total energy), (9-10) the use of criteria expressed 'per serve' has the potential to influence serving sizes, and hence through smaller serving sizes, potentially reduce total energy of products as consumed within the school setting. These smaller serving sizes are hence often more appropriate for the school canteen setting.

Nutrient data reported 'per serve' provided a limited measure of a food's nutritional composition. This is in part due to the lack of definition of standard serves in all settings, not just school canteens. Manufacturers may reduce the serving size to achieve registration for energy dense foods to allow them to meet nutrient and energy thresholds. For example, those products that have achieved registration at *Amber* status through size modification may still contain a relatively high amount of saturated fat, sugar and sodium; however, smaller serves potentially achieve a reduction in energy and negative nutrients as consumed, which is a desirable outcome. Such registered products though, may become endorsed informally by children and their parents within and through schools, and may then be marketed and sold as 'endorsed' products, leading them to be perceived by children, parents and the broader community as healthy choices, even when consumed in larger serving sizes. This highlights the need to undertake consumer education around *Amber* foods, which are not actively promoted on the canteen menu.

Smaller serving sizes not only provide the school community with access to products with lower total energy, they also create an opportunity to potentially influence the broader retail food market, by generating demand for energy dense products to be available in smaller packaging sizes across other retail outlets. The manufacture of smaller package sizes, however, needs to consider environmental concerns regarding the overall quantities of packaging materials.

Note that this study did not examine the relative numbers of registered products by product type or identify food categories with low numbers of registered products. Such patterns may reflect the nutrient criteria for some categories, or perceived consumer demand in the school canteen market. This too could be further examined.

Other future research could include:

- Examination of the impact of promoting greener food categories, through differential pricing and promotion strategies, and to actively market registered *Green* products through school canteens
- A detailed analysis of the effects of promotion and differential pricing on sales of different types of healthy foods
- Collation and analysis sales data from school canteens leased by HKA, to examine sales of different registered foods and beverages ; and
- Comparison the nutritional content of products registered with HKA to those for sale commercially through retail food outlets, such as supermarkets.

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APPENDICES

Appendix 1. Key nutrients identified for analysis by product sub-category

(NB: X indicates that the nutrient was selected for analysis)

Product category	Sub category	Nutrients for analysis							Green nutrient criteria cut points	Amber nutrient criteria cut points	
		Saturated fat g/100g	Total fat g/100g	Fibre g/100g	Total sugar g/100g	Sodium mg/100g	Calcium mg/100g	Energy density kJ/100g			
Breakfast cereals	Breakfast cereals	X		X		X					
Drinks	Juice: Fruit and vegetable							X	N/A	Energy <= 600kJ/serve	
	Juice: Fruit only							X	N/A	Energy <= 600kJ/serve	
	Juice: Vegetable only					X			Sodium <=250mg/100g	Sodium <= 400mg/100ml	
	Milk and soy beverages: flavoured	X						X	X	Energy <= 900kJ/serve Saturated fat <=1.3g/100ml Calcium >= 100mg/100ml	Energy <= 1600kJ/serve Saturated fat <=2.6g/100ml Calcium >= 100mg/100ml
	Milk and soy beverages: unflavoured	x	X						X	Total fat <= 2.0g/100g Saturated fat <=1.3g/100ml Calcium >= 100mg/100ml	Total fat <= 4.0g/100g Saturated fat <=2.6g/100ml Calcium >= 100mg/100ml
	Milk based beverages									N/A	Energy >= 900kJ/serve Protein>=2.0g/100ml Calcium>=70mg/100ml Actual milk content>=60% in reconstituted state
	Waters: plain						X			X	Energy =0kJ/100g Sodium <= 20mg/100ml
Waters: sweetened						X			X	N/A	Energy <= 50kJ/100g & <=300kJ/serve Sodium <= 100mg/serve

Product category	Sub category	Nutrients for analysis							Green nutrient criteria cut points	Amber nutrient criteria cut points	
		Saturated fat g/100g	Total fat g/100g	Fibre g/100g	Total sugar g/100g	Sodium mg/100g	Calcium mg/100g	Energy density kJ/100g			
Frozen treats	Fruit: Frozen Juice							X	N/A	Energy <= 600kJ/serve	
	Ice creams and Milk-based Ice Confections	X						X	X	N/A	Energy <= 600kJ/serve Saturated fat <=3.0g/serve Calcium >= 80mg/serve
Hot foods and Ingredients	Pasta Sauces and Cooking Sauces	X				X				Saturated fat <= 1.0g/100g Sodium <= 250mg/100g	Saturated fat <= 2.0g/100g Sodium <= 350mg/100g
	Pasta/Rice/Noodle Products: Plain	X				X				Saturated fat <= 1.0g/100g Sodium <= 100mg/100g	Saturated fat <= 1.5g/100g Sodium <= 150mg/100g
	Pasta/Rice/Noodle Products: Ready to Eat	X				X			X	Energy <= 600kJ/100g & 1600kJ/serve Saturated fat <=2.0g/100g Sodium <= 300mg/100g and <=750mg/serve	Energy <= 800kJ/100g & 1600kJ/serve Saturated fat <=4.0g/100g Sodium <= 400mg/100g and <=900mg/serve
	Patties, Burgers and Rissoles: Coated and/or Crumbed	X				X			X	N/A	Energy <= 1000kJ/100g Saturated fat <=4.0g/100g Sodium <= 450mg/100g
	Patties, Burgers, Rissoles and Omelettes: Non Coated/Crumbed	X				X			X	Energy <= 800kJ/100g Saturated fat <=3.0g/100ml Sodium >= 350mg/100ml	Energy <= 1000kJ/100g Saturated fat <=4.0g/100g Sodium <= 450mg/100g

Product category	Sub category	Nutrients for analysis							Green nutrient criteria cut points	Amber nutrient criteria cut points
		Saturated fat g/100g	Total fat g/100g	Fibre g/100g	Total sugar g/100g	Sodium mg/100g	Calcium mg/100g	Energy density kJ/100g		
	Pies, Pasties, Sausage Rolls and Savoury Pastries	X				X		X	N/A	Energy <= 1000kJ/100g & <=1600kJ/serve Saturated fat <=5.0g/100g Sodium <= 350mg/100g Energy <= 1000kJ/100g & <= 1600kJ/serve Saturated fat <=5.0g/100g Sodium >= 350mg/100g
	Pizza-style Products	X				X		X	N/A	
	Soups	X		X		X			Saturated fat <=1.0g/100g & <=3.0g/serve Sodium >= 250mg/100g & 750mg/serve Dietary fibre>= 1.5g/100g	Saturated fat <=2.0g/100g & <=6.0g/serve Sodium >= 300mg/100g & 900mg/serve Dietary fibre>= 0.7g/100g
	Vegetables: Frozen	X				X		X	Sodium<= 150mg/100g	Energy <=800kJ/100g Saturated fat<=1.5g/100g Sodium<= 350mg/100g
	Vegetables: Frozen oven-baked potato products	X				X		X	Sodium<= 150mg/100g	Energy <=800kJ/100g Saturated fat<=1.5g/100g Sodium<= 350mg/100g
	Vegetables: Mashed	X				X			Saturated fat <= 0.5g/100g Sodium<= 150mg/100g & <= 225mg/serve	Saturated fat <= 1.5g/100g Sodium<= 300mg/100g & <= 450mg/serve

Product category	Sub category	Nutrients for analysis							Green nutrient criteria cut points	Amber nutrient criteria cut points	
		Saturated fat g/100g	Total fat g/100g	Fibre g/100g	Total sugar g/100g	Sodium mg/100g	Calcium mg/100g	Energy density kJ/100g			
Ready to Eat Meals - Chilled	Pre-Prepared Salads: Noodle/Pasta/Rice	X				X				Saturated fat<=/= 2.0g/100g Sodium<=/= 250mg/100g & <=/=750mg/serve	Saturated fat<=/= 4.0g/100g Sodium<=/= 400mg/100g & <=/=900mg/serve
Sandwich, Burger, Wrap and Roll Ingredients	Breads and Bread Alternatives	X				X				Saturated fat <=/= 1.5g/100g Sodium <=/= 450mg/100g Fibre<=/=3.0g/100g Total fat<=/= 25.0g/100g Sodium <=/= 600mg/100g	Saturated fat <=/= 4.0g/100g Sodium <=/= 600mg/100g Fibre<=/=1.5g/100g Total fat<=/= 36.0g/100g Sodium <=/= 750mg/100g
	Fillings/Toppings - Cheese: Hard and Semisoft Fillings/Toppings - Legumes: Canned		X			X				Sodium <=/= 300mg/100g	Saturated fat <=/=1.5g/100g Sodium <=/= 450mg/100g
	Fillings/Toppings - Meats - Poultry	X				X				N/A	Saturated fat<=/=2.5g/100g Sodium <=/= 700mg/100g
	Fillings/Toppings - Meats - Sandwich and Ham	X				X				N/A	Saturated fat<=/=2.5g/100g Sodium <=/= 750mg/100g
	Frankfurts, Sausages, Hot Dogs	X				X		X		N/A	Energy <=/=750kJ/100g Saturated fat <=/=3.0g/100g Sodium<=/= 450mg/100g
	Processed Tuna	X				X				Saturated fat <=/=1.0g/100g Sodium<=/= 350mg/100g	Saturated fat <=/=2.5g/100g Sodium<=/= 500mg/100g

Product category	Sub category	Nutrients for analysis							Green nutrient criteria cut points	Amber nutrient criteria cut points	
		Saturated fat g/100g	Total fat g/100g	Fibre g/100g	Total sugar g/100g	Sodium mg/100g	Calcium mg/100g	Energy density kJ/100g			
Snacks	Biscuits: Sweet	X		X		X		X	N/A	Energy</=600kJ/serve Saturated fat</=2.0g/serve Sodium</=300mg/100g Fibre>/=1.0g/serve	
	Buns and Scones: Savoury	X		X		X		X	Energy</=900kJ/serve Saturated fat</=3.0g/100g Sodium</=450mg/100g Fibre>/=3.0g/serve	Energy</=1200kJ/serve Saturated fat</=5.0g/100g Sodium</=600mg/100g Fibre>/=1.5g/serve	
	Buns and Scones: Sweet	X		X		X		X	Energy</=900kJ/serve Saturated fat</=1.5g/100g Sodium</=450mg/100g Fibre>/=3.0g/serve	Energy</=1200kJ/serve Saturated fat</=4.0g/100g Sodium</=600mg/100g Fibre>/=1.5g/serve	
	Cakes, Muffins and Pastries Crumpets, Pikelets and Pancakes	X		X		X		X	N/A	Energy</=1200kJ/100g & </= 900kJ/serve Saturated fat</=3.0g/serve Sodium</=300mg/100g Fibre>/=1.5g/serve	
	Dairy and Soy: Indulgent Desserts	X							X	N/A	
	Dairy and Soy: Snacks and Yoghurts (Plain/Flavoured/ Drinking)	X						X	X	Energy</=850kJ/serve Saturated fat</=1.3g/100g Sodium>/=100mg/100g	Energy</=1100kJ/serve Saturated fat</=2.6g/100g Sodium>/=80mg/100g
	Fruit: Canned, Tubs and Sachets				X						Sugar</= 15.0g/100g
	Fruit: Dried, Leather, Bars				X					>95% dried fruit	>90% dried fruit

Product category	Sub category	Nutrients for analysis							Green nutrient criteria cut points	Amber nutrient criteria cut points
		Saturated fat g/100g	Total fat g/100g	Fibre g/100g	Total sugar g/100g	Sodium mg/100g	Calcium mg/100g	Energy density kJ/100g		
	Savoury Dry Snack Foods: Popcorn/Chips/ Soy/Corn	X		X	X	X		X	Energy</=450kJ/serve Saturated fat</=1.0g/serve Sodium</=200mg/100g Fibre>/=2.0g/serve Sugars </= 10.0g/100g N/A	Energy</=600kJ/serve Saturated fat</=2.0g/serve Sodium</=200mg/100g Fibre>/=1.5g/serve Sugars</=10.0g/100g Energy</=600kJ/serve Saturated fat</=2.0g/serve Sodium</=300mg/100g Fibre>/=1.0g/serve
	Snack Food Bars	X		X		X		X		

Appendix 2. Rationale for product sub-categories selected as 'Foods in Focus'

PRODUCT SUB-CATEGORY	Rationale for being 'in focus'			
	Healthy Kids (HK) School Canteens sales data	Self-reported purchasing frequency by children	Food categories contributing the most to children's daily energy intake (esp. within schools)	HK reported top-selling items (anecdotal)
	<p>The top five selling food items were identified from sales data averaged for July 09-April 10, from four HK operated canteens within NSW primary schools. These canteens are dedicated to following <i>Fresh Tastes</i>, providing healthier choices within product categories and cooking fresh as much as possible and as such, are not representative of NSW primary school canteens</p>	<p>Post-introduction of <i>Fresh Tastes</i>, Finch et al identified the frequency at which foods and drinks were purchased by children from school canteens in the NSW Hunter region.¹</p>	<p>From a secondary analysis of NNS95 survey data, Bell & Swinburn² reported the food categories contributing most to the energy intake of children aged 5-15 years at school, and reported significant differences in the % contribution to energy intake of different foods consumed by children who use the school canteen compared with non-canteen users. Note these data were collected prior to the introduction of <i>Fresh Tastes</i>. Alternatively '<i>Kid's eat, Kid's play</i>' data³ were collected post-introduction of <i>Fresh Tastes</i> for boys and girls aged 2-16 years – only data for children 4-16 yrs (primary school age) are included here. The % contribution to energy intake of different food categories is reported but source of the food (i.e. schools) is not reported in this publication.</p>	<p>HKA reported a subjective assessment of the top five most popular selling items.</p>
Milk and Soy Beverages: Flavoured	<p>For all four HK school canteens, flavoured milk was identified as a top selling item.</p>	<p>Reported as being frequently purchased by 42% of children from the school canteen for lunch.</p>	<p>Children's who used the school canteen obtained 6% of their energy intake from milk (regular, flavoured, soy) – this was significantly higher than the children who do not use the school canteen, at 4%.² Milk products and dishes contribute 14-18% of the daily energy intake for boys and girls.³</p>	<p>✓ (esp. Chocolate flavour)</p>

PRODUCT SUB-CATEGORY	Rationale for being 'in focus'			
	Healthy Kids (HK) School Canteens sales data	Self-reported purchasing frequency by children	Food categories contributing the most to children's daily energy intake, (esp. within schools).	HK reported top-selling items (anecdotal)
Pies, Pasties, Sausage rolls and Savoury pastries	Three of the top five food items sold within one HK school were from this category (beef pie, potato top pie, sausage roll).	Reported as being frequently purchased from the school canteen by 54% of children for lunch, and 19% for recess.	Children's who used the school canteen obtained 21% of their energy intake from fast-foods (including pies, sausage rolls, hotdogs and pizza) – this was significantly higher than the children who do not use the school canteen, at 8%. ² Meat, poultry and game products and dishes contributed 9-13% of the daily energy intake for boys and girls. ³	✓ (esp. Beef pies)
Fruit: Frozen juice	Within two of the four HK schools, frozen fruit juice was one of the top five selling items.	n/a	Children who used the school canteen obtained 6% of their energy intake from fruit/cordial drinks – this was significantly lower than among the children who did not use the school canteen, at 8%. ²	✓
Juice: Fruit only	n/a	Reported as being frequently purchased from the school canteen by 25% of children for lunch and 21% for recess.	Children who used the school canteen obtained 6% of their energy intake from fruit/cordial drinks – this was significantly lower than among the children who did not use the school canteen, at 8%. ²	✗
Fillings and Toppings: Meats - Poultry	Within three of the four HK schools, poultry was used as a filling in ' <i>chicken wraps</i> ' and ' <i>chicken and cheese toasties</i> '.	n/a	Meat, poultry and game products and dishes contributed 9-13% of the daily energy intake for boys and girls. ³	✓

Patties, Burgers and Rissoles: Coated and/or Crumbed	n/a	Reported as being frequently purchased from the school canteen by 29% of children for lunch (<i>based on battered/fried poultry products: chicken nuggets, drummies, wings or chippies</i>).	Meat, poultry and game products and dishes contributed 9-13% of the daily energy intake for boys and girls. ³	✘
Ice creams and Milk-based Ice Confections	Milk-based gelato reported as fourth most popular item at one HK school.	Reported as being frequently purchased from the school canteen by 23% of children for recess.	Children who used the school canteen obtained 4% of their energy intake from desserts (ice cream, gelato, and dairy desserts) – this was significantly higher than among the children who do not use the school canteen, at 3%. ² Milk products and dishes contribute 14-18% of the daily energy intake for boys and girls. ³	✓
Pizza-style products	n/a	Reported as being frequently purchased from the school canteen by 30% of children for lunch.	See sub-category: Pies, Pasties, Sausage rolls and Savoury pastries. Cereal-based products and dishes contributed 15-19% of the daily energy intake for boys and girls. ³	✘
Cakes, muffins and pastries	n/a	Reported as being frequently purchased from the school canteen by 19% of children for recess.	Children who used the school canteen obtained 7% of their energy intake from cakes and buns – this was not significantly different to the children who did not use the school canteen, at 6%. ²	✘

Abbreviations: esp. = especially, *Fresh Tastes = Fresh Tastes @ School* NSW Healthy School Canteens Strategy, HK = Healthy Kids, n/a = no evidence for this product sub-category, HKA= Healthy Kids School Canteens Association

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Appendix 3. Descriptive nutrient analysis of registered products by product sub-category

Abbreviations: N/A = registration category does not apply for that product sub-category, NP = No Products registered

NB: grey cells indicate that no nutrient criteria were set by HKA for the specified nutrient, although, out of interest, data is reported for some key nutrients despite the absence of nutrient criteria.

Main product category: Breakfast cereals

	Key nutrient	Total energy kJ/serve		Saturated fat g/100g		Fibre g/100g		Sodium mg/100g		Sugars g/100g	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Breakfast cereals Amber (n= 49) Green (n=32)	Median	580.0	570.5	1.1	1.3	10.9	7.1	270.0	106.5	24.9	18.4
	Range	350.2-942.0	465.0-918.0	0.1-1.8	0.3-3.7	8.0-45.4	4.0-12.6	5.0-400.0	14.0-505.0	2.9-34.3	1.0-31.9
	Threshold	N/A	N/A	≤ 2.0	≤ 4.0	≥ 8.0	≥ 4.0	≤ 400.0	≤ 600.0	N/A	N/A

Main product category: Drinks

	Key nutrient	Total energy kJ/serve		Saturated fat g/100mL		Total fat g/100mL		Calcium mg/100mL		Sugars g/100mL		Sodium mg/100mL	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Juice: Fruit and vegetable Amber (n = 1)	Median	N/A	550										
	Range		-										
	Threshold		≤600kJ										
Juice: Fruit only Amber (n = 98)	Median	N/A	467.5										
	Range		166.1-591.0										
	Threshold		≤ 600kJ										

	Key nutrient	Total energy kJ/serve		Saturated fat g/100mL		Total fat g/100mL		Calcium mg/100mL		Sugars g/100mL		Sodium mg/100mL	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Juice: Vegetable only Amber (n = 2)	Median Range Threshold											166 - ≤ 250	300 - ≤ 400
Milk based beverages Amber (n = 5)	Median Range Threshold	N/A	865.8 438.6-894.4 ≤ 1600	N/A	0.5 0.5-1.4 ≤ 2.6			N/A	97.0 76.0-128.0 [†] ≥ 100	N/A	13.5 7.1-14.0 N/A		
Milk and soy beverages: Flavoured Green (n=46) Amber (n= 39)	Median Range Threshold	660.0 407.0-900.0 ≤ 900	1260.0 770.0-1515.0 ≤ 1600	0.9 0.2-1.3 ≤ 1.3	1.1 0.2-2.3 ≤ 2.6			123.0 103.0-285.0 ≥ 100	114.0 103.0-400.0 ≥ 100	9.0 5.8-15.1 N/A	9.4 7.2-18.0 N/A		
Milk and soy beverages: Unflavoured Green (n=15) Amber (n = 12)	Median Range Threshold			0.1 0.0-1.3 ≤ 1.3	2.4 0.4-2.4 ≤ 2.6	0.9 0.1-2.0 ≤ 2.0	3.6 3.4-3.6 ≤ 4.0	132.0 120.0-285.0 ≥ 100	123.0 118.0-123.0 ≥ 100	5.2 1.9-12.5 [‡] N/A	4.8 1.7-4.9 N/A		
Waters: Plain Green (n = 13)	Median Range Threshold	0.0 - 0.0	N/A									0.0 0.0-1.4 ≤ 20.0	N/A

[†] Blizzard Hot Chocolate 2L and rise Fresh Start 260mL varieties were below the 100mg/100g nutrient threshold for this category.

[‡] 12.5g/100mL sugar represents an evaporated milk product: CARNATION Light & Creamy Evaporated Milk 185mL

	Key nutrient	Total energy kJ/serve		Saturated fat g/100mL		Total fat g/100mL		Calcium mg/100mL		Sugars g/100mL		Sodium mg/100mL	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Waters: Sweetened Amber (n = 10)	Median Range Threshold	N/A	245.0 187.5-292.5 ≤ 300.0									Reported as mg/serve N/A	25.0 7.5-84.0 ≤100.0

Main product category: Frozen treats

	Key nutrient	Total energy kJ/serve		Saturated fat g/serve		Calcium mg/serve		Sugars g/100mL	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Fruit: Frozen juice Amber (n = 50)	Median Range Threshold	N/A	445.0 140.0-537.5 ≤ 600					NP	11.0 7.0-13.5 N/A
Icecreams and milk-based ice confections Amber (n = 38)	Median Range Threshold	N/A	509.0 237.5-591.0 ≤ 600	N/A	1.5 0.1-2.9 ≤ 3.0	N/A	136.0 80.0-732.0 ≥ 80.0		19.7 8.6-23.0 N/A

NB: Serving size for Fruit: Frozen juice products must be no more than 250mL. Of the registered products the serving size did not exceed 250mL, with a median serve size of 232mLs.

Main product category: Hot food and ingredients

	Key nutrient	Energy density kJ/100g		Total energy kJ/serve		Saturated fat g/100g		Sodium mg/100g		Sodium mg/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Pasta sauces and cooking sauces Amber (n = 4) Green (n = 3)	Median Range Threshold					0.0 N/A ≤ 1.0	0.1 0.1-1.3 ≤ 2.0	170.8 100.0-250.0 ≤ 250.0	288.0 252.0-350.0 ≤ 350.0		
Pasta/Rice/Noodle products: Plain Green (n = 1)	Median Range Threshold					0.2 - ≤ 1.0	N/A ≤ 1.5	4.0 - ≤ 100.0	N/A ≤ 150.0		
Pasta/Rice/Noodle products: Ready to eat Amber (n = 14) Green (n=28)	Median Range Threshold	486.5 309.0-593.0 ≤ 600	575.5 385.0-782.0 ≤ 800	972.5 543.0-1276 ≤ 1600	1203.8 581.0-1564.0 ≤ 1600	1.4 0.0-2.0 ≤ 2.0	2.7 0.4-3.9 ≤ 4.0	232.0 144.0-295.0 ≤ 300.0	315.0 225.0-350.0 ≤ 400.0	507.0 255.0-712.5 ≤ 750.0	679.0 350.0-825.6 ≤ 900.0
Patties, burgers and rissoles: coated and/or crumbed Amber (n = 40)	Median Range Threshold	N/A	897.5 578.1-994.0 ≤ 1000			N/A	2.5 0.9-3.9 ≤ 4.0	N/A	394.0 165.0-449.0 ≤ 450.0		
Patties, burgers, rissoles and omelettes: non-coated and/or crumbed Amber (n = 3) Green (n = 3)	Median Range Threshold	615.0 593.0-710.0 ≤ 800	863.0 742.0-915.0 ≤ 1000			0.7 0.4-1.7 ≤ 3.0	1.9 1.2-3.5 ≤ 4.0	320.0 300.0-330.0 ≤ 350.0	400.0 230.0-426.0 ≤ 450.0		

	Key nutrient	Energy density kJ/100g		Total energy kJ/serve		Saturated fat g/100g		Sodium mg/100g		Sodium mg/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Pies, pasties, sausage rolls and savoury pastries Amber (n = 45)	Median	N/A	855.0	N/A	1262.0	N/A	3.7	N/A	299.0		
	Range		579.0- 1000.0		324.7-1600.2		1.7-5.0		214.0-350.0		
	Threshold		≤ 1000		≤ 1600		≤ 5.0		≤ 350.0		
Pizza style products Amber (n = 13)	Median	N/A	922.0	N/A	1180.0	N/A	2.3	N/A	290.0		
	Range		772.0-991.0		875.0-1585.6		1.1-3.7		100.0-345.0		
	Threshold		≤ 1000		≤ 1600		≤ 4.0		≤ 350.0		

Main product category: Hot food and ingredients

	Key nutrient	Energy density kJ/100g		Saturated fat g/100g		Saturated fat g/serve		Sodium mg/100g		Sodium mg/serve		Dietary fibre g/100g	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Soups Amber (n = 9) Green (n = 7)	Median Range Threshold			0.3 0.1-0.7 ≤ 1.0	0.5 0.1-1.2 ≤ 2.0	0.5 0.3-1.2 ≤ 3.0	0.9 0.3-3.3 ≤ 6.0	175.0 135.0-250.0 ≤ 250.0	190.0 110.0-300.0 ≤ 300.0	297.5 229.5-625.0 ≤ 750.0	323.0 187.0-750.0 ≤ 900.0	2.2 1.5-3.0 ≥ 1.5	1.1 0.8-1.9 ≥ 0.7
Vegetables: Frozen Green (n = 30)	Median Range Threshold	N/A	NP ≤ 800	N/A	NP ≤ 1.5			17.0 1.0-48.0 ≤ 150.0	NP ≤ 350.0				
Vegetables: Frozen oven- baked potato products Amber (n = 8)	Median Range Threshold	N/A	505.0 402.0-633.0 ≤ 800	N/A	0.5 0.3-1.3 ≤ 1.5			NP ≤ 150.0	62.5 13.0-251.0 ≤ 350.0				
Vegetables: Mashed Amber (n = 1)	Median Range Threshold			NP ≤ 0.5	0.4 - ≤ 1.5			NP ≤ 150.0	215.0 - ≤ 300.0	NP ≤ 225.0	215.0 - ≤ 450.0		

Main product category: Ready to eat meals – chilled

	Key nutrient	Saturated fat g/100g		Sodium mg/100g		Sodium mg/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber
Pre-prepared salads: Noodle, pasta and rice Amber (n = 5) Green (n = 1)	Median	0.3	1.0	280.0	305.0	490.0	533.8
	Range	-	0.3-2.0	-	245.0-370.0	-	428.8-647.5
	Threshold	≤ 2.0	≤ 4.0	≤ 250.0	≤ 400.0	≤ 750.0	≤ 900.0

Main product category: Sandwich, burger, wrap and roll ingredients

	Key nutrient	Total fat g/100g		Saturated fat g/100g		Sodium mg/100g		Energy density kJ/100g		Dietary fibre g/100g	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Breads and bread alternatives Green (n = 35) Amber (n = 15)	Median			0.1	0.3	410.0	500.0			5.4	2.9
	Range			0.1-0.8	0.1-2.2	20.0-450.0	250.0-600.0			3.0-8.3	2.3-7.5
	Threshold			≤ 1.5	≤ 4.0	≤ 450	≤ 600			≥ 3.0 (flat breads ≥ 2.0)	≥ 1.5 (flat breads ≥ 1.0)
Fillings/Toppings: Cheese – Hard and semisoft Amber (n = 9) Green (n = 4)	Median	23.5	33.3			541.0	668.0				
	Range	21.7-24.0	23.4-36.0			530.0-600.0	610.0-720.0				
	Threshold	≤ 25.0	≤ 36.0			≤ 450.0	≤ 750.0				

	Key nutrient	Total fat g/100g		Saturated fat g/100g		Sodium mg/100g		Energy density kJ/100g		Dietary fibre g/100g	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Fillings/Toppings: Legumes – Canned Amber (n = 2)	Median Range Threshold			N/A	0.1 0.0-0.1 ≤ 1.5	NP	357.5 350.0-365.0 ≤ 450.0				
Fillings/Toppings: Meats – Poultry Amber (n = 16)	Median Range Threshold			N/A	1.0 0.1-2.1 ≤ 2.5	N/A	638.0 415.0-686.0 ≤ 700.0				
Fillings/Toppings: Meats – sandwich and ham Amber (n = 1)	Median Range Threshold			N/A	0.1 - ≤ 2.5	N/A	585.0 - ≤ 750.0				
Frankfurts, sausages and hotdogs Amber (n = 1)	Median Range Threshold			N/A	2.0 - ≤ 3.0	N/A	443.0 - ≤ 450.0	N/A	548.0 - ≤ 750.0		
Processed tuna Green (n = 2)	Median Range Threshold			0.2	NP 0.2-0.2 ≤ 1.0	NP	252.5 210.0-295.0 ≤ 350.0				

Main product category: Snacks

	Key nutrient	Total energy kJ/serve		Energy density kJ/100g		Saturated fat g/serve		Sodium mg/100g		Dietary fibre g/100g		Dietary fibre g/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Biscuits sweet Amber (n = 2)	Median Range Threshold	N/A	588.0 577.5-598.5 ≤ 600									N/A	1.9 1.7-2.0 ≥ 1.0
Buns and Scones: Savoury Amber (n = 5)	Median Range Threshold	NP	1080.0 888.0-1150.0 ≤ 900 ≤ 1200			NP	2.2 1.5-2.8 ≥ 3.0 ≥ 1.5	NP	2.2 1.5-2.8 ≥ 3.0 ≥ 1.5	NP	2.2 1.5-2.8 ≥ 3.0 ≥ 1.5		
Buns and Scones: Sweet Green (n = 1) Amber (n = 6)	Median Range Threshold	783.8	1360.0 1060.0-1380.0 ≤ 900 ≤ 1200			3.8	2.2 1.5-3.2 ≥ 3.0 ≥ 1.5	3.8	2.2 1.5-3.2 ≥ 3.0 ≥ 1.5	3.8	2.2 1.5-3.2 ≥ 3.0 ≥ 1.5		
Cakes, muffins and pastries Amber (n = 11)	Median Range Threshold	N/A	714.8 630.5-892.5 ≤ 900	N/A	1000.0 909.0-1190.0 ≤ 1200							N/A	2.5 1.6-3.2 ≥ 1.5
Crumpets, pikelets and pancakes Amber (n = 7)	Median Range Threshold	NP	351.5 252.5-741.2 ≤ 600.0 ≤ 900.0			NP	2.0 1.8-3.0 ≥ 3.0 ≥ 1.5	NP	2.0 1.8-3.0 ≥ 3.0 ≥ 1.5	NP	2.0 1.8-3.0 ≥ 3.0 ≥ 1.5		

Main product category: Snacks cont.

	Key nutrient	Total energy kJ/serve		Saturated fat g/serve		Sodium mg/100g		Sodium mg/serve		Dietary fibre g/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Savoury dry snack foods: popcorn, chips, soy and corn Green (n = 4) Amber (n = 14)	Median	447.9	523.8	0.6	0.8			148.0	195.2	2.5	1.5
	Range	445.4-449.0	455.0-588.0	0.6-0.7	0.4-1.0			143.4-149.3	161.5-199.6	2.4-2.6	1.0-1.6 ^s
	Threshold	≤ 450.0	≤ 600.0	≤ 1.0	≤ 2.0			≤ 150.0	≤ 200.0	≥ 2.0	≥ 1.5
Snack food bars Amber (n=20)	Median	N/A	525.4	N/A	0.7	N/A	150.0			N/A	1.8
	Range		333.9-580.7		0.3-1.8		10.0-285.0				1.2-2.1
	Threshold		≤ 600.0		≤ 2.0		≤ 300.0				≥ 1.0

^s Vege Crackers 25g varieties are below the Healthy Kids Nutrient Criteria Green threshold of 1.5g per serve.

Main product category: Snacks cont.

	Key nutrient	Total energy kJ/serve		Saturated fat g/serve		Saturated fat g/100g		Calcium mg/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Dairy and soy: Indulgent desserts Amber (n = 9)	Median	N/A	210.0	N/A	2.2			N/A	111.0
	Range		205.0-579.7		0.5-2.6				81.4-162.8
	Threshold		≤ 600.0		≤ 3.0				≥ 80.0

	Key nutrient	Total energy kJ/serve		Saturated fat g/serve		Saturated fat g/100g		Calcium mg/serve	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber	Green	Amber
Dairy and soy: Snacks and yoghurts (Plain / Flavoured / Drinking) Green (n = 25) Amber (n = 12)	Median	497.5	642.6			0.6	2.0	248.0	149.8
	Range	312.2-778.0	419-953.7			0.0-1.2	0.4-2.2	102.2-356.0	107.0-231.3
	Threshold	≤ 850.0	≤1100.0			≤ 1.3	≤ 2.6	≥ 100.0	≥ 80.0

Main product category: Snacks cont.

	Key nutrient	Sugar g/100g		Added confectionery		Percentage fruit (%)	
	Nutrient criteria	Green	Amber	Green	Amber	Green	Amber
Fruit: canned, tubs and sachets Green (n = 21)	Median	✓	9.4	✓	✓		
	Range		4.1-15.3				
	Threshold	No added sugars	≤15.0	None	None		
Fruit: dried, leather, bars Green (n = 8)	Median	✓	N/A	✓	NP	All ≥ 95	NP
	Range						
	Threshold	No added sugars		None	None	≥ 95	≥ 90